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WANTED: A MINISTRY OF FINE ARTS.

We wonder what M. Raymond Poincaré thought of our street decorations last week? They were marked by a certain eclecticism, though, even then, anachronisms were not infrequent. Perhaps the red caps of Liberty should, in strict appropriateness, have surmounted a guillotine, not taxes, as in Holborn. Still, we meant well, everywhere, and one can but hope the President took the will for the deed. He must have smiled, as most Frenchmen do, at our taste in other matters more permanently appertaining to Art than street decoration. If our efforts in that direction were our only *betises* we might, with true British Philistinism, ignore the jests of cultured foreigners, who wonder why John Bull, who likes his money's worth in most things, is content, as far as anything in the way of public decoration or encouragement of Art is concerned, to entrust his affairs to irresponsibles who, mostly in sheer ignorance, and not of malice aforethought, maladminister the not inconsiderable sums Parliament votes yearly. In our municipalities it is much the same. The City of London is never niggardly, but its liberality is seldom seconded by knowledge; and the same may be said of many other similar authorities. Our other guardians of taste, such as the Board of Education, the trustees of the National, Tate, Wallace, and Portrait galleries, the trustees of the National Galleries of Scotland and Ireland, the British Museum, the Office of Works, the Woods and Forests, and the like, no doubt mean well, even if some of them startle us occasionally; but their control is imperfect, the selection of their members is haphazard, and the result is the indifference of public opinion to occasional atrocities and to constant negligence, and frequent stupidities, that in France would raise storms of indignation, in comparison with which our few and rare peevish protests when some more than ordinarily brutal outrage on good taste is threatened are ludicrous.

The reason for all this is obvious enough to any man of ordinary sense. We have pointed it out for years, and so have others; but no response has been vouchsafed, and the result has been the continuous ignorant indifference of the masses of all classes to the claims of Art, and the toleration by the public generally of sins of omission and commission which should have damned the perpetrators, but have only still further demoralised the sinned against. Now, in all other matters of public concern we do—sometimes insufficiently insist on the one healthy guarantee of the rights of the governed—Responsibility. In such things we get this. It is true the Minister responsible is sometimes a square peg in a round hole. So, doubtless sometimes, the Minister of Fine Arts would be. But he would stand to be shot at, as our present responsible Ministers do, and he would have power, as they have, to control the various people connected with his Department; to initiate reforms, and check abuses. All we have got at present is a First Commissioner of Public Works, who is generally a nose of wax, and sometimes a Mr. Ayrton! Even when capable, and well intentioned, he has no power of interference in scores of instances where only prompt action can prevent abuses. Give us a Ministry of Fine Arts, with its recognised claim on the Estimates, and equal with all other Departments, and the people generally will soon learn that regard for the beautiful is as much the duty of the Government and the citizen as obedience to law or response to patriotism.

There are some indications that the recognition of this need is slowly forcing itself on public opinion. There are difficulties in the way. In law and medicine we do insist on the primal need of legislative recognition and fitness on the part of those who practise. While any charlatan can burlesque over our art, and perpetrate enormities against good taste, it is of little use seeking protection from the State from crimes against beauty. That is one of the many reasons why registration must come. There are also fears entertained by some that a Ministry of Fine Arts would be as inefficient, and would deal as inadequately with matters as those who at present neglect or ignore them. The obvious reply is that we have, in the case of our nearest neighbour, an example to the contrary. In France, art has long been recognised as one of the chief assets of the nation, and the State fosters good taste by every means in its power. Those who want details should get and read an excellent shilling volume by Mr. Wynford Dewhurst, and published by Hugh Rees, Ltd., entitled, Wanted, a Ministry of Fine Arts. Mr. Wynford Dewhurst urges at length the consideration we have briefly sketched, with which every reader will agree. But the details of French administration are really valuable, the more so because of Mr. Dewhurst's intimate acquaintance with French procedure, thanks to the facilities afforded recently by the late Under-Secretary of State for Fine Arts. That Department, directed by an Under-Secretary, responsible to Parliament, aided by permanent staffs of men in each bureau specially chosen and trained for their work, is an eminently business-like Ministry, and its small cost to the State is repaid a hundredfold in ways direct and indirect which will be apparent to the thoughtful observer. Its scope of operations is immense, and the cost to the State is about £27,000 per annum. This covers the salaries and expenses of eight special administration bureaus, comprising, amongst others, the services of architects and builders attached to the various national palaces, theatres, and historic monuments, the teaching of art, the State manufactories and preservation of State furniture, inspection, costs of all kinds, and, lastly, special missions. The French Government works art as a commercial man his business. It is practical as well as imaginative. It keeps itself well informed of the activities of its rivals, and up to date in its administrative methods. Year by year it sends out individuals and bodies of men, specialists in their line, to inspect and report upon whatever feature in æsthetics may be to the fore, or privately to ferret out secrets in art and archæology wherever ruins, buried cities, or accidents of sorts may be indicated wherever and whatever, in fact, is likely to provide useful lessons and public advantage.

The teaching of art throughout the country and in Rome, and the total cost of same, works out at about £56,000 per annum. This has its equivalent in our "South Kensington" system, and although far more efficacious, it calls for no special comment, except to note that one of the chief preoccupations of the State at the present moment is the resuscitation or rejuvenation of the decorative arts.

Another section is occupied exclusively with the national theatres, their raison d'être, and management. £85,000 per annum is voted for them, not counting interest upon cost of construction, architectural improvements, repairs, and furnishings. These theatres comprise the Opera House, whose subsidy reaches the grand total of £32,000; the Opéra-Comique, with £12,000; the Comédie Français, with £10,000; the Odéon, with £4,000; and the Conservatoire of Music, with £4,500. Various open-air and travelling theatres and musical societies in Paris and the provinces are also more or less subsidised.

Purchases of pictures, statues, etc., by living artists, national prizes, and travelling scholarships, and the [illegible]

ments costs the State £10,160 a year. This is supplemented by the sum of £5,000 devoted exclusively to grants in aid of poor artists, annuities to artists' families, and orphans. The French Government, anxious to see every section and class of the community penetrated by love of the beautiful, having trained their artist, foster his career by occasionally giving him the moral and material satisfaction of a State commission. In 1910 no less than 350 items, about equally divided between paintings in all media, sculpture, bronzes, engravings, etc., were purchased either direct from the artist or from the walls of the Annual Salons.

For "Manufactures," the total annual credit demanded is about £45,000. Certain manufactures are, and have been for generations past, a special object of solicitude to the French Government, Republican or Monarchical, such as the national porcelain works and museum at Sèvres, and the Gobelins and Beauvais tapestry factories. The products of these institutions are essentially artistic. The subsidy accorded to them is amply justified, and repaid with interest. In fact, to take the material financial side alone, the porcelain manufactory shows a handsome profit of £2,000 a year, after providing, free of charge, large and expensive pieces for the furnishing of public buildings and for diplomatic presents.

The national museums—comprising that of the Louvre, the Luxembourg, the Cluny, Versailles, and the Trianons, and, finally, with the Palace and Museum of St. Germain (with the most recent acquisition of the State, the Château of Maisons-Laffitte)—cost £60,000 per annum. Quite apart from the cost of administration and upkeep is the sum set apart for purchases of works of art for the embellishment of all the above-named museums. These are grouped under title of the "Réunion des Musées Nationaux," and are endowed with some £27,000 a year as a minimum, rising to £60,000 as in 1910, owing to special legacies and interests on legacies. The average amount available in the future is expected to reach £40,000 a year, together with certain reserve funds for immediate service in case of any desirable work of art suddenly appearing on the market and surpassing in value moneys applicable in the ordinary course.

Encouraged by the wise liberality of the State, private societies support art in France far more judiciously and liberally than here. They are further encouraged by the fact that the Ministry of Fine Arts is vigilant in its care of beautiful objects and great monuments, and that it is now empowered by Parliament to tax out the hideous advertisement hoardings which, as here, had begun to deface so many charming views and sites. All Mr. Lloyd George had this time last year for a similar proposal was "sympathy." French sympathy is practical and all embracing, and we urge the careful perusal of the many proofs thereof Mr. Dewhurst gives, which want of space prevents us from quoting. We can only sum up the abundant and truly refreshing fruits of the labours of the excellent French system we should do well to imitate.

General supervision and encouragement of everything concerning art and archæology throughout the country.
The teaching of art and crafts.
The Renaissance of Decorative Art in France.
Organisation or assistance of exhibitions of art.
Encouragement by liberal subscription of publications on art.
Purchase of works of art from living artists.
Pensions to widows and orphans.
Purchase of works of art of all kinds for the National Galleries and Museums.
Despatch of special missions to study matters of æsthetics abroad.
Organisation and decoration of national fêtes and State receptions.
Theatres, schools of music, concerts, etc.
Public works, State and civil buildings, guardianship of religious edifices, parks, and gardens.
Guardianship of the national palaces and historic monuments.
Maintenance of a corps of architects and inspectors of all kinds.
Town planning and beautification.
Protection of beauty spots and rights of way.
Matters of archæologic interest. Protection of Roman ruins and other antiquities.
Control of woods, forests, and waterways.
Control of abuses of advertising.
Direction of the national tapestry manufactories of the Gobelins and Beauvais, together with the porcelain factory of Sèvres.

Of course, as in France, the Under-Secretary of State for the Fine Arts must be a many sided man, and must couple imagination and love of art with energy and business aptitude. There, political expediency on the one hand, or mere academical erudition on the other, will not help us. Let us, however, try the system, and so begin to educate public opinion and public taste. Sooner or later we shall find that art pays, every way, and that health, content, and beauty are more precious national assets than the millions of the factory-owner wrung from the monotonous labour of men, women, and children, whose least insipid pleasures to-day are the Bank Holiday excursion, or the darkened cinema show.

R.I.B.A. EXAMINATIONS.

THE FINAL: ALTERNATIVE PROBLEMS IN DESIGN.

INSTRUCTIONS.

1. The drawings, which should be on uniform sheets of paper of not less than Imperial size, must be sent to the Secretary of the Board of Architectural Education, Royal Institute of British Architects, 9, Conduit-street, W., on or before the dates specified below.

2. Each set of drawings must be signed by the author, and his name and address, and the name of the school, if any, in which the drawings have been prepared, must be attached thereto.

3. All designs, whether done in a school or not, must be accompanied by a declaration from the student that the design is his own work, and that the drawings have been wholly executed by him. In the preparation of the design the student may profit by advice.

4. Drawings for subjects (a) are to have the shadows projected at an angle of 45deg., in line, monochrome, or colour. Drawings in subjects (b) are to be finished as working drawings. Lettering on all drawings must be in a clear, scholarly character.

SUBJECT X.

(a) A Classical Villa, situated in a wooded country, for a bachelor who has a small but valuable collection of antique sculpture; ⅛in. scale and ¼in. drawings, to show both the villa and the gardens. (b) A Pier at a First-class Watering-place. Drawings required: 1-16in. scale drawings of the general scheme, with a ½in. scale detail showing the construction of the pier and of any pavilion which may be on it.

SUBJECT XI.

(a) A Monumental Tower, with a large clock, to be built to commemorate the adoption of the meridian of Greenwich throughout the world. Scale of drawings to suit the size of the scheme, but to include one detail drawing. (b) A Country Club for 300 members, in a large provincial town, on a corner site 75ft. wide by 150ft. deep, bounded by two main roads. The building can only extend back half the depth of the site, the remainder of which is to be treated as a formal garden. Drawings required: ⅛in. scale and ½in.

SUBJECT XII.

(a) A Lighthouse on an isolated rock 100 yards from the entrance to a naval harbour. Scale of drawings to suit the size of the scheme, but to include one detail drawing. (b) A Golf Clubhouse, to contain: Entrance-hall, porter's box, and telephone; small room for secretary and committee meetings; club rooms; verandah or balcony, facing links; dressing-rooms to contain 350 lockers; lavatories, baths, shower-baths, w.c.'s, and urinals; dining-room and servery; kitchen, scullery, larders, pantry, stores, wine, beer, mineral waters, coals, knives, and boots; heating-chamber and drying-room; billiard-room (two tables) (card-room optional), bar; servants' hall; steward's quarters (sitting-room, two or three bedrooms, etc.); caddies' room, with caddie-master's room adjoining; w.c. and urinals, and workshops. Drawings required: Two plans, two sections, and three elevations to ⅛in. scale, also one ½in. detail.

DATES FOR SUBMISSION OF DESIGNS IN 1913-1914.

	Subject X.	Subject XI.	Subject XII
United Kingdom	Aug. 31	Oct. 31	Dec. 31
Johannesburg ...	Oct. 31	Dec. 31	Feb. 28
Melbourne	Nov. 30	Jan. 31	Mar. 31
Sydney.....	Nov. 30	Jan. 31	Mar. 31
Toronto	Sept. 30	Nov. 30	Jan. 31

THE BRISTOL SOCIETY OF ARCHITECTS' ANNUAL EXCURSION.

The Bristol Society of Architects had a most enjoyable annual excursion on the 17th ult. Among those present were Mr. G. H. Oatley, F.R.I.B.A. (president); Messrs. Mowbray A. Green, F.R.I.B.A.; J. Foster Wood, F.R.I.B.A.; C. C. Awdry, F.R.I.B.A.; G. C. Lawrence, A.R.I.B.A.; H. Brakspear, F.S.A., A.R.I.B.A.; B. Wakefield, Licentiate R.I.B.A.; A. B. Botterill, A.R.I.B.A.; E. G. Rodway, A.R.I.B.A.; F. Barclay, Lic.R.I.B.A.; C. H. White, A.R.I.B.A.; C. G. Skinner, T. A. Skinner, J. R. Edwards, R. E. Brinckman, W. L. Haile, Messrs. Audley Perkins and F. N. Cowling (guests), and Mr. C. F. W. Dening, Lic.R.I.B.A., hon. secretary.

The party left the city at 9.10 a.m., arriving at Norton St. Philip at 10.30 a.m., where they inspected the "George" Inn. At 10.45 a.m. they left for Bradford-on-Avon, where they arrived at 11.20 a.m., alighting at Barton Farm. Having seen the Great Barn (by the kind permission of Mr. and Mrs. Chard), and they walked over the 14th-century bridge to the Saxon chapel, and through the town to The Hall. Mr. Harold Brakspear met them and gave some notes on the Saxon church. By the courtesy of Mr. J. Moulton The Hall and grounds were inspected.

At 1 p.m. lunch was partaken of at the "Red Lion Hotel," Lacock. At 2 p.m. a visit to the Abbey followed (by kind permission of Mr. C. H. Talbot), under the guidance of Mr. Harold Brakspear, F.S.A., A.R.I.B.A., after which members saw the village and church, an hour being devoted to sketching. At 3.30 p.m. the party left for Castle Combe, arriving there at 5 p.m. After tea at Mrs. F. Smith's, The Archway, a visit was paid the church and grounds of the Manor House (the residence of Sir John Gorst). More sketching was done, and at 7 p.m. the return was made to Bristol.

NORTON ST. PHILIP: THE "GEORGE" INN.

Licensed as an ale-house in 1397, and being associated with Oliver Cromwell and the Duke of Monmouth, this wonderfully preserved hostelry greatly appeals to those who see it for the first time. After seeing the interior, go into the courtyard and note the turret stairs and stone-tiled roofs.

BRADFORD-ON-AVON.

The Great Barn at Barton Farm is of 14th-century work, and is well worth studying; the roof especially so. In close proximity to the parish church are many houses of much interest, especially those of the 18th century. The gate piers of the Abbey House—adjoining the churchyard—are fine examples of the period.

The Church of St. Lawrence (the Saxon chapel) was formerly used as a free school, but through the energy of the Rev. Canon Jones it was cleared of all encumbrances, and is now restored to its sacred purposes. Freeman considered it to be "probably the most ancient unaltered church in England, showing the singular analogy between the earlier and later imitations of Roman architecture." Mentioned by William of Malmesbury in the 12th century, there can be no

reasonable doubt that it is the actual church built by Ealdhelm at the beginning of the 8th century. For the width of the building the height is remarkable, and the arch between the nave and the chancel is extremely narrow. On either side of the west aspect of the chancel arch are two sculptured figures of angels, which are, perhaps, the earliest extant fragments of church carvings in England.

Upon the way through the town to the Hall is the second bridge spanning the Avon, on the central pier of the east side of which is the quaint little Mass house. It was for some time used as a lock-up house.

The Hall, formerly the Duke's or Kingston



EAST STREET, LACOCK, WILTS.

House) is now the property of Mr. J. Moulton, who gave a short history of the house. Built by one of the family of Hall—probably John Hall, a rich clothier—at the beginning of the 17th century, it is a magnificent example of the Jacobean style, with an excess of windows, arabesque parapets, and Classical details. It may possibly be the work of the author of Longleat, the character of which it partakes.

LACOCK ABBEY.

Lacock Abbey was founded for Augustinian canonesses, April 16, 1232, by Ela, Countess of Salisbury, daughter and heiress of William, Earl of Salisbury. She founded it in memory of her deceased husband, William Longespée, the natural son of Henry II., and in his wife's right Earl of Sarum. She took the habit of the Order here, December 25, 1238; was elected the first abbess, August 15, 1240, previous to which date the house appears to have been governed by the prioress; resigned her office, on account of age and infirmity, December 31, 1257, nominating Beatrice of Kent as her successor; and dying August 24, 1261, in the seventy-fourth year of her age, was buried in the choir of the abbey church.

From the foundation in 1232 until the foundress took the veil in 1238 gives the probable time that the principal buildings took to erect, and if not completed, were at least made habitable. The appointment of Alice Garinges as first canoness at the time of the foundation would imply that there were some inmates from the first, who would be housed in temporary buildings.

The church occupied the south side of the cloister. It was, unfortunately, one of those parts of the abbey deemed superfluous, and utterly destroyed by Sir William Sharrington, with the exception of the six westernmost bays of the north wall. These were retained to form the south wall of the new manor-house, and so have remained to the present, though much mutilated by modern insertions of about 1828.

The original church was an aisleless parallelogram, 143ft. long by 28ft. wide, divided into seven bays, without any structural division between the nave and choir. As the six remaining bays of the north wall exist to their full height, the original design of the side walls of the church is fortunately preserved. In each bay was a tall lancet window, except in the two covered by the eastern range.

The cloister court is about 80ft. square, and was surrounded by covered alleys about 10ft. wide, with wooden pentice roofs, supported next the court on continuous open arcades. These arcades were originally formed by twin columns with moulded caps and bases, all of Purbeck marble, carrying trefoiled-headed arches and standing on a dwarfed wall.*

The first alteration to the cloister was apparently made in the middle of the 14th century, when the west walk was rebuilt. It seems to have had a flat wooden roof divided into bays and resting against the main wall on stone corbels. One of these remains perfect in the north-west angle, and represents an angel playing on a fiddle. On the east side of the cloister, and adjoining the church, is an interesting apartment that has been for some time past designated "the sacristy." This was possibly the use of the western part, but the east end contained two chapels. It is vaulted into two aisles of three bays each, supported in the centre by one large and one small pier.

The chapter-house at Lacock is of nearly the same size as, and has centre columns arranged in a similar manner to, the sacristy. It is vaulted throughout with richly-moulded ribs, and the cross arches carrying the wall above are also moulded. The centre pier under these arches is formed of a cluster of eight half-round columns attached to a drum, and has moulded caps and bases. The latter are 4in. lower than the present floor, and show the original 13th-century level. On account of the eastern part of the chapter-house being divided into two aisles, and the

* There is such a remarkable similarity of detail in cloisters of both the twelfth and thirteenth centuries as to lead to the supposition that they emanated from some central place. They are nearly always constructed in Purbeck marble, and considering the large number of abbeys being built at that period, the demand at the quarries for this one sort of work must have been very great. To meet this demand it is almost certain the caps, bases, and columns were worked in large quantities and sent out in sets as the orders for the same were received. A parallel case is known to have existed in the fifteenth century with regard to alabaster images and carved panels. At first these were made at the quarries at Chellaston in Derbyshire, and later at Nottingham, by special "alablastermen," in great quantities and sent thence to all parts of the country and even abroad.—"Archæologia," lii. 679-680.

west end into [illegible] arches of entrance, an unusual treatment of vaulting was necessary. This is arranged by throwing a cross rib from the centre column to each [illegible] dividing the irregular areas thus formed by diagonal ribs meeting each other in the centre. Northward of the Infirmary passage was the warming or common house, where a fire was kept up all through the winter for the canonesses to warm [illegible]. This was not entered directly from the cloister, as was usually the case, but [illegible] under the east end of the passage [illegible] divided into two aisles of four bays each by three columns down the centre. The vaulting is of semi-octagonal ribs [illegible] been completed at the same time as the side walls, against which [illegible] moulded and carved corbels.

Occupying the whole of the upper floor of the eastern range, over the vestry, chapter-house, and warming-house, was the great "dormitorium," or dortor of the canonesses. It was approached by a flight of steps contained in the thickness of the west wall of the vestry, but the lower steps were destroyed and the upper part of the [illegible] solid after the suppression. The "refectorium," frater,* or dining-hall of the convent, occupies the whole of the north side of the cloister over a subvault. The basement is divided into two parts by a cross wall towards its eastern end. The eastern part forms a passage vaulted into two severies, with plain, semi-octagonal ribs resting on moulded corbels. Originally it was entered from the cloister by a wide-pointed segmental arched doorway of two chamfered orders with nook shafts in the jambs similar to the other doorways. At the west end of the frater, in continuation northward of the western range, was, and is still, the kitchen, an apartment that for over 600 years has been used for the same purpose. At present it is an oblong room open to the roof, 33ft. long by 21ft. wide; but originally the west wall was apparently in line with that of the western range.

CASTLE COMBE.

The church, dedicated to St. Andrew, founded in the 13th century, was, with the exception of the tower, rebuilt in 1851. This extensive renovation was due to the reprehensible practice (which seems to have been pursued from the earliest to the latest times) of digging graves both inside and outside the building, close to and below the level of the foundation walls. These, in some cases, had been battered to pieces to provide due width to the grave! The interior, with the chancel, nave, and aisles, is spacious, the 13th-century windows, consisting of four narrow lancet lights, in a deeply arched recess, in treatment is unique. Around the chancel arch are six figures of saints in canopied niches, and on the clustered pillars, which form three bays, separating the aisles from the nave.

The Market Cross is only a memorial now of the busy scene [illegible] clothiers, who dwelt in the valley, brought hither their goods for sale, as did the farmers the produce of their lands. If no longer useful, as the shuttles have all disappeared and bigger marts invite the agriculturist elsewhere, it is a picturesque feature, and worthy of careful preservation.

BUILDING NEWS BOATING CLUB.

A BOAT HOUSE AND GYMKHANA CLUB.

Though boating clubs of various sorts have long outgrown their novelty stage they may generally be described as relatively recent, in so far as specially erected buildings for this purpose are concerned. Boats, of course, were used by primeval man far back in the remote ages of the past, and canoes are associated with the cradle of civilisation. Any-

* The Old English word [illegible] dining-hall, is at least a century [illegible] brother [illegible] "frater," a shortened form [illegible] comes from the Middle [illegible] "A New English Dictionary." The modern word "refectory" used before the Suppression.

thing, however, approximating an old world fashion in design would at best merely rank as a piece of affectation, and could only be inappropriate to the needs of a modern boat club. The essentials and motive of an up-to-date contemporary building of this character are manifestly new, particularly when, as in this case, the boat house is to be combined with gymkhana development. Such a combination may not necessarily imply Bohemian conduct on the part of the members; but the notion certainly introduces the range of unconventional ideas and the intermingling of the sexes with a "hail-fellow-well-met" freedom of enjoyment unrestrained by Victorian decorum and manners now almost as forgotten as the chaperon. Anyway, the building in mind ought to plainly bespeak its purpose.

The facility with which such a design might be made to suggest cheap vulgarity is obvious enough and, therefore, we did our best in setting the subject to guard against this contingency. The proposals sent in at any rate respect appropriateness; consequently success has so far been attained, and quite properly no competitor has displayed much concern for archæological precedent on the one hand, or for outrageous extravagance of detail on the other. The designs are not by any means humdrum, notwithstanding, and they serve their purpose fairly well. The problem is a modern one, and, as needs must, it deserves to be handled in that spirit, while there is no reason why good taste should not prevail, or why the architectural treatment should not be distinguished by good proportion, reserve of inventiveness, and simplicity of intention, giving at the same time the idea of recreative facilities without formality and undue restraint.

The design submitted by "Cinq Villes," with all its shortcomings in parts of its plan, appears to have best hit off this notion, and on the whole, we think the author has justified his claim to the post of honour. The balance of the disposition of his building and the general hang of his scheme seem to warrant this choice for the priority. "Everest" we place second, and "Eclipse" third.

Apart from other considerations, we reckon that the best plan, in so far as the club or upper floor is concerned, is by "Eclipse," as we shall presently show; but the blockade formed by the double staircase in front of his boat-house leaves us no alternative in the face of "Cinq Villes's" all-round merits. "Everest," who comes betwixt and between, though commonplace enough and none too attractive, has advantages which we shall point out in support of the preference given him.

The plan sent in by "Cinq Villes" has no doubt a very bad fault, which in actual working would prove fatal to comfortable use, because even in the most easygoing of free-and-easy clubs manifestly every billiard-playing lady would presumably prefer that the ladies' lavatory might be approachable from a less conspicuous way than by direct access from where the play is actually going on. When men alone are using the table such an arrangement for the fair sex is obviously impossible. The exigencies of the plan herein have no doubt been sacrificed in this way to the author's aim after a pleasing symmetry in regard to the exterior elevations. A second awkward point to be noted is where the proximity of the main entrance doors impinges too much on that of the service or washing-up place, which in itself is too much in evidence. The passing and repassing of those engaged in waiting would be inconvenient, because right in the way of members going out or coming into the club-room. The kitchen fireplace is none too clear of the doorway hard by it, while the administration is too much cramped. The verandah is curtailed needlessly at one end by the staircase, which would have been better situate round on the flank, and there would be no objection, if balance seemed so very important, to provide a pair of stairways, one at either end. This would have insured the most of the balcony space being available, which is very important. We are not quite content with the dressing-room and bath for men being only getatable through the billiard-room. The lower ground floor is workable, though the store-room window, without any area, would be very inadequate, and the Boat-house might well have been lighter, with advantage. This could have been managed quite well had the arch now utilised for the stairway been used for a second doorway or even a window. The bull's eye openings could then have been easily omitted. The absence of the break under the balcony would have much improved the elevation towards the river. The lighting of the club and billiard-rooms is much better than in either of the other schemes, and the roofing is far preferable and also good-looking. The modishness of this design has possibly a self-conscious air about it; but the contrivance externally, in an unpretentious way, obtains uniformity and appropriateness, generally speaking, in scale with itself. The entrance to the club on the north side is none too evident, and the author has not seemingly quite realised the effect of an enclosed yard on the west interfering, as it must do, with the symmetrical lay-out for which he has sacrificed so much. The excellence of his drawings and arrangement of his sheet score considerably in his favour.

"Everest," as we before remarked, is scarcely attractive and somewhat commonplace. The balance shown in his inconsequential rear front elevation is misleading, because he omits the yard walling with the w.c. and coal-place therein enclosed. The ladies' lavatory is better placed than in the last-named, and the front verandah is unencumbered by a staircase, though the pent is less useful on account of its being bisected by the gable and tall window in the middle, just where a cover would be most valuable. This lean-to treatment of the verandah roof is by no means so pleasing as the hipped one in the previous design. The club-men have to go through the billiard-room to get at their bath and dressing-room, but they need not go right round the table, as required by "Cinq Villes." Had "Everest" transposed the arrangement of this detail of his building, the door to dressing-room might have been located nearer to the billiard-room entrance, and so have lessened the objection named. The scullery is not very well placed for a washing up, but the kitchen is more serviceable than the other one before criticised. The end elevation is mediocrity personified. The boat-house is commodious, and might have been made more so by building a wall in lieu of the posts, which would have been far better left out. The club entrance vestibule is too unimportant.

"Eclipse" mismanages his sheet of drawings badly, and fails to do himself full justice by his small-scale plans. There is ample room on the paper to have drawn it larger by leaving out the landing-stage and giving a key block-plan of that in lieu of the useless title-panel, which is only put in to fill up. The drawings are, therefore, rather microscopic, and the lines are so thin that the effect is impaired, and looks lacking in "go." To avoid too considerable a reduction of "Eclipse's" drawing we have rearranged its parts and omitted the section and side elevations, also curtailing the surroundings drawn on his main plan. We committed ourselves to the statement, in our opening remarks, as to this club floor plan being the best sent in. The rear elevation is also distinctly pretty, and facing north, it is rightly designed without needless windows. The faults of the plan are threefold, and they furnish the reason why, in conjunction with other matters coming into review, we had to place "Eclipse" in this position. First, the encumbrance of the big projecting staircase in front, blocking up the entrance to the boat-house behind so badly. Secondly, the awkward stairs in the service passage leading up to the kitchen, by the side of the fireplace; and, thirdly, the relative amount of building needed to accommodate the approaches and accessories, as compared with the area of the club-house proper. Coupled with this, the general effect of the arrangement in the contrivance of the plan seems, perhaps, a trifle too palatial in lay-out to be in harmony with such a free and easy river-side gymkhana. Moreover, the symmetrical lay-out, on which so much stress is made, in the north elevation, and which looks so attractive on paper, would probably not work out quite so satisfactorily; for instance, the kitchen, by being covered by a flat set below the back annexe roof-eaves, would only have very little head-room, and would be unbearably hot with the steps up to reach its raised level above the club-room floor. The yards do not balance one with the other; indeed, the larger yard looks as if it were only added to mask the use of the other one, which is too small. The lower ground plan we do not like. The manner in which the dressing-rooms are reached by way of two lobbies out of the entrance-hall is quite capital, and the extra door to the billiard-room is, no doubt, a gain. The pantry is rightly set as an appurtenance to the club-room. The section (which we are not able to give) displays the poverty of the author's conception of his internal treatment, and which we object to as being so far short of the possibilities of his very ingenious plan. The windows are much too low, and the ceiling is not lofty enough and very ugly; besides, no "fixings" are given by the roof for gymnastic appliances for physical exercises. The end elevations are at best indifferent, and the balcony outlook is impeded by the formidable double staircase. The river-front elevation is by no means bad-looking, though in the view perhaps it seems a trifle over-roofed.

"Revil," we regret to say, only scores fourth, and his failure to rank higher comes of two fatal objections. He runs a brick enclosed stairs straight up from the river's brink to the balcony; consequently, anyone on the landing-stage wanting to go up into the club must squeeze round in front of the walls, risking a fall in the water, or else climb over the walling. Ladies, presumably, must be precisely landed just in front of these steps, or otherwise they would have to go round the club-house to get indoors, climbing up the slope on their way thither. This staircase would obstruct the view of the stream very inconveniently, and seriously prevent the steward from seeing boats approaching. The lower ground floor is impeded, too, by this arrangement: otherwise the plan is not bad. The balconies are carried round without roofs at the ends of the club-house, and the billiard-room has good big windows looking east. The ladies' lavatory is too public, being situate just inside the front door, and it is also very small. The "servery" is not worth the name, besides being quite dark. The room thus occupied had better by far have been thrown into the pantry. The two northern transepts do not project equally; but this is got over by a secondary roof, which masks the want of balance. In the back elevations this symmetry is made too much of; but the central porch leaves no doubt as to the position of the club's entrance. The perspective gives the impression of the building having a shorn look. The western end, judging by the elevation, would appear to greater advantage, the adjacent kitchen wing adding to the length of roof lines. "Revil" would have done wisely to have had a different treatment towards the east, and perhaps a gable might "have done the trick."

"Tonnelier" clutters up his river front with too many features: three hips, two dormers, and a turret, while below, in the centre of his elevation, he glories in a double stairway carried over an arch, so big as to be out of all proportion as an adjunct to so unimportant a structure. Many a public building has a far less magnificent approach. The verandah is encumbered with posts, which badly interfere with its comfortable use, and the masonry piers below, in front of the boat-house, are likewise very much in the way. The plan of the lower ground stage is not good, though, on the other hand, the simplicity of the club-room's floor deserves considerable praise. The accommodation for the two sexes is separated and yet handy without being too much in the middle of things. A better elevation would have afforded "Tonnelier" a much greater chance of success. He gives a shower bath

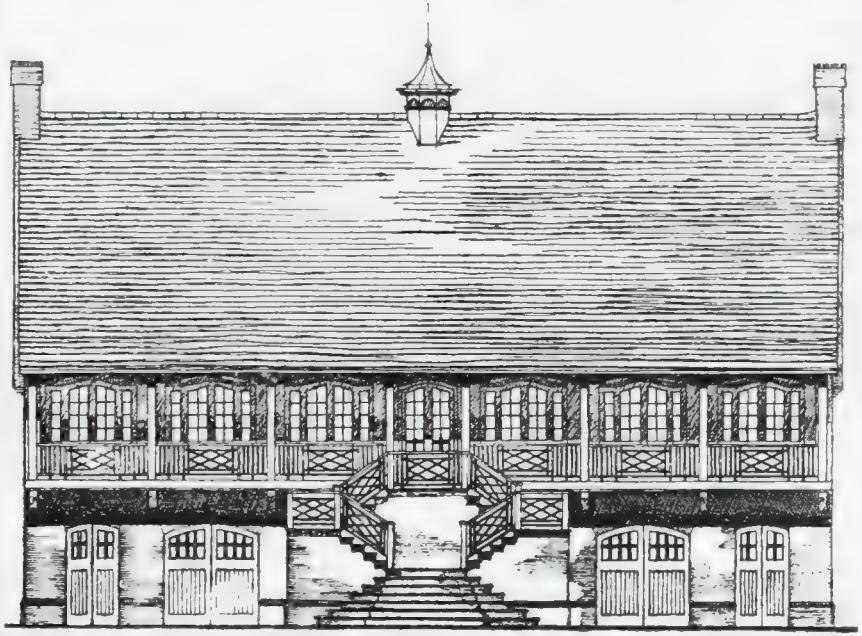


Scale of feet 1 0 2 0 3 0 4 0 5 0 6 0 7 0 8 0 9 0 10 0 for Plans

Scale of feet 1 0 5 10 20 30 40 for Elevations



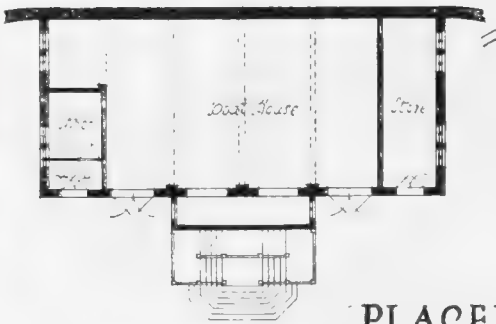
North Elevation



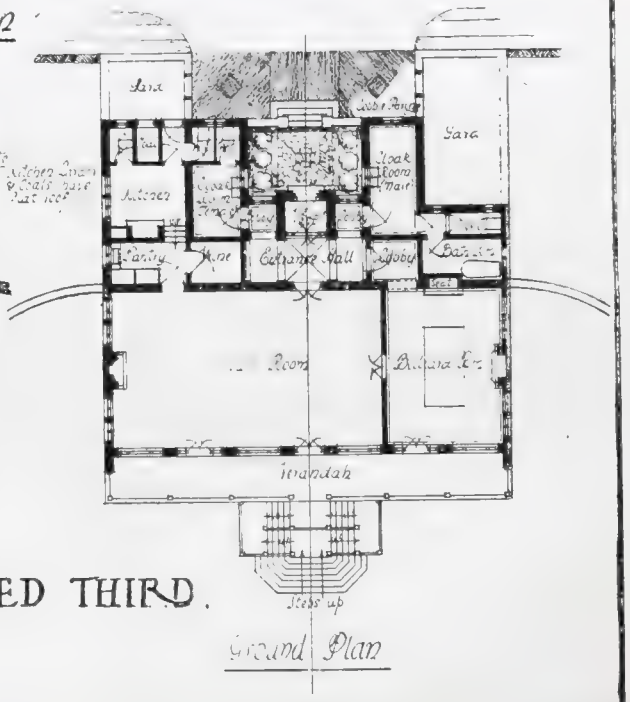
South Elevation

A BOAT HOUSE AND GYMKHANA CLUB

BY "ECLIPSE" MAY 1913.



New Ground Plan



Ground Plan

PLACED THIRD.

for the use of the men, and this is very ingeniously managed. The seat recess to the billiard-room is also a good feature. The kitchen part is rather well planned. His drawings are very fair, and the section of the club-room is lofty, though it is not clear how the extra width works in with the curved roof-principals. These might need a tie-rod to make quite sure against spreading, though possibly the set-off in the wall of the deviation shown is depended upon as a buttress. If so, we should only have one solitary arched timbering, which would appear odd. The whole device adopted is too broken up to look well either inside or out.

"Scot" makes his boat-house all doors, except in the centre, where an ungainly stair case juts forward very much like that in "Revil's" plan, only that "Scot" seems to carry solid stone steps on raking cast-iron girders, shaped to give a bearing half-way up. The design generally has a temporary look about it. The wash-up place can only be got at through the kitchen, and the servery has hatches which would be hampered by the folding-doors in between them. The men's conveniences are reached through the billiard-room; but the place for ladies is well isolated by a ventilated lobby, shut off from the entrance-hall. This lobby balances with the wine-place in the lay-out of the north elevation.

"Young Tom" comes in last, and arrives very late, with a crude plan, which, however, is economically contrived. The doors open directly into the club-room, and have no porch, so the north winds would make the club far from cosy. The service part is very good, but the elevations only rank as ordinary.

The following is a copy of the instructions to competitors: H. A. Boat-house and Gymkhana Club, hard by the upper reaches of the Thames, above the locks, where the stream may be reckoned ordinarily to have a normal water-line. The site is on private property. The building towards its back-water frontage is not to exceed 60ft. in length, and it will have a southern aspect, the frontage building line being set back 30ft. from the edge of the stream, from which point the shore rises gradually about 5ft. to the level on which the boat-house is to be started. This lower-ground story will be mainly devoted to the lock-up housing of river rowing-boats and small craft, with a little office for the steward, as well as a store for tackle at the east end. The staircase, external to the building proper from this lower level, is to form the river approach to the club by way of the verandah on the first floor, which is really the ground floor in regard to the land behind it, because the bank, right and left of the premises, rises rapidly about 8ft. from the southern building line. This bank is not to impinge on to the ends of the house, but to be upheld by retaining walls, with plain parapets, and to be planned by preference on the curve. The depth of the lower part of the structure is not to be more than 25ft., and its rear surface-drainage proof wall must serve as an abutment to the ground at back. There should be a sufficient number of steps from this higher ground level of the site, so as to make the club rooms insure a 10ft. head room to the boat-house below. The club recreation-room to be about 40ft. by 22ft. in the clear, with a balcony 6ft. wide, treated as a verandah, and by preference partly over-sailing, and extending along the entire length of the premises facing the water-way. This balcony to have an asphalted concrete floor, faced with wood-block paving, laid to a fall outwards. There are to be a billiard-room on the club-floor level for a full-size table, a bathroom and a w.c., with two lavatory basins, and a dressing-room attached about 10ft. square or 1 that area. Also a ladies' lavatory, with w.c., conveniently situate apart from the men's accommodation. No drinking-bar is required; but there is to be a small kitchen and servants' wash-up place or pantry, also a small larder, a back w.c., coal-place, and a little enclosed yard with servants' entrance. A cool place for ale and wine is required. The service is restricted to cold luncheon, and afternoon teas in the club room. No bowling alley is wanted. The building may project on the north front at the two ends, and be more or less varied, so as to provide the administrative parts required. Symmetrical treatment, however, would be preferred, though compactness of planning is an essential in any case. The land from east to west is level. There must be an entrance to the club from the higher ground; but as this is towards the north, care should be taken to screen the main door vestibule from the weather, though the club will be principally used in the summer season. Open fireplaces for airing and occasional warmth to be provided. Materials, brick and timber, with tiled roofing. The treatment architecturally to be simple and suitable, without affectation, and solid-looking rather than having a flimsy or fussy appearance, but cottage-like, avoiding elaboration of detail. A weathercock on the ridge of the main roof would be a useful feature. Scale, 8ft. to the inch. Three elevations and a section. The two plans may, if necessary, be drawn to a smaller scale. The landing-stage, if space is short on the sheet, might be shown by a key-block plan. A small view from the S.E. is required.

The Club will recommence in October, when the awards for the past session, 1912-13, will be announced and the prizes awarded.

INTERNATIONAL ROAD CONGRESS IN LONDON.

On Thursday in last week several leading engineers attending the International Road Congress drove over thirty miles of main roads and went to Reading. The worst road they had passed over, said Sir John Macdonald, belonged to the King, and ran through Windsor Park.

The final meeting of the congress was held on Friday afternoon at the Caxton Hall, Westminster. Sir George Gibb, the president, occupied the chair. A report of the work done by the various sections during the week was presented, and the resolutions passed by the sections were submitted for confirmation by the full congress. The resolutions were nearly all agreed to without further discussion.

METHODS OF LIGHTING.

On the question of methods of lighting, Mr. Scott Plummer, representing the County Councils Association of Scotland, moved the deletion of two resolutions passed by the section urging that every vehicle, whether standing or moving, should carry or show a light of sufficient power at night which could be seen from the rear as well as from the front, and, further, that regulations should be made to compel drivers of herds of cattle to make their presence known at night. He contended that the circumstances varied very greatly in different countries, and what might be an excellent rule in one might be ludicrous in another. Sir John Macdonald said that the amendment was fully discussed in the section, where it met with little sympathy. It was very desirable that all who used the roads should endeavour to promote one system of lighting throughout the whole country. In Scotland, within a radius of perhaps twenty or thirty miles, they would have seventeen or eighteen different rules with regard to the lighting of vehicles. That was not desirable, and they were now expressing to the different Governments of the world the great importance of having a uniform system. The amendment was rejected.

THE MAINTENANCE OF ROADS.

The section dealing with "Authorities in charge of the Construction and Maintenance of Roads" had adopted a series of resolutions, which urged that it was not desirable that the maintenance of the roads should be vested in a central authority, but should be decentralised as far as was consistent with good administration, and that assistance should be given by the State contingent on the roads being maintained up to a prescribed standard.

After some discussion, however, it was agreed to delete this resolution.

Sir George Gibb, in his closing address, said that they could look back upon the meetings as full of practical and useful results.

THE OPTIMISM OF EFFICIENT ROAD SURVEYORS.

The Right Hon. John Burns, M.P., President of the Local Government Board, presided at the final banquet of the congress, held at the Hotel Cecil on Saturday evening. In proposing the toast of "The International Road Congress," he said that the congress that taught them many useful lessons in road construction and administration, and he trusted that it would be the third milestone on the road of street improvement in every country in the world. Good roads, clean streets, healthy thoroughfares, pleasant and, if possible, beautiful highways, were realisable, and ought to be secured, and if the ratepayer and taxpayer provided the means it was the business of the engineer, the surveyor, the administrator, and the local authority to see that the public got what they demanded. There was a general demand for wider and better roads, and it was for scientific men to meet the demands of the new traction. They were frequently called to task for the slowness with which roads were made, but he was an invincible optimist. One had to be an invincible optimist to be a county surveyor, and one had to be a disciplined enthusiast to be a city engineer. The taxpayers were demanding roads like billiard-tables and thoroughfares as straight as an arrow. Roads could not be built hurriedly, and the construction of a road demanded the expenditure of a considerable sum of money and a great deal of time and skill. In road construction rare haste was half-sister to delay. Road formation and road maintenance had been improved, and the cost in the aggregate had gone up; but he believed that the public had secured full value for the money expended. There was, however, room for greater progress, and there was no reason why, in the course of the next ten or fifteen years, the speed at which roads were constructed should not be accelerated. The increase in road travel had thrown upon the authorities a tremendous strain that they were quite unable to bear. He asked them to remember that the taxpayer was only a multiple of the ratepayer, and local authorities must bear in mind that it was not their business or duty to call upon the taxpayer through the central authority to bear all the cost of their local roads. There was to be a wise, fair, and equitable division of the cost of road making, construction, and maintenance. The diminution of the infantile mortality rate could be directly traced to the reduction of dust due to the increased use of "tarmac." The disappearance of the horse, the coming of motor traction, the electric tram, and the motor-'bus all tended to better pavements, and this had a direct bearing on the health of the community. He believed that before long they would have to make supplementary roads for the conveyance of merchandise, because the public had a right to be protected. In the future, road making and town planning must go hand in hand, and it was essential that when a new road was being made across fields the distance between the hedges should not be less than 70ft. to 100ft.

Sir George Gibb responded.

MUNICIPAL ART GALLERY, DUBLIN.

By the courtesy of Sir Hugh Lane, the hon. Art Director of this institution, we are enabled to reproduce to-day three capital views delineated by Mr. W. Walcot, under the direction of the architect, Mr. E. L. Lutyens, A.R.A., illustrating the intended Art Gallery to be erected on the site of the old, ungainly Metal Bridge, and these drawings afford an excellent idea of the artistic character of this project, which would vastly increase the architectural interest of the city just where such an addition is highly desirable, and where every visitor could not fail to see the new buildings. Mr. Lutyens in his report explained that he had inspected the various bridge sites proposed, and that he had carefully studied the varying stretches of water extending between them. His examination of suggested sites included St. Stephen's Green, Phœnix Park, and Merrion-square as well as Grattan Bridge. Metal



THE MUNICIPAL ART GALLERY, DUBLIN: SIDE VIEW. Mr. E. L. Lutyens, A.R.A., F.R.I.B.A., Architect.

Bridge, O'Connell Bridge, and Batt Bridge. He observed that the Gallery, if erected across the Liffey, would present so admirable an idea, giving scope to the imagination and possibilities of conception, that it would seem almost impossible to resist it. The Richmond Bridge site is too remote from the middle of the town, and we gather that Lord Ardilaun has objected to such a building as the Art Gallery being put up in St. Stephen's Green or in Phœnix Park, or in the People's Gardens, for much the same reason, though otherwise all these positions supplied possible and really good sites. To connect the new building with Grattan Bridge would interfere with prospects highly valued, while to harmonise a stone building with an existing metal parapet at once presents insurmountable difficulties of an æsthetic kind, and could not certainly result in a happy marriage in any case. The Metal Bridge was only designed for foot traffic, and its position in the centre of the city presents, moreover, a very fine opportunity in an architectural sense, and from O'Connell Bridge hard by, and over which every visitor to Dublin generally passes, these new buildings would be seen to great advantage without loss of the famous vista up the river westward. Neither would Mr. Lutyens' Classical design interfere with the sunset effects; on the contrary, his colonnade would enhance their interest. Besides, it has been urged with good reason that such an addition to the buildings of Dublin erected in the heart of its activity would materially assist in bringing back a sense of former importance to the centre of the city, and by doing away with not only the ugly old Metal Bridge itself, but also removing the disfiguring advertisements prominently displayed there now, with their blatant vulgarity. The corporation of Dublin has long contemplated the rebuilding of a more suitable bridge adapted to its distinguished natural position, so that by the designs represented herewith this improvement now contemplated will be realised on a scale and in a manner not before thought of. The cost of the galleries and the bridge is approximately set down by Mr. Lutyens at £43,000. The lower view on our double-page plate gives suggestively, on free, sketchy lines, a good idea of the appearance of the new galleries, combined with the foot-bridge, viewed from the important position furnished by the O'Connell Bridge, as already mentioned. This united arrangement of the two individual projects, as here provided for, means a material saving to the rates as contrasted with the cost of a pair of independent erections, and the communication between the north and south quays will be equally well preserved. There are three entrances, as shown by the accompanying smaller sketch of the side. The middle opening, with the colonnade over it, forms the approach to the bridge, and the flanking doorways give public access to the Picture Galleries. An easy rise is furnished by steps in broad flights at either end of the footway. This through bridge-level is identical with that of the gallery-floor, which will extend the entire length of each of the twin buildings, one on either bank, projecting over smaller arches some distance into the river, the central segmental arch being of wide span, for barges and other craft. Smaller galleries will provide space for classified pictures; while below, large storing-space is furnished, together with a communicating passage uniting the two wings underneath the public foot bridge, and independent of it. All the lighting of the galleries will be managed from above, and, in lieu of windows, the walls will be furnished with a series of niches to relieve their mural monotony, which otherwise would be unavoidable. The parapets will hide the roof from below, and, being clear of all tall adjacent buildings, no dark shadows will impair the top-light. The collection now at Clonmell House will, therefore, be housed to greatly enhanced advantage. Two groups of statuary are seen surmounting the roofs of both galleries, and these, combined with the contour of the colonnade in the centre, will be mirrored in the water below, will vastly increase the architectural effect of the buildings. The arched construction, with free circulation of air over the water-line, will insure the premises from damp, and little real risk can reasonably be anticipated on that score.

LONDON COUNTY COUNCIL.

At Tuesday's meeting of the London County Council a report was adopted, by 59 votes to 12, in which the Stores Committee proposed, with regard to the Council's furniture workshop in Clerkenwell-close, to confine the work in future to repairs and small jobs. The Committee pointed out that the output essential to economical working could only be maintained by providing additional machinery and plant, and substantially increasing the manufacturing work. The workshop was originated by the School Board for London, for the repair of [illegible] furniture; but after the transfer to the Council, the manufacture of [illegible] also undertaken there. The committee reported that repairs had diminished, and the workshop could not be continued on the present basis.

The Local Government and Municipal Committee recommended [illegible] Mr. [illegible]

Hawkins, at present foreman at the Council's furniture workshops, be appointed curator at the Furniture Museum, Kingsland road, at a salary of £150 a year.

Sir Edward White, replying to Mr. J. D. Gilbert, said that no further conference had been arranged with the City Corporation on the subject of carrying tramways over the proposed St. Paul's Bridge. A conference would be held in due course; but the matter was not urgent, having regard to the possibility of the bridge not being built for some six or seven years.

The Improvements Committee recommended a contribution be made of £45,000, or half the estimated cost of the widening which the City Corporation purposes to carry out between Nos. 50 and 56A, Leadenhall-street. About a year ago the Council agreed to contribute one-half, or an amount not exceeding £126,400, of the net cost of widening this street at Nos. 57 to 59, but on the understanding that it should not thereby be committed to the cost of any further widening of this particular thoroughfare.

The Improvements Committee further recommended that the Council should take steps to obtain estimates for the widening of the bridge carrying Tredegar-road, Bow, over the North London Railway. The bridge consists of cast-iron girders with brick arches between, the total depth of the superstructure being only 2ft. 9in. The borough council has recently repaved Tredegar-road with asphalte, and as a result of the completion of these works, the traffic along the road and over the bridge will be considerably increased; the bridge now forms part of a route for motor omnibuses. Tredegar-road, which leads from Coborn-road to Old Ford road, is approximately parallel to, and about one-third of a mile to the north of, Bow-road; it has an average width of about 40ft. The estimated cost of the bridge reconstruction is £6,000. The Committee also recommended that a site between Kingsway and Kean-street, having an area of about 8,000 square feet, and frontages of 80ft. to either thoroughfare, be let on lease to King and Arnell, Ltd., for ninety-nine years, at a rent of £2,000 a year.

A Special Committee recommended that portions of the Bromley-road, Catford, be widened to 70ft., and that a widening of Southend lane at and near its junction with Bromley-road, be undertaken, at a total cost of £22,500.

THE FOUNDATIONS OF ST. PAUL'S CATHEDRAL.

Sir Thomas G. Jackson, R.A., who recently, with other well-known architects, visited St. Paul's Cathedral for the purpose of examining the signs of settlement and the work now being done on the fabric, reports as follows on his inspection in a letter to Sir Francis Fox:

Eagle House, Wimbledon,
June 19, 1913.

Dear Sir Francis Fox, I send you my impressions from what you showed me yesterday at St. Paul's.

I gathered that Sir Christopher Wren laid his foundations on a bed of firm clay some 6ft or 7ft thick, below which is a bed of good gravel of about the same thickness. Below that is a layer of sand charged with water.

On such a foundation, undisturbed, I think one might safely put almost any building. Wet sand is remarkably firm so long as it is confined.

In this case, however, deep sewers have been made close to the building much deeper than Wren's foundations, which are only 4ft 6in below the Crypt floor, and one warehouse, at all events, has a basement also well below the foundations. Probably most, if not all, the buildings round the Churchyard are similarly provided with deep basements, though I am not aware of the fact.

These sewers and basements were formed in the sand stratum, and from reports made during the formation of the sewer it appears that it was constructed with great difficulty, as the wet sand flowed in and had to be pumped out. This operation lasted six months before the alarm was given which prevented the formation of an additional sewer.

This draught of water and running sand from the subsoil has no doubt been the cause of the settlement of the eight piers of the Dome on which the heaviest weight rests.

Although the proposed tramway near the east end has fortunately been abandoned, I think it probable that a drainage is still going on below the foundations. It is recorded that the sewer was formed with great difficulty, the bricks disappearing in the great rush of water and sand into the excavation. I do not know what condition the sewer is in now, but even if it is still water-tight there would naturally be a draught round it which would do mischief by drawing sand from below the foundations of the Cathedral.

Whether anything can be done to avert the progress of this loosening of the subsoil, I cannot from what I know form any opinion. To underpin the piers of the Dome is, of course, impracticable, for one would only get into the same bed of running sand. I do not know whether it would be possible to inject cement into the soil round about the deep sewer, to which I conceive the mischief is due.

The fissures you showed me in the piers in the Crypt, the nave, and the radiating buttresses at the springing of the Dome drum are alarming. A mere cursory inspection should be enough to convince anyone that the matter can no longer be neglected.

What is now being done by you and Mr. Macartney is to consolidate the piers by injecting cement grout into all the cracks with the Greathead machine. I was surprised to see the very inferior character of the core of the piers in the Crypt, which consists of loose rubble of small stones laid in a very inferior mortar quite soft and unfit to carry weight. To consolidate this by grouting as you are doing is obviously the first thing to be done, and to judge from what I saw when a stone had been removed from a part of the wall which had been grouted, the desired result seems to have been attained. The grout seems to have travelled into every fissure, and to have set like a rock.

Underpinning being out of the question, my opinion is that the only hope is to bind the construction so firmly together as to make it a homogeneous fabric which, if it settles further, may go down without rupture.

This, of course, involves considerations of the unequal load on the central part of the building and the ends of the arms of the Cross, which no doubt creates a difficulty, but I trust not an insuperable one.

The capital work you are now doing meets the first obvious necessity, but I wish something could be done to avert further movement in the subsoil if on examination it should be found still active.

Yours very truly,
Thomas G. Jackson.

P.S.—The vibration from the street traffic is felt very sensibly in the library. I cannot feel certain as to the possibility of its affecting the stability of the building, but if it has any effect at all on the mortar joints, that effect must be for the worse. T. G. J.

Mr. Somers Clarke, F.S.A., writes to the *Times*:—

Since I resigned the position of architect to the Dean and Chapter in 1907, I have from time to time visited St. Paul's, and more especially in June of this year. I am convinced that there have been movements in the walls of the structure since I had it in charge. The condition of the southern end of the south transept when I took charge was very alarming. It was just at the foot of this immense and heavy wall that the sewer was made many years ago from which volumes of sand and water were pumped. I fear that unless all along the south side some means be found to carry the footings right down to the London clay, the Cathedral will always stand in the greatest jeopardy.

Sir T. G. Jackson calls attention to the dangers that lurk in the future. By the kind permission of Sir Francis Cook I have examined the basement of his large warehouse, which lies immediately south of the south transept. Fortunately, his premises, entirely rebuilt not very many years since, do not go down as low as the footings of the Cathedral, but immediately to the west lies a row of smaller buildings which might at any time be reconstructed. Space is so valuable at this point that the owners would find themselves benefited in all respects by carrying down the foundations of the new premises to the London clay. This would be far below the present footings. All lateral support would be lost.

The south-west tower shows active signs of movement. Close to this part of the Cathedral deep foundations for adjacent warehouses have been made. I have seen some of them myself, the water moving through the gravel which overlies the London clay.

Sir T. G. Jackson refers to vibration felt in the library. This apartment lies immediately behind the south-west tower, and is, consequently, near the place where the deep foundations before referred to were excavated. Certain openings visible in the vaulted ceiling of this room are bigger than they were a few years since. I cannot remember of old to have felt the floor of this room in vibration, although I have spent many hours in the library. Now it vibrates considerably and constantly with the weight of passing vehicles..

The Dean and Chapter of St. Paul's have decided, in view of the difficult problem of dealing with the Cathedral foundations, to have some experiments made in the process of underground cementing, recommended by Sir Francis Fox. A suggestion of Canon Alexander, that the site of the old General Post Office, where the conditions (including the existence of a heavy building) are very similar to those in St. Paul's Churchyard, shall be utilised for this purpose, has been adopted, and the necessary permission obtained through Sir Henry Tanner, architect to H.M. Office of Works. The experiments will begin immediately, and on their completion, a few weeks hence, the results will be examined by a committee of architects and engineers.

THE PLANNING OF HOSPITALS.

At the concluding meeting on Friday at Oxford of the annual conference of the British Hospitals Association, a long discussion took place on the upkeep of hospitals.

The discussion on this subject was initiated by Mr. Keith D. Young, F.R.I.B.A. In a paper, Mr. Young emphasised the point that the annual cost of maintenance of a hospital was seriously affected by mistakes in planning, by errors of construction, and the use of inappropriate material. Excessive length of corridors, for instance, affected the cost of upkeep by increasing the cost of cleaning and whitewashing.

Mr. Conrad Thies spoke of the importance of taking the best engineering, electrical, and building expert advice, in addition to that of the architect. He visited recently one of the latest and largest of the London hospitals in course of erection. He was astonished to find in a building hardly completed a number of undesirable points which were likely in a few years to give trouble. Another instance of the careful consideration that ought to be expended on the most minute details was borne in upon him during a visit to St. Bartholomew's Hospital. There he found a magnificent casualty receiving-room, almost perfectly equipped, without any provision whatever for wheeling patients directly into the casualty room without carrying them up steps. It seemed incredible that in a large institution the idea had not occurred to anyone that when the ambulances were wheeled into the hospital they should be able to go up slopes, without movement or jerk to the patient, direct into the room where the patient received treatment.

Sir Henry Burdett alluded to the same defect, and said that in his judgment the plan on which the building at "Barts" was built was wrong. They could not find an architect to carry out in detail a modern hospital without getting such mistakes, and it pointed to the need for the association with the architect of an expert hospital administrator. He deprecated interference with the building plans after they had been accepted, and said it was lamentable that medical men did not realise the waste of public money that ensued upon their failure to think out their requirements before the plans were made.

Sir William Osler, who occupied the chair, was re-elected president of the association. In the course of a response, Sir William remarked that the Peter Brigham Hospital at Boston was a realisation of a new ideal in hospitals in English-speaking countries. There they had built only two units—the medical unit and the surgical unit; and what impressed one was the simplicity with which the hospital was built and managed. The profession would in future ask the managements to build hospitals for university purposes on lines that had not yet been realised. They would have to build hospitals on the lines of individual units, each one of which

would be in charge of a single individual with graded groups of assistants, and with laboratories and equipment ready to hand. This generation of hospital managements would probably not be asked to carry out this scheme, but there was no doubt that that was the plan on which doctors and workers would in future demand that hospitals should be constructed.

TAXATION OF SITE VALUES.

A Special Committee of the City Corporation has been studying the question of the rating of site values. The chairman, Sir Vezey Strong, reports that to ascertain the intentions of the Government the evidence and memoranda submitted to the Departmental Committee appointed by the Chancellor of the Exchequer on behalf of a powerful body of members of the House of Commons, known as the Land Values group, must be studied. Sir Vezey points to the fact that the capital value of sites is being ascertained; to the promise of Mr. Lloyd George that "this valuation will be quickly completed and made ready to form the basis of any new rating law"; and to certain statements of Mr. Lloyd George in the House of Commons. From the facts he sets out Sir Vezey Strong thinks it obvious that the alterations "are intended to be used for something much more important and serious than merely to form the basis for the collection of the Land Values Duties imposed by the Finance Act."

"The proceedings of the Departmental Committee on Local Taxation show," he says, "that the first point insisted upon is that an entirely new Government tax on site values is to be the first step. The amount in the £ of this new suggested Imperial tax is variously estimated by various witnesses, but the general conclusion is that 3d. would be the sum required." It is to go to form a National Fund, out of which various things are to be paid, but mainly it will be returned to the local authorities in place of the present Exchequer contributions, which are to cease. As to the amount which would be returned to the City, in the form of Exchequer contributions, I can only judge by the past. The proposed 3d. in the pound on the capital site value of the City of London would probably produce about £1,250,000 per annum. How much of this would be returned to the City as a relief to rates in the form of Government contributions on the basis, say, of night population, one may judge by the experience already had of the working of the Equalisation of Rates Act, 1894, which is distributed on this basis. In my humble judgment, it would be very little.

"The second proposal is that local authorities should be given the option of transferring certain classes of expenditure, like poor rate and education, from annual values to site values, which are to be stated in a new column in the valuation list. This, it may be argued, is merely substituting one basis for another, without any increase in the total burden. It may be so, but I have grave doubts whether it would be found in practice to work out in this manner or to be entirely in substitution."

SCOTTISH SANITARY INSPECTORS.

The annual congress of the Sanitary Inspectors' Association of Scotland was held on Friday, in the Municipal Buildings, Greenock, under the presidency of Mr. Robert Adam, chief sanitary inspector, Ayr.

The president took as his subject "Sanitary Law and Practice in Relation to Insanitary Houses." Reviewing the working of the Public Health Act, he said it was to the credit of landlords of an enlightened type that the vigorous policy that had been pursued for years under the Act had resulted in the improvement of housing everywhere, either by the renovation or modernising of old houses or the closing of slum property, making way for houses of modern construction. If all landlords were of this type, sanitary inspection would be confined to trivial matters affecting the structure of houses; but, unfortunately, such landlords were the fewest in number. If landlords and factors could not, or would not, bring their property into line with modern requirements, then they must be dealt with by closing orders. The decreasing number of low-rented houses through the operation of the Housing Acts and the higher-priced accommodation required was forcing people into unsuitable houses. To anyone practised in reading the signs of the times, it was obvious that a continuance of these conditions must sooner or later result in overcrowding getting beyond official control.

DESTRUCTIVE TENANTS.

Mr. John Frew, Linlithgowshire, contributed a paper on "The Housing Problem." In trying to deal with this question, he said he would endeavour to show that the rack-renter and slum proprietor was not so bad as he was painted, and that the slum-dweller and rack-rented had also his share in this great question. The human element said: "Suppose you build me an up-to-date house, I reserve to myself the right to use it as I think fit. I am paying the rent, and I will use the bath as a coal-cellar, or the water-closet as a coup for all household rubbish. I will drive large nails into the walls, and smash up shelves and cellar doors for firewood when I need to do so." The fallacy of having a uniform class of house for everyone was utterly exploded when one considered that no two people were alike in their habits. The educating of the people up to a proper appreciation of their improved conditions must keep pace with the improved conditions themselves.

THE NEW DELHI

Indian Engineering states that the complete project estimates for the new Delhi will reach the Government of India by October. This will enable the engineering establishment to begin building operations towards the end of the autumn. The most important works to be taken in hand at present are the lay-out and road-makings, which will be undertaken without delay.

The following appointments have been made in the engineering establishment of the permanent works at Delhi in connection with the building of the new capital:—Mr. A. M. Rouse, executive engineer, appointed superintendent of works, 1st circle. Mr. J. O. Rennie, assistant engineer, officiates as executive engineer, Provincial Division. Captain W. H. Roberts, executive engineer, appointed personal assistant to the chief engineer, Delhi Province. Captain G. E. Sopwith, R.E., executive engineer, appointed executive engineer, Projects Division No. 4. Mr. J. L. Sale, assistant engineer, is posted to No. 4 Project Division, and took over executive charge of the division from Captain G. E. Sopwith when the latter proceeded on leave, and will continue to officiate as executive engineer. Mr. H. E. Parker, assistant sanitary engineer, United Provinces, is appointed sanitary engineer. Mr. H. E. Parker, sanitary engineer, Delhi, is appointed to hold charge of Project Divisions Nos. 1 and 2 in addition to his own duties. Messrs. Glenn, Tej Singh, Malik, and Haney, assistant engineers, are posted to the offices of superintendent of works, 1st circle, Provincial Division, 1st circle, and chief engineer respectively. Lieutenant R. G. G. Robson, R.E., assistant engineer, is posted to No. 4 Project Division; Mr. R. Croad, assistant engineer, is posted as second personal assistant to the chief engineer, Delhi Province.

THE PROGRESS OF LIVERPOOL CATHEDRAL.

At the annual meeting of the Cathedral General Committee, held at the Church House, Liverpool, on Monday, Dr. Chavasse, the Bishop, presiding, the executive committee reported that the work of erecting the first portion of the cathedral continues to make good progress, the south wall of the choir having now reached a height of 130ft. 6in., the west choir aisle 126ft., the east choir aisle 123ft., and the lantern piers each 104ft. 6in. The chancel is now being roofed, and the Chapter-house has been roofed in. It is now possible to appreciate [illegible] dimensions of the building; the view which is gained, from Upper Parliament-street and Hope-street across St. James' Cemetery, of the east end of the cathedral, in conjunction with the Lady-chapel and Chapter-house, being especially impressive. The first transept adjoining the chancel is now about to be commenced, and this, with the chancel, will afford room for 2,419 seats in addition to the choir-stalls, and to the provision of space for the suitable conduct of public worship by the erection of the transept, notwithstanding that the full amount of money required to provide it has not yet been promised.

The donations received by the [illegible] treasurer within the last few days have completed the £50,000, on the raising of which within two years Mr. Arthur Earle generously promised a further £10,000. The amount of money now received and promised (including Mr. Earle's promise) thus leaves only £41,549 to be raised to meet Mr. Scott's estimate of the cost of finishing the choir and first transept of the cathedral.

With regard to the fittings and accessories of the building, the four principal windows of the choir aisle have been designed and partly executed, the carving of the choir-stalls and the carving and erection of the reredos is steadily proceeding, and the bishop's throne has been promised by an anonymous donor. Mrs. James Barrow has expressed the desire to supplement with a further £2,000 her large donations for the building of the great organ.

The salary of Mr. J. R. Lupton, [illegible] inspector and surveyor to the Lochcarron Rural District Council has been increased to £250 per annum.

Mr. Robert Grant of Cloiteow, road surveyor of the western district of Kirkcudbright, has been appointed country road surveyor of Sutherland.

Mr. T. L. Oliver of Glasgow has been appointed engineer and surveyor to the Conway and Glan Conway Rural District Councils at a salary of £110, rising to £150 per annum.

Mr. J. Daigleish Easton, at present engaged in engineering work for Messrs. P. W. and C. S. Meik, consulting engineers, London, has been appointed assistant engineer [illegible] Leeds.

The new Northern Bank building in Castle-ward is opened for business. The contract was carried out by Mr. John Graham, Dromore. The architects were Messrs. Hobart and Heron, Belfast.

The Radstock Urban District Council recently resolved not to allow their surveyor, Mr. G. H. Gibson, to continue private practice, and has now decided to increase his salary from £250 to £265 per annum. In addition he is to receive 3½ per cent. on the collection of the rents of the council's cottages, the commission being estimated to produce £20 per annum.

A parish hall, newly built in connection with the Church of Holy Trinity, Colchester, was opened on Monday week by the Bishop of Colchester (the Right Rev. Dr. Whitcombe). The new hall is 45ft. long by 22ft. wide and is 15ft. average height. The frame is of stud-work, lath-and-plastered inside, and the exterior is of corrugated iron. It is fitted with match-boarded dado, and has a silent floor laid on concrete. The building will seat 200 persons. It is built from designs by Mr. G. H. Page, as hon. architect, the contractor being Mr. Beaumont, of Lexden. The electric fittings are by Mr. Peacock.

Dean Carter, the rector of Hadleigh (Suffolk), and Dean of Bocking, is endeavouring to raise a memorial in his native town to John Overall, the distinguished scholar and divine, who was born at Hadleigh in 1589. John Overall was one of the leading translators of the authorised version of the Bible, the composer of the latter part of the Church Catechism, Dean of St. Paul's, and successively Bishop of Lichfield and Norwich. It is proposed to place a stained glass window and a tablet in the nave of the magnificent 15th-century parish church of Hadleigh, in which John Overall was baptised and in which he worshipped as a boy when a scholar of the Hadleigh Grammar School. Should the funds allow it is also proposed to place the [illegible] as a recognition of his teaching on the Sacraments.

TOWN PLANNING OF GREATER LONDON.

DEPUTATION TO THE PREMIER

On July 12, last year, as a result of a conference convened by the Royal Institute of British Architects, and representative of that body, the Royal Academy, the Institution of Civil Engineers, the Surveyors' Institution, and the Institution of Municipal and County Engineers, a letter was sent to the Prime Minister, pointing out the serious position which is likely to arise in the preparation of town-planning schemes for the districts surrounding the County of London, owing to the absence of any power for co-ordinating proposals relating to adjoining districts, or for insuring concerted action or an equitable apportionment of cost as to main roads. Mr. Asquith promised to give consideration to this letter, which was signed by the presidents of the five bodies concerned.

A second memorial was forwarded to the Premier on May 24 last, signed by the presidents of four of these five professional institutions, the place of the President of the Royal Academy being now taken by the President of the London Society. In this second letter Mr. Asquith was asked to receive a deputation and to hear its views as to the necessity of either appointing some central authority, or conferring the necessary authority on some existing body, to control the development of a system of main roads for Greater London.

The signatories pointed out that the action which it is urgent should be taken at once to secure the routes of these main roads need not entail a large present outlay, but would have the effect of avoiding a very heavy expenditure when, at some future date, the carrying out of the scheme of roads has to be taken in hand. They emphasised the extreme urgency of this matter, it being shown that a very large number of town-planning schemes for Greater London are now maturing, which include areas traversed by some forty out of 120 miles of new main roads recommended by the Traffic Department of the Board of Trade.

The Prime Minister replied, signifying his willingness to receive a deputation representing the societies interested, and the interview took place in Committee Room No. 10 at the House of Commons yesterday (Thursday) afternoon. The various bodies interested were represented by the following gentlemen. For the Royal Institute of British Architects: Mr. Reginald Blomfield, A.R.A. (President), Sir Aston Webb, C.B., C.V.O., R.A., Mr. H. V. Lanchester, Professor A. Beresford Pite, Professor S. D. Adshead, Mr. W. Howard Seth-Smith, and Mr. Ian MacAlister (secretary). For the Surveyors' Institution: Mr. Leslie Vigers and Mr. H. Chatfeild Clarke. For the Institution of Municipal and County Engineers: Mr. H. E. Stilgoe, Mr. J. W. Cockrill, and Mr. R. J. Thomas. For the London Society: Mr. Raymond Unwin, F.R.I.B.A., Mr. Carmichael Thomas, and Colonel Yate, M.P.

The members of the deputation met at the Surveyors' Institution, 12, Great George-street, Westminster, and, after a short preliminary discussion, went over to the House of Commons together. The Premier was accompanied by the Right Hon. John Burns, M.P., President of the Local Government Board; the Right Hon. Herbert Lewis, M.P., Parliamentary Secretary to the Local Government Board; Sir George Gibb, Chairman of the Roads Board; and Sir W. C. Mount. The deputation was introduced to Mr. Asquith by Mr. Reginald Blomfield, and the objects of the deputation were then stated briefly by Sir Aston Webb, R.A., on behalf of the Royal Institute, by Mr. Leslie Vigers on behalf of the Surveyors' Institution, by Mr. Raymond Unwin on behalf of the London Society, and by Mr. R. J. Thomas on behalf of the Institution of Municipal and County Engineers.

The members of the deputation reminded the Premier that the question of main arterial roads is one the urgency of which is daily becoming greater, owing to the altered conditions of traffic due to mechanical propulsion. Local authorities have power to make roads, but the difficulty with which they are confronted is that there is no co-ordination to insure uniformity. The matter is one calling for very careful handling, and involving serious financial problems. Mr. Burns's Housing and Town-Planning Act of 1909 gives power to local authorities throughout the kingdom to prepare town-planning schemes governing the future development of their areas, and, among other things, power to define the line of all new roads to be constructed within their areas, to limit the number of houses to the acre, and to preserve places of natural beauty. Within a radius of fifteen miles from Charing Cross, in what may be termed Greater London, there are upwards of eighty local authorities possessing these powers, and already the greater number of these authorities are embarking on the preparation of schemes. As London is the centre of a great road system, increasingly used for national rather than for local traffic, the need for some guiding and co-ordinating help from the centre becomes more urgent.

A second deputation, representing the National Housing and Town-Planning Council, and the majority of the local authorities in the area of Greater London, was also received separately by Mr. Asquith. The deputation was introduced by Alderman W. Thompson, of Richmond, Surrey, chairman of the Advisory Committee for Greater London, who urged the necessity for laying down in advance arterial main roads. He observed that London was the only great city in the world in which there was no central authority which could deal with questions affecting the central city, the inner ring of suburbs, and the outer districts that were rapidly filling up on every side. He quoted a resolution passed by the conference held at Westminster Palace Hotel on May 27 and 28, and representing the majority of the local authorities in Greater London—an area with a population of seven and a quarter millions. This resolution proposed that the public departments which can co-operate in the provision of arterial roads should be asked to confer with the local authorities in Greater London collectively, and give their assistance in preparing town-planning schemes for that area. To these local authorities the problem was, he said, of immediate importance, for it was probable that within the next five years the whole of the belt of unbuilt-on land comprised in the area represented would come within the purview of town-planning schemes. Mr. F. N. Elgood, of Northwood; Mr. C. P. Lovelock, of Carshalton; Mr. J. Lyne, of Walthamstow; and Mr. H. R. Aldridge, secretary to the Greater London Advisory Committee, also spoke.

In replying to both deputations, the Prime Minister said he had been glad to have the opportunity of hearing the weighty addresses delivered on a serious and perfectly unique problem, one of ever-increasing importance and difficulty. There were two, if not three, aspects of the question of providing main arterial roads that needed to be borne in mind. The first was that under the great scheme of town planning which had been promulgated by Mr. Burns, there was an urgent, and, indeed, growing necessity for the provision over the entire area of extra-Metropolitan London of what he might venture to term imperial thoroughfares for the fast-augmenting stream of general traffic. Then there were æsthetic considerations, which had been so ably set forth by members of the first deputation, who naturally viewed the matter from a wide public standpoint. Lastly, it was important that this great work of town planning and development should not be arrested, or, what would be even worse, that the money expended on costly enterprises should not be more or less wasted because of the narrow outlook of adjoining local authorities, who feared the expense that would fall upon the ratepayers whom they represented. It was necessary, if town planning was to be a success, that it should be undertaken with a wide foresight as to the ultimate issue. Local authorities could hardly be expected to look at a road scheme with a disinterested regard for the interests of the community and to ignore the outlay with which their own ratepayers might be saddled without direct benefit to their district. He was anxious to offer any practical help out of the difficulties which so obviously beset the question; he had revolved the problems in his own mind, and had consulted his friends Mr. Burns and Sir George Gibb, and had listened attentively to the suggestions thrown out by the various speakers that afternoon. He thought that the best and most practicable thing that could be done was that the various local authorities should arrange to come into conference under the chairmanship, say, of his friend the President of the Local Government Board. Mr. Burns had had great experience and possessed wide knowledge on this subject, and, if desired, would be willing to preside over such a gathering, at which the various conflicting interests involved in arterial road-making in the areas surrounding London could be talked over and thrashed out. This might meet the immediate and pressing necessity of the case. As for the larger question—whether there should, or should not, be some general supervising authority, with powers to reconcile the many interests involved, that must be reserved for further consideration.

Mr. Blomfield, in thanking Mr. Asquith for his attendance and reply, expressed the hope that the societies he had had the honour to introduce would be represented at the suggested conference of local authorities.

OBITUARY.

We regret to announce that Sir Alexander R. Stenning, J.P., F.R.I.B.A., past-President of the Surveyors' Institution, has sustained a severe bereavement in the death of his wife, after forty-four years' married life. Lady (Theresa Maricia) Stenning (a daughter of the Rev. C. Maberley, vicar of Owlesbury, Hants) died on Tuesday at the Westminster Palace Hotel, Victoria-street, S.W. The funeral will take place to-morrow (Saturday) at West Hoathly, at 12.45. A convenient train leaves Victoria at 10.40 a.m.

It is with regret that we announce the death, in his eighty-first year, of Mr. Allen Ransome, for many years chairman of the well-known firm of A. Ransome and Co., Ltd., of London and Newark-on-Trent. Mr. Ransome was attending a board meeting of this company as recently as three weeks ago, when he was attacked by influenza, to which he ultimately succumbed. He was one of the pioneers of woodworking machinery in this country, and many of the improvements in this branch of engineering which have been adopted during the last fifty years are due to his practical experience and inventive genius. His services in this respect were recognised by the late Emperor of Austria, who, on the occasion of the Vienna Exhibition in 1873, decorated him with the first class Order of Franz Josef. Mr. Ransome was a member of the Institution of Civil Engineers, the Institution of Mechanical Engineers, and the Iron and Steel Institute, and there are few people in the engineering world who are better known or more highly esteemed. He was a keen sportsman and an enthusiastic Volunteer, having command of the 1st Middlesex Engineers for nine years, and enjoyed the distinction of being the oldest Volunteer of any rank in the United Kingdom.

An important scheme for the enlargement of the municipal technical school in Suffolk-street, Birmingham, has been submitted to the corporation of that city by the education committee. The work is estimated to cost about £105,000, and will take three years to complete.

At the town-hall, Dudley, last week, Mr. Edgar Dudley, on behalf of the Local Government Board, held an inquiry relative to the application of the town council for sanction to borrow £1,100 for the purchase of property in King-street and Hall-street for purposes of street improvement. The site consists of 660sq yd., on which stood buildings. It is proposed to demolish and round off the corner of Hall-street and King-street. This will require the utilisation of 113sq yd., and the remainder of the area will be offered for sale.

Currente Calamo.

With the first number of Volume CV. it is pleasant to congratulate all on the continuously visible, if slow, betterment of our great group of industries. General work is broadening, and in many places evidence is plain that the demand for houses is increasing. Moreover, buildings of the first class, actually in course of erection, or about to be commenced, are more numerous than for years past. Our present number is rich in illustrations of that kind, as, indeed, has the volume just ended been. To the eminent architects concerned, to whose kindly recognition we are, and have been, indebted for the earliest possible illustration or announcement of these great schemes, our readers and ourselves are gratefully indebted. To all alike—to those who so effectively and liberally help us to maintain the position of the BUILDING NEWS as the leading representative of our great art, and to the ever-increasing general body of readers who are accustomed to expect in its pages the promptest news and earliest and best illustrations, our best thanks are rendered. And if our gratitude is the proverbial expectation of more such favours to come, perhaps that may be considerately accepted as our best pledge of our determination to continue to deserve them.

The London County Council has, we think, wisely refused to sink the identity of Hampstead-road by making it a continuation of Tottenham Court-road, with which it has less in common than, say, Fleet-street with the Strand. Fidgeting with the names of streets and places—except, of course, when their plurality in different parts of the same town or district causes confusion—is always a mistake, for many reasons. There is even some inconvenience in the case of any very long street extending more than a mile or two, even when it has always borne the same name throughout. Take that well-known thoroughfare the Old Kent-road, for instance, with its 915 houses. It is quite difficult enough to spot your destination therein now, without adding on the 248 houses in the New Kent-road, which is really every way much more a part and continuation of Old Kent-road than Tottenham Court-road—which nowadays leads to nowhere of the name it bears—is of the Hampstead-road, which is really the direct approach to the happy paradise of the masses, and the not altogether spoiled residential favourite of well-to-do villa occupiers and garden-suburbanites.

The elevation of Sir Alfred East from the Associateship to fill Academic rank will be appreciated by all who are interested in the progress of English landscape-painting. Sir Alfred, who is in his sixty-fourth year, is a native of Kettering, to which town he presented, two years ago, a representative collection of his works. He studied art in Glasgow and at the Ecole des Beaux Arts in Paris, and had his first picture hung at Burlington House in 1883, its title being "A Dewy Eve." Since then he has been a regular contributor to the Academy. In 1899 he was elected an A.R.A., and in 1910 succeeded the late Sir Wyke Bayliss as President of the Royal Society of British Artists, when he was knighted. He has written several authoritative and informing works on Art.

Our own observations of suburban roads round London entirely confirm the assertions of a writer in the *Autocar* who, referring to the road-tarring work that is at present in progress in nearly every county, says:—"The ordinary surface that is tarred this summer will be a sticky, black, slimy morass next winter and will stand in need of a fresh coat next year. Local surveyors, and more especially county specialists, know this perfectly well, but I suppose their councils kick at the idea of an expenditure of a large order. Therefore, the farce continues, and the road is treated just as an old car body is painted up to sell or to pass muster temporarily. These days are supposed to be scientific times, and certainly someone is an authority on everything. But what is the good of any number of experts if their expert knowledge is not fortified with power to prevent inexperts from doing the wrong thing?" Not much, we fear, especially while Cabinet Ministers and Road Board officials talk optimism of the sort heard at last week's Road Congress, and since!

The borough of Stafford having refused leave to the Post Office to disfigure the residential part of the town with telegraph-poles, the Postmaster-General threatens an appeal to the Courts. We hope the borough of Stafford will fight. It is true the Post Office Act practically deifies the Postmaster-General, and people forget it. The more reminders the public get, the sooner we shall hammer the fact into the brains of St. Martin's-le-Grand that it has no more right to injure the amenities of a district than a railway company. A public authority should set a good example; and overhead telegraph wires in towns to-day are barbarous anachronisms.

Certainly everybody must buy the "Summer Double Number" of *Punch*. It is a delightfully conceived production of the best quality artistically, and full of real wholesome, healthy, laughter-provoking fun. The cartoon "The Liberal Pleasure Party at Sea" is a triumph of good-humoured irony, in which every current phase of the political situation is translated into side-splitting farce, which the most bigoted and the most philosophical alike must go into convulsions over. With equal lightness of touch and unerring aim our social and personal idiosyncrasies are merrily made the sources of the genuine delight with which we all pick holes in our neighbours' coats, happily unconscious of the rents in our own garments. Even a garden suburbanite must smile if too æsthetic to do more, at the two half-page cuts which illustrate the "dark" and "bright" sides of that "movement." In the one Jones, evidently too well acquainted with the drawbacks to the miniature gardens, and annoyed by the water down his back from the puncture in his own garden hose, is appealing to the maid to tell Simpkins next door to keep *his* hose playing within his own boundaries. In the other the Hogarth-Jenkins and Stoke Derwent-Pottses are fraternally utilising the dwarf fence as a lawn tennis net in a friendly match which is being played in both gardens!

They are pious people in Manchester! "As I passed our local town's yard this morning," writes a suburbanite in the *Manchester Guardian*, "the engineer in charge of the steam road-roller was preparing his ponderous pet for its labours. As he oiled and rubbed he whistled a hymn-tune [illegible] which, at the moment, struck me as unsuited for the accompaniment of vigorous labour. I did not recognise the [illegible] but I got [illegible] of its [illegible] upon me. It was [illegible] roll.'"

PROFESSIONAL AND TRADE SOCIETIES.

SOMERSET ARCHÆOLOGICAL SOCIETY.—This society is holding its annual meeting at Castle Cary on Tuesday, Wednesday, and Thursday, the 15th, 16th, and 17th inst. The business meeting will be held in the town-hall on the first day, when the Right Hon. Henry Hobhouse, P.C., will deliver the presidental address. Visits will be made to the Church of St. Mary Magdalene, Ditcheat, the Chapel of the Holy Trinity, Wyke Champflower, and Hapsden House. The annual dinner will take place in the evening at the town-hall, to be followed by a meeting for papers and discussion. Mr. Bligh Bond, F.R.I.B.A., has promised to supply evidences of a hidden symbolism in the plan of Glastonbury Abbey, and the Rev. E. Horne, of Downside Abbey, will discourse on the Scratch Dials on Somerset Churches. The second day's excursions will include All Saints' Church, Alford, the Keinton Mandeville Quarries, Church of St. Barnabas, Queen Camel, Church of All Saints, West Camel, and Hazlegrove House. A conversazione and concert will take place at the town-hall, Castle Cary, in the evening. On the third day there will be visits to the Church of Holy Trinity, Sutton Montis, Cadbury Camp, the churches of St. Thomas à Becket, South Cadbury, the Blessed Virgin Mary, Compton Pauncefoot, and St. Michael, North Cadbury, and North Cadbury Manor House. Cadbury Camp will be described by Mr. H. St. George Gray, with special reference to some trial excavations which he has undertaken there on behalf of the society.

A statue in granite of King Edward VII is about to be erected in Aberdeen. It is being executed by Mr. Arthur Taylor, sculptor, of Jute-street, Aberdeen.

The work of remodelling Waterloo Station is progressing rapidly and the London and South-Western Railway Company have just taken possession of a block of commercial premises and spacious refreshment rooms. The latter are in the centre of the station and [illegible] a buffet and grill dining and [illegible] They are entered from the Concourse. The wide area connecting the 23 platforms that will eventually be available at the terminus. The grill and dining room is panelled in English oak of Jacobean design and is ventilated by a system of [illegible] and air shafts. On the same level is the [illegible] room. The kitchens are placed in the [illegible]

Mr. Robert Grant, M.I.M.E., road surveyor of the western district of Kirkcudbright, Creetown, has been appointed country road surveyor of Sutherland. Mr. Grant is a son of Mr. Robert Grant, C.E., retired road surveyor of Kirkcudbright. He has had experience in engineering offices in Elgin, Dumfries, and Kirkcudbright. For six years he was employed as an engineer in connection with the Scottish Lighthouse Department in Glasgow and left that post in 1900 to become assistant surveyor to his father in Kirkcudbright. When that county was divided into districts in 1906 Mr. Grant was appointed to take charge of the western division which post he has since occupied.

In a report to the Bermondsey [illegible] the electric supply committee states that in order to provide adequate means of [illegible] circulating water for the two 5,000-kilowatt turbo-generators, which will be erected in the Summer-lane station during the forthcoming autumn, two more cooling towers are required. The cost is estimated by the architect and engineer to be as follows:—(1) Foundations, including overflow into the canal basin and underpinning the wall of the adjoining property, £1,800; (2) two cooling towers, with pipe connections and valves, £4,250; add for contingencies, £250—total, £6,300. The committee recommends that it be authorised to carry out this work.

Building Intelligence.

BRINSOP COURT, HEREFORDSHIRE. This mansion has been restored from little more than a moated ruin into a residence, and is about to be occupied by Mr. Hubert Delaval Astley and Constance Lady Sutton. The work has been carried out by Messrs. Keeble, Ltd., of London, under the superintendence of Mr. H Avray Tipping. The mansion has suffered from neglect, and early in the 19th century one historian says a tower, "though in a perfect state of preservation, was pulled down to assist in building a wall round the stables." In the present reparation, the typical Herefordshire half-timbered work on the west side, dating not later than Tudor times, was discovered on removing the modern plaster, has been left, side by side with the older Gothic portion, and next to it the Queen Anne roughcast gables are repaired and retained, as also is the brick-built elevation of the same building on the quadrangle side. No mock-Gothic work has been attempted; tracery has been replaced which had perished or been removed, but only where it was apparent what the old work was like.

BRISTOL.—The new clock and bells and ancient pairs of "quarter-Jacks" now restored at Christ Church with St. Ewen, Broad-street, Bristol, were dedicated by the Archdeacon of Bristol on Saturday afternoon, and their inauguration was performed by the Lord Mayor, Alderman C. J. Lowe. Messrs. John Smith and Sons, Midland Clock Works, Derby, the makers of the clock, have followed generally the construction designed by the late Lord Grimthorpe. The clock is fitted with a 1½ seconds pendulum and Grimthorpe's double three-legged gravity escapement. It shows the time on a dial 5ft. 6in. in diameter, strikes the quarters, with the aid of the "boys," on two bells cast for this purpose. The architect was Mr. C. F. W. Dening (Messrs. Rodway and Dening, Gaunt House, Orchard-street), who also has been restoring the decayed stonework on the tower of the church. The contractor was Mr. F. Chown, Montpelier.

EDINBURGH.—Dean of Guild Carter presided at the last meeting of Edinburgh Dean of Guild Court, when plans were submitted by the Commissioners of H.M. Office of Works for the extension of the Royal Scottish Museum. To allow for the proposed extensions, powers have been taken for the compulsory acquirement of a triangular piece of ground at the rear of the Museum bounded by Brighton-street and Lothian-street. The new ground is about two-thirds of the area of the existing buildings. The extensions are mapped into three sections, the first of which takes the form of an addition to the Natural History Galleries, and the erection of a new Architectural Hall. The erection of this section has been sanctioned by the Treasury, and the plans for this work were duly passed by the Edinburgh Dean of Guild Court. Section 2 will comprise a Lecture Hall and an extension of the Technological Section; while the particular purposes to which Section 3 will be put are undetermined. The cost of the work to be put immediately in hand will be £40,000, exclusive of ground and property purchase, and the entire scheme when completed will cost about £100,000. The present extension is to be three stories high, with a basement, and will have a stone frontage to West College-street and Lothian-street. The work will be proceeded with immediately.

Mr. Robert Millar has been appointed master of works to the Greenock Corporation at a salary of £260 per annum.

Lieut.-Col. F. G. von Donop, R.E., has been appointed chief inspecting officer of railways in succession to Lieut.-Col. Sir Arthur Yorke, retired under the age limit.

Mr. George E. Wrigley, surveyor to the Sowerby Bridge Urban District Council, has been appointed out of 151 applicants to the position of surveyor to the borough of Banbury at a salary of £250 a year, rising by increments of £25 to £350.

Correspondence.

REGISTRATION OF ARCHITECTS.

To the Editor of the BUILDING NEWS

SIR,—The Society of Architects being of the opinion that it is desirable in the public interest that persons requiring professional aid in architecture should be enabled to distinguish qualified from unqualified practitioners, and that steps should be taken to prevent unqualified and incompetent persons from posing as architects, have to that end drafted "A Bill for the Registration of Architects." Those whose assistance is essential in passing the Bill through Parliament, together with all other members of the public who may be affected by the proposals, are invited to consider the following observations and to communicate their views to the Society, so that the Bill may, when introduced, be, so far as possible, of a non contentious character:—

SOME REASONS FOR REGISTRATION.

Architects have the spending, in the aggregate, of vast sums of public money and the control of matters affecting the life, health, convenience, and financial interests of a very large section of the community. The practice of architecture calls for the possession and exercise of many and varied gifts and attainments, chief among which are artistic sense and feeling, scientific and professional knowledge, practical skill, and business ability. The various architectural bodies publish registers of their members; but the value of these lists of architects as a guide and protection to the public is very considerably discounted by the fact that the public directories necessarily schedule under the title of "Architect," without reference to his qualifications, any person who claims that designation, whether justified or not. The proposal for the Registration of architects is not a new one, nor does it introduce any new principle. It is merely carrying to its logical conclusion of State Registration the present voluntary system of Registration of their members by the various architectural bodies. Registration is in force in several European countries, many of the American States, and a number of our own dominions, while others are applying for it.

MAIN OBJECTS OF THE BILL.

The proposal is that at the time of the passing of the Act every bona-fide architect shall be entitled to Register, and that the vested interests of engineers, surveyors, clerks of works, builders, or other persons who may be affected, shall be protected, and opportunity afterwards given to all who wish to practise architecture of qualifying for admittance to the Register. Only those so registered are to be entitled to recover fees for services rendered as architects. The Bill would provide (inter alia) for the establishment of a Registering body, or council, comprised of members appointed by the Privy Council, the Royal Academy of Arts, and the architectural societies, for the administration of the Act and the conduct of the examinations.

THE EFFECT OF A REGISTRATION ACT

The first effect of an Architects' Registration Act would be to give an immediate and definite impulse to architectural education and training, by setting up a compulsory standard of qualification. The chief weakness of the present voluntary system of architectural examinations is that they are not obligatory (except under certain conditions for admittance to membership of architectural bodies). At present such examinations are not in any case essential as a preliminary to the practice of architecture or to the claiming of the title of architect. The ultimate result of such an Act of Parliament would be that the unqualified practitioner would be gradually eliminated by effluxion of time without inflicting injustice or hardship on anyone, and without creating a monopoly, while the public would have a guarantee that in employing any architect they would secure the services of a person possessed of at least the minimum qualifications required for the proper performance of his very onerous duties.

SOME ADVANTAGES TO THE PUBLIC.

Among some of the advantages to the public which, in the opinion of the Society, would be secured, as a result of the passing of a Registration Act of the kind advocated, would be: The raising of the standard of architectural education and training by the substitution of a compulsory, in place of a voluntary, system of qualification; the consequent adequate protection of the interests of that large section of the public affected, and the recognition by the State of the Art of Architecture as a great national asset, to be fostered and cultivated to the utmost.—I am, etc.,

C. McARTHUR BUTLER,
Secretary of the Society of Architects.
28, Bedford square, W.C.

LEGAL INTELLIGENCE.

SURVEYOR AND EX-COUNCILLOR FINED UNDER THE CORRUPT PRACTICES ACT.—At the Kent Assizes, on Tuesday week, before Mr. Justice Phillimore, William Richmond Warlow, surveyor to the Milton Regis Urban District Council, was indicted for unlawfully and corruptly giving to Charles Downey Richardson, who was then a member of the Whitstable Urban District Council, £10 on Jan. 3 and £10 on Feb. 19 for rendering services in connection with a sewage-disposal scheme submitted to the Whitstable Urban Council; and Richardson was indicted for corruptly receiving the money. Both defendants pleaded not guilty. Mr. Travers Humphreys prosecuted on behalf of the Treasury; Mr. Geo. Elliott, K.C., and Mr. Gibson defended Warlow, and Mr Thorn Drury, Richardson. Mr. Travers Humphreys, in his opening statement, explained that defendant Richardson, being a member of a public body, was charged with having received two sums of money from the other defendant, Warlow, as a reward for his having voted for and otherwise endeavoured to get a contract out of the Whitstable Council; while the charge against Warlow was that he gave those sums of money to Richardson either as a thank-offering for the work which he (Richardson) had done on his behalf, or as an inducement for him to do work on his behalf as a member of that public body. Mr. Humphreys said Richardson was a member of the Whitstable Urban District Council from April, 1910, until the election in April, 1912. In 1911 the Council were concerned with the question of the disposal of sewage of Whitstable, and it was resolved that engineers should be invited to send in competitive schemes for the disposition of the sewage. The schemes were to be sent in under a nom de plume; the idea being that members of the Council should not know the names of the engineers. Warlow was one of those who submitted a scheme, and the nom de plume he adopted was "W Richmond." His scheme was considered with five others, and it was moved at a meeting of the council that "W. Richmond's" scheme should be adopted. This was carried by 8 votes to 3. It was announced at the meeting which was held on Dec. 19, 1911, that the person who had sent in the successful scheme was Mr. Wm. Richmond Warlow. On January 3, 1912, a sum of £10 was paid by Warlow to Richardson. So far as the evidence went, those two persons had never met until August, 1911; there were no relations, either of friendship or of business, between them. It was a payment by a cheque which was cashed across the counter at Warlow's bank, where it was drawn. Richardson had said quite frankly in another Court that it was a payment which Warlow made to him because he had voted for him, and done his best to get his scheme carried through. Warlow, on the other hand, had said on oath that it was a loan. After the scheme was adopted on December 19, various difficulties were raised by landowners, who objected to the site of the proposed purification works, and it became necessary to have an amended scheme at a different site. On February 16, 1912, there was a further cheque for £10 paid by Warlow to Richardson. On February 13, Mr. Warlow sent in an amended scheme, which was considered by the Whitstable Council, and was eventually rejected, notwithstanding Richardson's support, by a single vote. By March 12 Warlow had paid Richardson the two sums of £10, the scheme had been thrown out, and he (Warlow) had got nothing for his money. Warlow thought it was a good thing to try to get his money back, and he accordingly commenced an action in the County-court against Richardson to recover the £20. Warlow was represented by a solicitor; but Richardson appeared in person, and defended the action; and except for that fact,

probably no one except these two persons would ever have known what had taken place between them. Richardson, during the hearing of this action, cross-examined Warlow, and subsequently gave evidence, and told the whole story. Evidence was then called. Julian Frank Whichcord, clerk to the Whitstable Urban Council, gave evidence as to Richardson's election to the Council and the proceedings of the Council with regard to the purification schemes. Cross-examined, the witness said that Richardson alone protested against the rescission of the resolution.—By Mr. Elliott: The Whitstable Council in 1909 saw Warlow with reference to the drainage scheme which was in operation at Milton Regis. Evidence was then given by Hubert Stanley Crow, clerk at Martin's Bank, Sittingbourne, with regard to the passing of the cheques; by Harry Grensted, registrar of the Sittingbourne County-court; and Charles M. Moir, reporter of the East Kent Gazette, who took shorthand notes of the County-court action. At the conclusion of the case for the prosecution, defendants went into the witness-box. Richardson said he was for many years an electrical engineer in London, and gave up business because he had sufficient for his needs at the time, but primarily because he had to remove to Whitstable for the benefit of his health. Before going to Whitstable, he was for many years a member of the Hampstead Vestry, and in 1910 he became a member of the Whitstable Council. There was great need of a drainage-disposal scheme at Whitstable, and he had supported another scheme before Mr. Warlow's came up. He and four other gentlemen had been to Milton in July or August, 1911, to see Warlow's drainage scheme there, and at the meeting of the Whitstable Council on December 19 in the same year witness supported the scheme sent in by Warlow, because he considered it was the only scheme which satisfied the council's requirements. Warlow afterwards promised him a present of £20, and sent him two cheques for £10 each.—Mr. Thorn Drury: From beginning to end were you influenced in your duty by the expectation of obtaining anything from Warlow?—Not in the slightest. In cross-examination by Mr. Elliott, witness said he brought no undue influence on the Whitstable Council to vote for Warlow's scheme. Mr. Travers Humphreys: Did you know who "W. Richmond" was?—I did not. Did you know that "Richmond" was one of Warlow's names?—Everyone knew the names of every engineer. Did you know that "W. Richmond" was Mr. Warlow?—No, I did not. Did you guess it?—No. His Lordship: Didn't it occur to you that "Richmond" was Warlow? It might have occurred to me; but I didn't know it. Counsel: Do you say you voted for this scheme without knowing who the author was? Yes. Then why should the author give you £10? Because it was after it was known to the world who was the author of the scheme. Asked why he did not cash at Whitstable the crossed cheque which was sent him, witness replied that if he had changed it locally, the tradesman would know it was Warlow's cheque, but would not know why it was given. To his Lordship: Witness found it easier to go to Sittingbourne and ask Warlow to cash the cheque for him. Cross-examination continued: The second cheque for £10 was part of the £20 which was promised him. He was bound in honour to take an interest in Warlow's scheme. Mr. H. Travers Humphreys: Was the thing which you say you were bound in honour to do to support his scheme? Undoubtedly. Warlow, who is a member of the Royal Sanitary Institute, and has been Surveyor to the Milton Regis Council 11 years, said that when he went to Whitstable to take the leads, etc., for his scheme, Richardson, who had visited his works at Milton some months before, gave him genuine assistance in preparing for the competition. Up to December 19 he had not made the slightest suggestion to Richardson that he was going to pay him if he used his influence on the council. On December 29 or 30 Richardson asked him if he could lend him £20, which he wanted, he said, for repairs to his machinery. Witness told him he could not; but, after second thoughts, he felt rather grateful to Richardson for the information he had given him, and decided to let him have the money. At that time witness had no reason to believe that his scheme would be accepted. It was agreed between them that the loan should be repaid in two or three months. At the County-court he denied the suggestion of Richardson that the £20 was a gift to him. A number of prominent residents of Sittingbourne and Milton were then called to speak to the excellent character which Warlow bore. The jury found the defendants not guilty with regard to the first £10, but guilty with regard to the second £10. His Lordship said he should order Richardson to repay the £10 which the jury had found that he corruptly received, and should further fine him £10. He should also declare him incapable of holding any public office for seven years from that date. As to Warlow, he should impose the same sum by way of a fine of £20, and declare him incapable of holding any public office, and must declare him also to forfeit the office of surveyor to Milton Regis District Council which he now held. He, however, should not deprive him of any pension or compensation, because he might have very well served the Milton Council, although he was now unfit to be a public officer. He should not mulct the defendants in costs, and not send them to prison.

A BRIGHTON ARBITRATION. — Warren v. W. and T. Garrett, Ltd.—King's Bench Division (before Mr. Justice Scrutton).—This was an issue in an action brought by Mrs. Martha Elizabeth Warren, widow and executrix of the late Mr. Walter Warren, of Western-road, Brighton, against Messrs. W. and T. Garrett, Ltd., builders and contractors, of Middle-street, Brighton. The defendants, it appeared, were employed by Mr. Warren to carry out certain works, and the agreement between them contained a clause referring disputes to the arbitration of Mr. Samuel Denman, architect, of Brighton. Eventually a second agreement was entered into, which, in some respects, modified the first. A dispute arose over the work, and Messrs. Garrett notified Mr. Denman that he was required to act as arbitrator. This he did, and made an award that £60 was due from the plaintiff to the defendants. Plaintiff now claimed a declaration that the award was not binding, and, further, that it was bad upon the face of it. Giving judgment, his lordship said he was satisfied that Warren, although an illiterate man, gave his consent to the arbitration of Mr. Denman, and, in fact, took part in it, calling and cross-examining witnesses. That being so, he must be bound by the award. There did not appear, either, any reason for saying the award was bad. The declarations were, therefore, refused, with costs.

CHARGE AGAINST TRADE-UNION OFFICIAL.—Charles Henry Moult, bricklayer, was indicted last week at Stafford Quarter Sessions for embezzling £1 8s. 11d. from the trade-union of which he was secretary. It was stated that prisoner was the secretary of the Smethwick Branch of the Operative Bricklayers' Union, and the allegation against him was that he had failed to account for the money, and that he had used it for his own purposes. Members of the society gave evidence that they had paid prisoner sums of money as their weekly contributions to the society, and prisoner had initialled their cards as having received the money; but it was shown that the sums had not been accounted for in the books of the society. Prisoner, in cross-examining the witness, sought to show it was possible for the secretary to initial the cards without having received the money. The jury found him guilty. Prisoner was committed for twelve months in the second division owing to the state of his health.

WOOD-PAVING MANUFACTURER SENTENCED FOR ARSON.—Sidney Vigers, fifty-five, wood-flooring manufacturer, pleaded guilty before Mr. Justice Darling at the Central Criminal Court on Thursday in last week to setting fire to a warehouse "with intent to injure." On the night of May 21 two policemen heard a noise in the defendant's premises in Heckfield-place, Walham Green, where he traded as the Westminster Patent Flooring Company, and about midnight they saw a man leave in a suspicious manner. They chased and caught him, and found that he was, apparently, an old man with a beard. He struggled violently, and the beard came off in the policeman's hand. About this time an alarm of fire was raised, and the brigade arrived to find the Westminster Flooring Company's works alight from end to end. Subsequently, in the safe, was found an insurance policy covering the stock, etc., in the Sun Fire Office for £3,500, with another policy in the prisoner's name covering certain premises in Queen's-road, Bayswater, which were the scene of a fire on May 18, 1911. In respect of this fire the Sun Fire Office paid defendant £1,763. In addition to disguising himself with a beard, said Mr. Bodkin for the prosecution, defendant endeavoured to shift the responsibility of the fire by placing a copy of the current number of the "Suffragette" in a prominent position upon the premises. For the defence, Mr. G. Elliott, K.C., said the one person who had suffered most by his act was the defendant himself, because when the fire occurred there was stock on the premises to a value in excess of the insurance, and there was a balance in his favour in his general affairs of £7,865. Two doctors who had attended the defendant said he was of a highly nervous neurotic disposition, and suffered from insomnia; while a brother said that latterly he had been heavily overworked, and it was a fact that out of his profits he had bought house property worth £12,000. Mr. Justice Darling sentenced prisoned to penal servitude for five years.

RESPONSIBILITY OF ARCHITECTS FOR EXTRA WORK.—In the Superior Court, Montreal, Mr. Justice Fortin has given judgment in the case of Pauze v. Doucet, and others, condemning the defendants, a local firm of architects, to pay the plaintiff, a contractor, 219dol., the price of certain extra work done on a building by the contractor at the request of the architects, but without the authorisation of the proprietor. The plaintiff, on being refused payment of the extra work by the proprietor of the structure, took action against the architects direct, maintaining that as it was on the order of the latter that he had done the extra work it was incumbent upon them to adduce written evidence that the work had been ordered by the proprietor, or failing this, pay the full amount of the extra work. The provisions of the law limiting the responsibility of the proprietor for extra work done in connection with a building in course of erection are explicit, confining such responsibility only to works the execution of which has been authorised in writing by the proprietor. In the present case, the plaintiff being refused payment of certain extra plumbing work by the proprietor, on the ground that he had never authorised the carrying out of such work, decided to have recourse against the architects. It was on the order of the latter that he had done the work, the architects having written a communication to him, stating that they had received orders from the proprietor to have the work done. The proprietor denied ever having given such order, while the architects said the order was verbal. Mr. Justice Fortin held that the proof was to the effect that the architects never had any mandate from the proprietor to order the extra work in question. They had seen fit to order the contractor to go ahead with the work, and it was now incumbent upon them to pay for the work which they had ordered. An appeal has been made to the Court of Review.

BIRMINGHAM QUANTITY SURVEYOR'S BANKRUPTCY.—At the Birmingham Bankruptcy Court, on June 26, before Mr. Registrar Whitelock, the public examination was held of James Richard Shaw, quantity surveyor, of 39, Newhall-street, and residing at 395, Soho-road, Handsworth. Debtor's statement of affairs showed liabilities of £1,588 17s. 1d., and a deficiency of £861 14s. 4d. He attributed his failure to becoming surety for his brother-in-law to his trustee under a deed of assignment, payments of heavy interest on borrowed money, and, owing to the slump in the building trade, to his having to take on work which did not prove remunerative. The examination was adjourned until July 17.

A new music wing of St. Paul's Girls' School, Brook-green, Hammersmith, was formally opened on Tuesday. Land and buildings have cost £20,000.

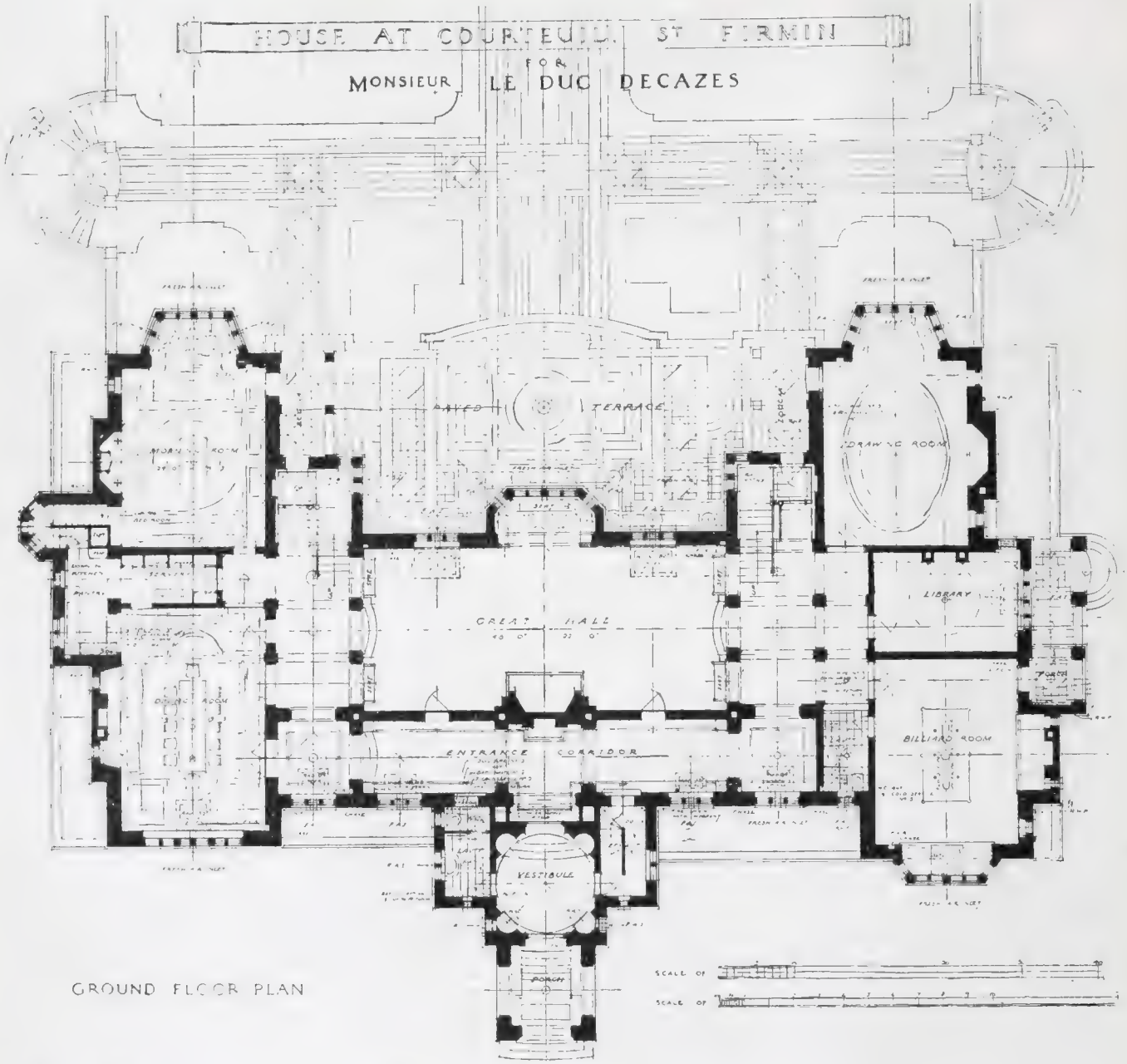
Mr. A. J. Taylor, of Bath, has prepared designs for a system of medical baths which the Torquay Town Council have decided to establish at an estimated cost of about £15,000, including a swimming-bath.

The plans for the new town hall at Simla have been referred back to Mr. John Begg, F.R.I.B.A., the architect, the idea being that the building should conform as far as possible to the library and municipal office so far as its outward architectural style is concerned.

Princess Louise Duchess of Argyll laid the foundation-stone on Tuesday of the in-patient department of the South London Hospital for Women, which is being built on the south side of Clapham Common. Mr. Marcus E. Collins, F.R.I.B.A., of Old Broad-street, E.C., is the architect.

After viewing the sketch models, the executive committee of the W. S. Gilbert memorial have formally approved the designs prepared by Sir George Frampton, R.A. The memorial, which may be placed on the Embankment, consists of a medallion in bronze, with figures illustrative of the genius of the deceased dramatist.

At Wednesday's meeting of the Court of Common Council, over which the Lord Mayor presided, £18,000 was voted for the acquisition of premises in connection with the widening of Leadenhall-street. For the widening of Fleet-street it was agreed to purchase the interests in the Cick Tavern for £2,400, and in the Green Dragon for £14,750. It was also resolved to secure improvements in Seething-lane, Great Tower-street, and Hanging Sword-alley, on the give and take principle.



GROUND FLOOR PLAN

Our Illustrations.

COMMONWEALTH BUILDING, LONDON, FOR THE GOVERNMENT OF THE COMMONWEALTH OF AUSTRALIA.

This building is being erected, in the Strand and Aldwych, to contain the offices of the High Commissioner for the Commonwealth of Australia, and an Exhibition Hall for the display of Australian products. Accommodation is also provided for the offices of the Agents-General of the States who desire to be housed in the building, and the remaining offices and shops will be let. The building will be externally of Portland stone upon a base of trachyte, a greenish grey stone, resembling granite, which is being worked and imported from Australia. The external sculpture and internal mural decorations are to be carried out by Australian sculptors and artists, including Mr. Bertram Mackennal, A.R.A. Australian marble is to be used internally for the Exhibition Hall, and Australian woods for the finishings and wood block floors. The principal rooms on the first floor, accommodating the High Commissioner, will be panelled with Australian black bean-wood. The architects are Messrs. A. Marshall Mackenzie, LL.D., A.R.S.A., F.R.I.B.A., and A. G. R. Mackenzie, F.R.I.B.A., of 1, Victoria-street, Westminster, London, S.W. His Majesty the King will lay the foundation-stone of the building on July 24.

THE MUNICIPAL ART GALLERY, DUBLIN

For a description of this double page and a side view of the gallery, see pp. 6 and 7.

CHATEAU COURTEUIL, NEAR CHANTILLY, FOR THE DUC DECAZES.

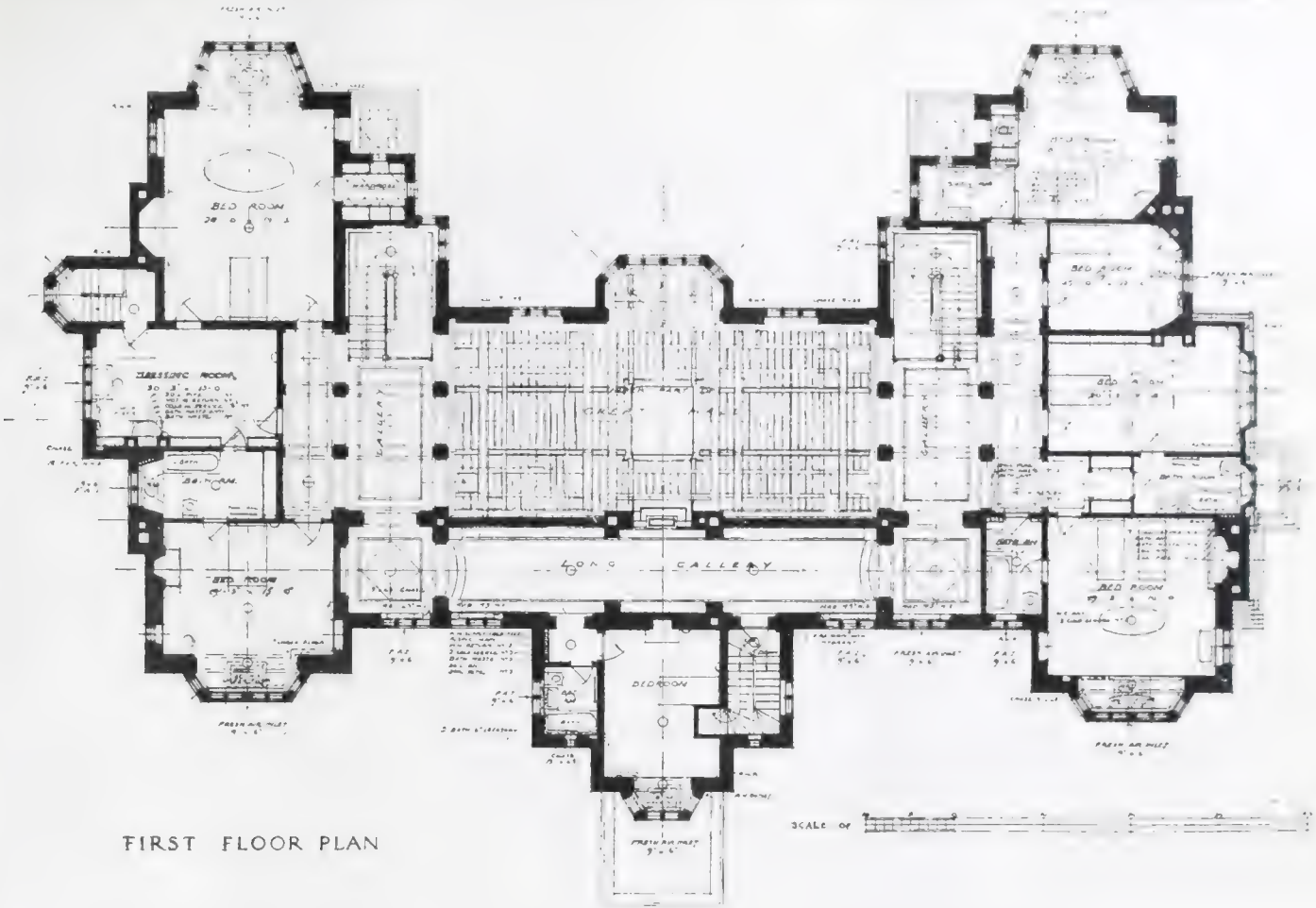
The Chateau Courteuil, near Chantilly, now erecting, has been designed for the Duc Decazes by Mr. Stanley Hamp, A.R.I.B.A., of Messrs. Collcutt and Hamp, architects, of Bloomsbury-square, W.C. The site is that of a formerly existing chateau which was so far out of repair that it had to be demolished, and a large quantity of the material, including panelling, is being used in the new building. Adjoining the house are the racing stables for 36 horses, these buildings are being altered and put into repair. The estate is a large one, containing much beautiful timber, and a large natural lake. The feature of the plan here illustrated is a large hall, rising up through the first floor, which is to be panelled in oak, with stone facing above, and heavy oak-beamed ceiling. Spacious corridors are arranged on the first floor, with arched openings looking into the hall. Bath- and dressing rooms are provided to each bed room. The walls are of local stone; but stone slates are being imported for the roof. The chimney-stacks are to be built in local greyish-red bricks, to tone with the roofing material. The drawing here reproduced is at the Royal Academy Exhibition.

A BOAT-HOUSE AND GYMKHANA CLUB.

For the assessor's award in this Building News Designing Club, also the design placed third, see pages 3 6.

A new county school for girls is being built on a site 4½ acres in extent in the Farnham road, Guildford, nearly opposite the Royal Surrey County Hospital. The plans have been drawn by Messrs. Jarvis and Richards, architects to the Surrey Education Committee. The school will be somewhat similar in design and character to the technical institute, and accommodation will be provided for 235 girls. The contract has been taken at £12,756 by Messrs. H. Knight and Son, of Tottenham.

Representations having been made to the Finchley Urban District Council by the medical officer of health and the ratepayers' associations that further accommodation was required for the working classes, the council has decided to embark on an extensive housing scheme. It has been agreed to purchase the Woodhouse Estate, North Finchley, consisting of thirty-six acres, for the sum of £12,000, the suggestion being made that as a start two hundred houses should be built. The council has been encouraged to take this step by the success which has attended the first housing scheme. This consisted of sixty houses, let at rentals of 5s. 9d. to 10s. 6d. a week, and there is a balance in hand of over £400.



FIRST FLOOR PLAN

HOUSE AT COURTEUIL, ST. FIRMIN, FOR M. LE DUC DECAZES.

COMPETITIONS.

CHESTERFIELD.—In a competition for a new cemetery, with chapel, lodges, etc., at Chesterfield, limited to local architects, six sets of designs were submitted by Messrs. W. M. Ashmore, G. B. Deeping, W. A. Darbyshire, W. C. Jackson, Rollinson and Son, and T. S. Wilcockson, all of Chesterfield. The assessor, Mr. G. H. Widdows, A.R.I.B.A., the architect to the Derbyshire County Education Authority, has selected the design by Mr. W. M. Ashmore, of Highfield-road, Chesterfield; placing second that by Mr. Bailey Deeping, and third that by Mr. W. C. Jackson. In his report the assessor says of the winning design: "I would draw the committee's attention to the simplicity of the elevations, and one is glad to note that the architect who designed these lodges has sufficient courage to break away from the so-called Gothic treatment, which has been so conspicuous a feature in cemeteries of the last fifty years. In the event of the design being carried out as a whole, your committee will obtain something of which they may be justly proud, and I am certain that they will feel satisfied with the results."

GLASGOW.—The competition for the new Training College at Jordanhill, Glasgow, has now been determined. The following six firms of architects, practising in the City, were invited to submit designs—viz., Messrs. Henry Higgins, West George - street; McWhannel, Rogerson, and Reid, Jane-street; Honeyman, Keppie, and Mackintosh, West George-street; H. and D. Barclay, St. Vincent-street; John Burnet and Son (Dr. J. J. Burnet, A.R.S.A.), St. Vincent-street; and Andrew Balfour, of Mains - street, Blythswood-square. Mr. F. T. Baggallay, F.R.I.B.A., of Bloomsbury, London, acted as assessor. The cost of the buildings is estimated to be about £120,000. The Glasgow Provincial Committee selected the design of Messrs. H. and D. Barclay, F.R.I.B.A., for the Training College buildings; the design of Messrs. Honeyman, John Keppie, F.R.I.B.A., and Charles R. Mackintosh, F.R.I.B.A., for the Demonstration School; and the design of Mr. Andrew Balfour, F.R.I.B.A., for the hostel building. The drawings were sent in on May 15 last. Each unsuccessful competitor receives a premium of £50. The site covers 45 acres, and Jordanhill Mansion House will be retained for Housewifery and Music School. The Demonstration School is for 800 pupils. The college building will accommodate 1,200 students. The frontage is 310ft. by 196ft. wide, with two quadrangles 108ft. by 75ft. The main building is three stories high, and the drawings measure 6ft. by 5ft. The Demonstration School has 36,000 square feet of flooring, and the Hostel 13,000. There may be four hostels in lieu of one. The plans will be on view at the Royal Technical College for some time. The Conditions of the competition empowered the committee to select separate architects for the different buildings. The cost is not fixed, and is subject to adjustment.

YARMOUTH, NORFOLK.—Mr. Thomas Adams, town - planning assistant, Local Government Board, has consented to act as assessor in the competition to be held in connection with the town-planning conference at Great Yarmouth. Drawings for the competition should be sent in forthwith to Mr. J. W. Cockrill, borough engineer, Great Yarmouth.

CHIPS.

The partnership heretofore subsisting between F. Shire and G. M. Burbage carrying on business as builders at Johnson-street, Notting Hill Gate, under the style of Shire and Burbage has been dissolved.

The experimental track of the Road Board at the National Physical Laboratory is 34ft. in diameter by 2ft. 6in. wide, and is subjected to the wearing action of eight cast-iron wheels, 3in. wide, each driven by a 2H.P. motor. It is estimated that 24 hours' continuous running of this machine represents a year's wear on a typical heavy-traffic road.

The Bournemouth Town Council on Friday discussed a scheme for erecting a pavilion and concert-hall on the Belle Vue site at an estimated cost of £60,000. It was decided to ask the borough architect to submit plans.

The Earl of Radnor on Wednesday week unveiled in the market-place, Pewsey, Wiltshire, a statue of King Alfred the Great which the inhabitants of Pewsey have had erected as a memorial of the Coronation of King George V., thus linking up the year 871 with the 20th century.

The Board of Trade have recently confirmed the undermentioned Order made by the Light Railway Commissioners: Glamorgan County Council (Morriston to Pontardawe) Light Railways (revival as to part) Order, 1913, reviving the powers granted by the Glamorgan County Council (Morriston to Pontardawe) Light Railways Order, 1903, in relation to part of the railway and works thereby authorised.

Work has just commenced in connection with improvements at Shrewsbury to facilitate the carrying out of alterations in the goods accommodation of the Great Western Railway at Castle Foregate. The present offices are to be superseded by an entirely new structure that is to be increased warehouse accommodation for general goods, as well as an improvement of the grain warehouse; new sidings are also being provided.

The *Guardian* calls the attention of clergymen to the danger of making the steps to altars too highly polished, with an indiscernible edge. Last week, at St. Margaret's, Annfield, the Bishop of Liverpool had an awkward fall, involving the overturning of a standard candlestick and the setting fire to some hangings. Our contemporary points out that in some cases the difficulty is overcome by cutting a moulding along the edge of the steps in the sacrarium.

A deputation of the municipality of Nice, headed by the mayor, General F. Goiran, presented at the Guildhall on Thursday in last week to the Corporation of the City of London a half-sized terracotta replica of the memorial of Queen Victoria recently erected at Nice. The work at Nice, of which the sculptor was M. Louis Manhert, was unveiled last year by M. Poincaré, and a bronze reproduction was presented a few days ago to the King. The model will be placed in the art gallery at the Guildhall.

PLACED SECOND



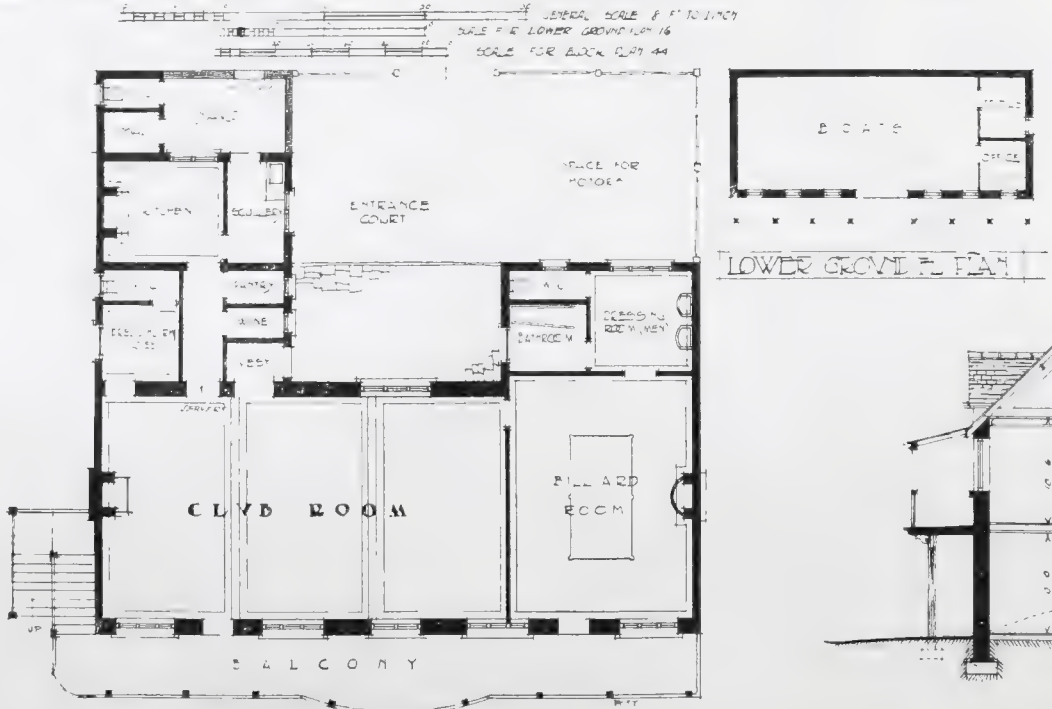
ELEVATION TO RIVER





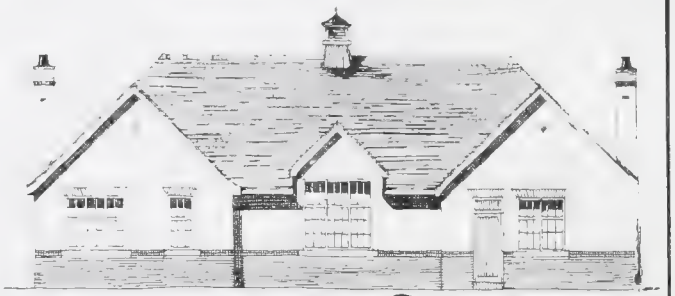
EAST ELEVATION

BENGALA BOAT HOUSE & CLUB BY EVEREST

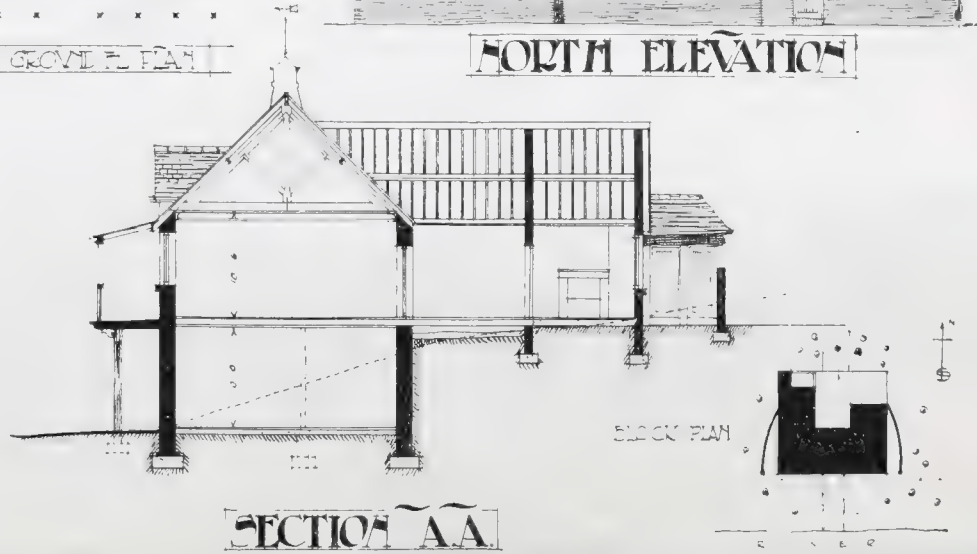


GROUND FL. PLAN

LOWER GROUND FL. PLAN



NORTH ELEVATION



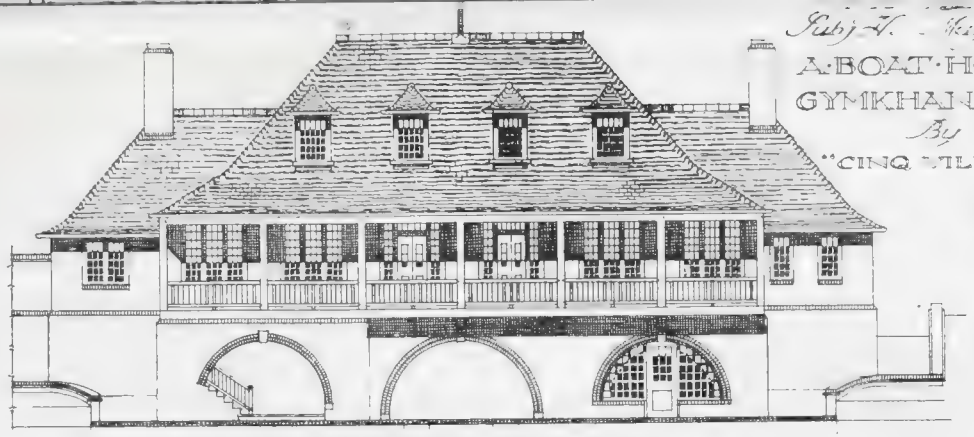
SECTION A.A.

Subj. A. May 31. 1913.

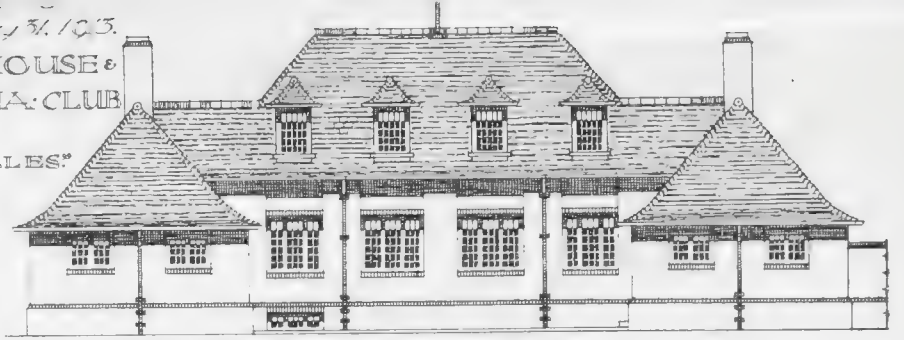
A BOAT-HOUSE & GYMKHANA CLUB

By

"CINQ VILLES."

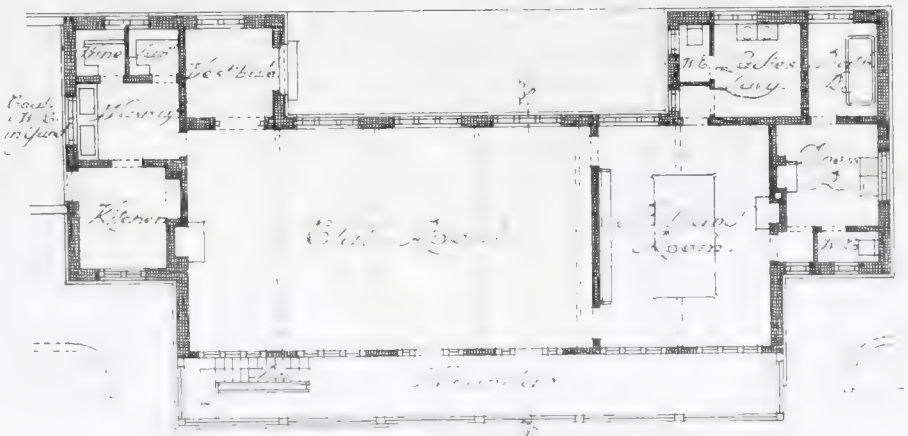


ELEVATION to the RIVER.



NORTH ELEVATION.





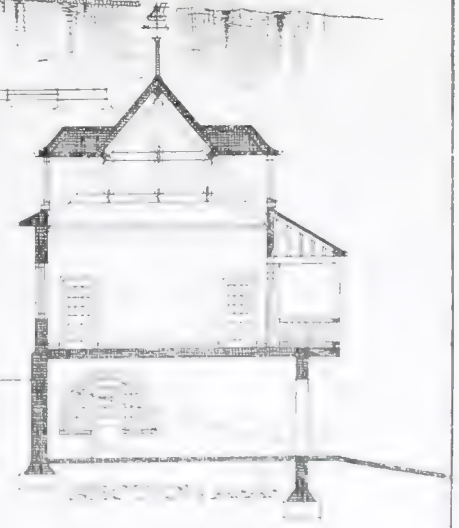
Upper GROUND FLOOR



Lower GROUND FLOOR.



WEST ELEVATION



"BUILDING NEWS" DESIGNING CLUB.

Intercommunication.

GUINEAS FOR BEST REPLIES.

We offer a prize of one guinea every week for what we deem the best reply to any query appearing in this column.

Replies must be sent in over real name and address. No others can receive a prize. The Editor's judgment is final.

This competition is restricted to buyers of the paper, and with each reply a coupon cut from our front page must be enclosed.

Any number of replies can be sent, but a coupon of this date must accompany each.

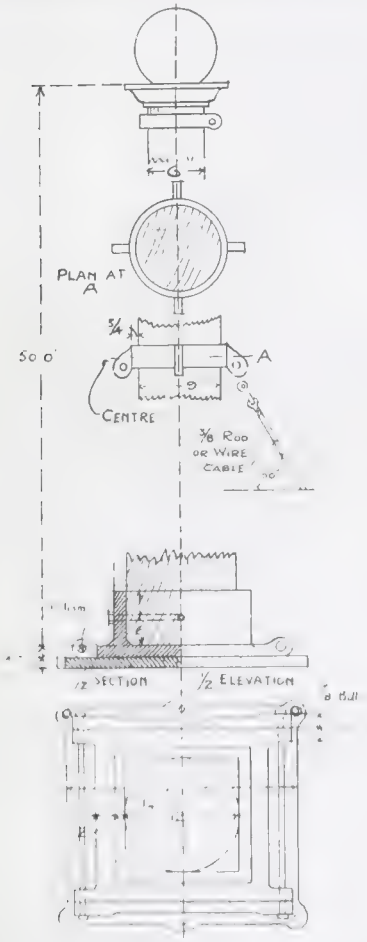
All else being equal, brief replies will stand the best chance. We emphasise this, as some correspondents ignore the fact that querists want terse facts, not long essays. Any necessary illustrations must be in line only—no tints or washes—and about twice the size they are meant to be reproduced. We are unable to avail ourselves of replies that contain illustrations unless we receive them by first post on Tuesdays.

The right to withhold the prize in the event of no reply being received worthy of it is reserved by the Editor, who also claims the right to publish any other replies he may deem useful.

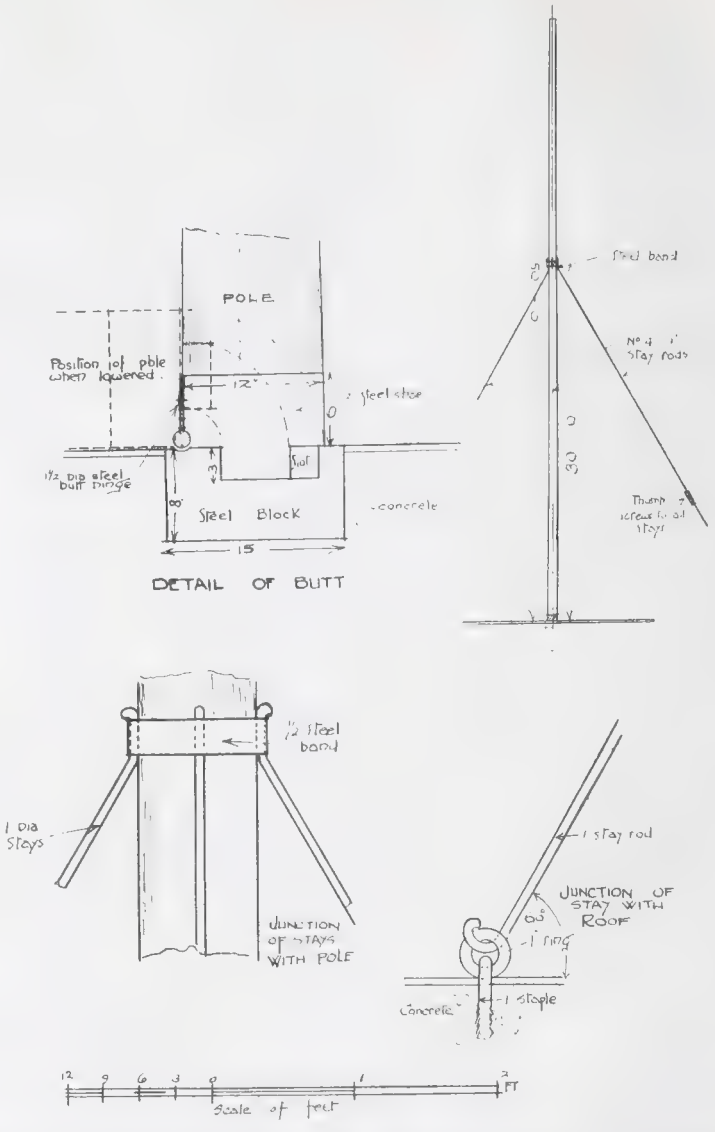
We divide the guinea between Messrs W B Conv, Arthur S Crumpler, and C Hoffman

REPLIES.

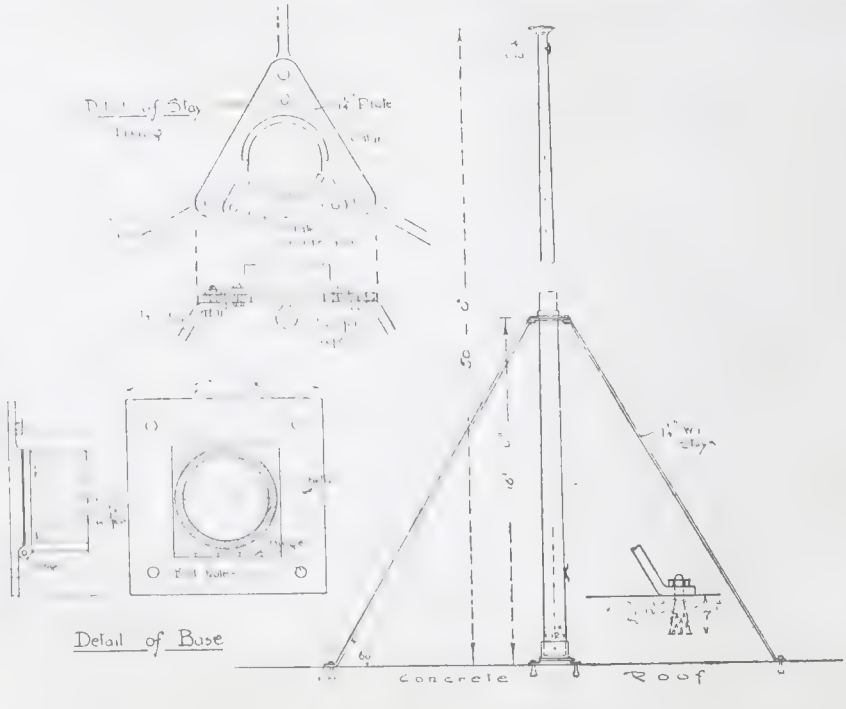
1428 FLAG-POLE.—Sketch gives design in detail, and only a few additional remarks are necessary. Pole to be of spruce or pine, painted 4 coats of white-lead paint. The base piece is cast in one piece, and the bolts may be withdrawn either side to allow the pole to be lowered either way. The centre band to attach stay is cast in one piece and lipped over top. Stay to be fitted with clevis or turnbuckle to allow for tightening up. Care should be taken to secure the base plate to roof, and bedding down bolts. These should be at least 4in. diameter. Base of pole is square for a foot or so, and then rounded. This is secured by bolt and nut. The design for top of pole can be altered to suit requirement, and as long as the top of pole is 8in. diameter, this point can be easily settled.—W B Conv, Jr, Magdalen-road, Wandsworth Common, S W.
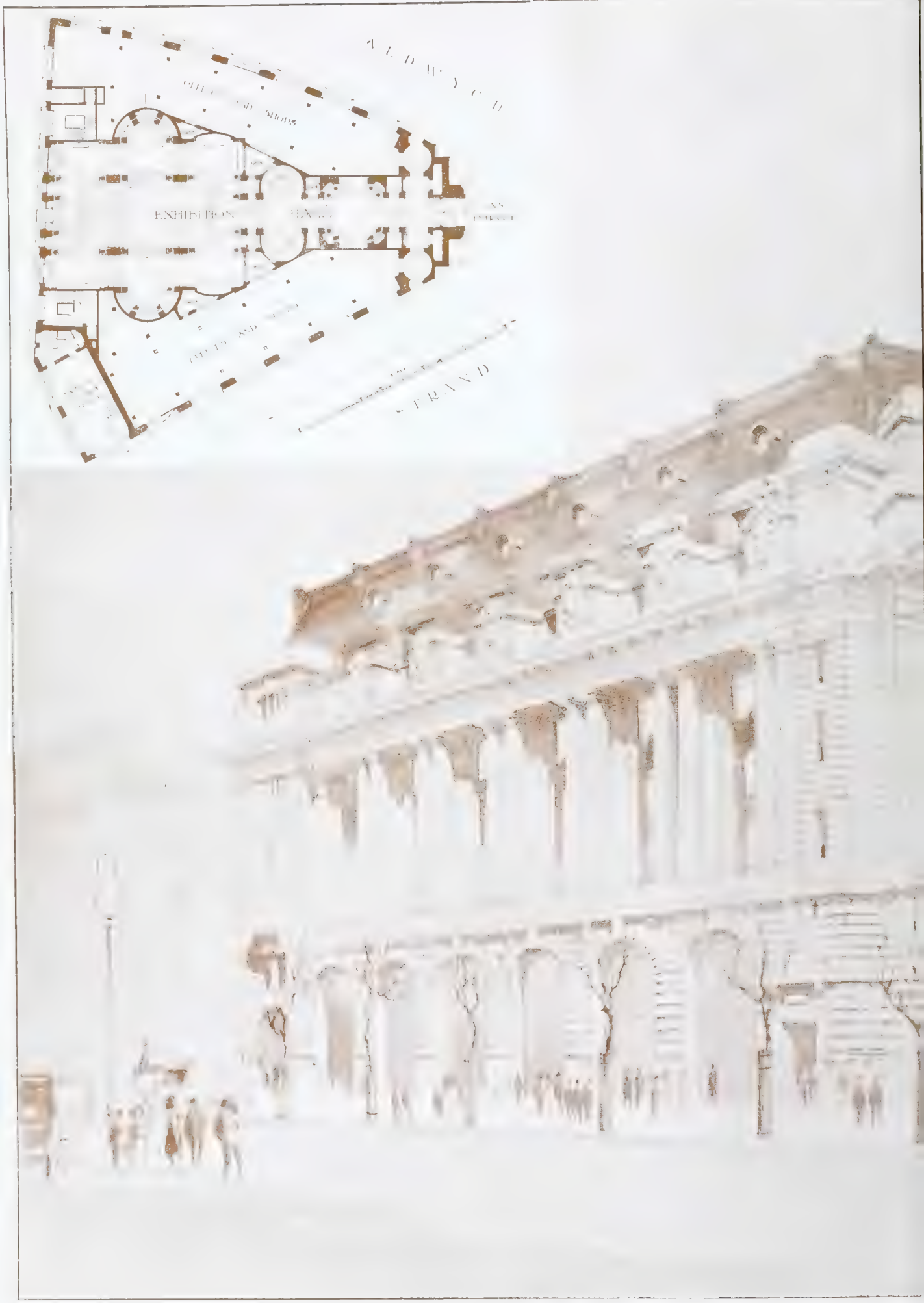


1428 FLAG-POLE.—I have sketches of the way I should propose erecting a 30ft. flag-pole on a concrete roof. The butt of the pole would be 12in. diameter, tapering to 8in. The shoe would be of ¼in. steel, with 1½in. steel hinge, the whole being let into a steel block in the manner shown. The stays would be 1in. diameter, fitted with thumb-screw adjusters, and secured to roof with hook-and-eye, and to pole with ½in. steel band. The angle proposed to be used is 60°, commencing, from 30ft. from base of pole. By this method, by simply loosening the thumbscrews, the pole could be gently hinged over in the manner indicated by dotted lines. As shown, a small slot would be required in the block, to allow for the tenon slewing over when the pole is being lowered.—Arthur S Crumpler, 20, Alexandra-road, Hemel Hempstead.



1428 FLAG-POLE.—The sketches herewith illustrate a method of securely fixing the flag-pole to a concrete roof, and yet enabling the pole to be easily lowered for repainting. A square metal base-plate is fixed to the concrete roof by means of four ragbolts, one at each corner. The centre part of the plate is slightly raised, and hinged thereto is a circular cast-iron shoe, 1in. metal and 12in. diameter inside, to





COMMONWEALTH BUILDING, LONDON, FOR THE G
Messrs. A. MARSHALL MACKENZIE, LL.D., A.R.S.A., F



ERNMENT OF THE COMMONWEALTH OF AUSTRALIA.
I.B.A., and A. G. R. Mackenzie, F.R.I.B.A., Architects.





THE MUNICIPAL ART GALLERY, DUBLIN, SITUATED ON THE RIVER LIFFEY. Mr. E. L. Lutyens, A.R.A., F.R.I.B.A., Architect.



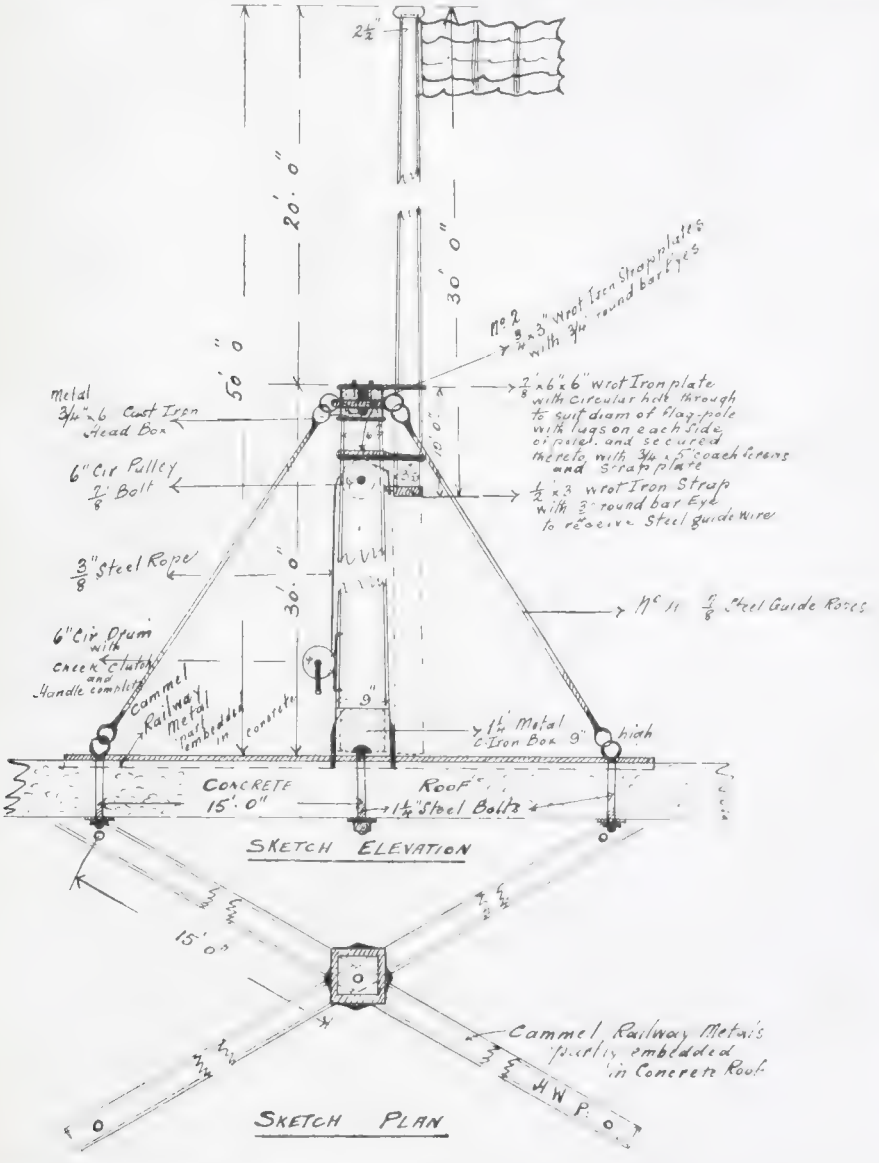
CHATEAU COURTEUIL ST. FIRMIN, NEAR CHANTILLY, FOR MONSIEUR TH



DUC DECAZES.—Mr. STANLEY H. HAMP, A.R.I.B.A. (Messrs. COLLCUTT and HAMP), Architect.

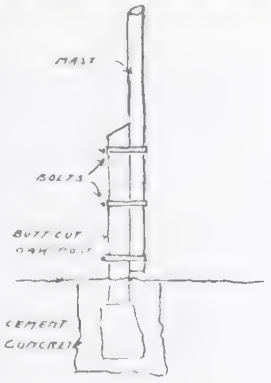
receive the butt of the pole, which is secured in the shoe by a pin driven through holes in the side of the shoe and through the butt. The shoe is made to spread from circular to square at the bottom, fitting over the raised square on the base plate, and enabling a large strong hinge to be used. From 12in. at the bottom the diameter of the pole tapers in a height of 50ft. to 4in., and has three wrought-iron stay-bars fixed at one-third of the height of pole, owing to its exposed position. If fixed at a greater height than one-third, the flag-pole will appear dwarfed. The stay-bars are of wrought iron, 1¼in. in diameter, and making an angle with the roof of about 60°, fastened to the concrete by means of rag bolts let in about 6in. or 7in., similar to base fixing. To enable the flag-pole to be released easily and without disturbing the stay-bars, a triangular wrought iron plate, ¼in. thick, with 1in. thick semicircular collar, is provided (see detail), in which the side opposite the collar is open to the centre, enabling the pole to drop out when released. The stay-bars are bolted one at each extremity of the triangular plate, and a shaped plate with segmental collar is bolted to the triangular plate to secure the flag-pole in position. By this means, when it is required to lower the pole, all that need be done is to remove the small securing plate, which releases the pole, allowing it to swing down on the hinge at the bottom without interfering with the stay-bars, a rope passed through the eye shown being used for raising and lowering. If the roof is not yet constructed, it perhaps would be possible to secure the base-plate and stay-bars to some of the reinforcements in the concrete; but it is assumed in the above notes that the roof already exists.—C. Hoffman, 28, Somerset-road, Bournemouth.

[13128.] FLAG-POLE. I herewith send sketch and particulars of a pitch-pine flag-pole (varnished), 52ft. high, that was erected in 1900 at 900ft. above sea level, in an exposed situation, which at date shows no signs of dilapidation.—Henry Walker, Miller Arcade, Preston, Lancs.



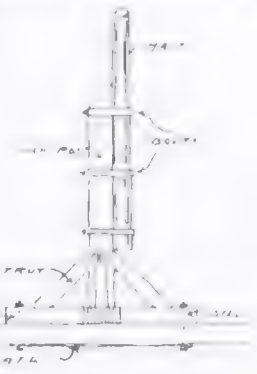
[13128.] — FLAG-POLE. — This question was answered, with sketches, in Vol. XCVII., No. 2861, Nov. 5, 1909. Further information appeared in Vol. XCVIII. No. 2883, April 8, 1910. As the querist wishes to lower the pole for painting, hadn't he better consult a shipbuilder, and have a pole put up similar to a yacht mast? Of course, the usual method of painting is to employ a steeplejack who has been a sailor.—Frank Wilson, 225, Nottingham-street, Sheffield.

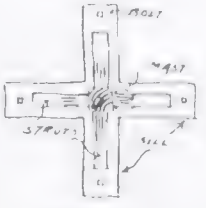
[13128.] — FLAG-POLE. — The general method of fixing flag-poles around the district is to bolt them to stout butt cut oak posts having charred ends let into 3ft. or 4ft. of cement concrete, as shown in sketch



No. 1.

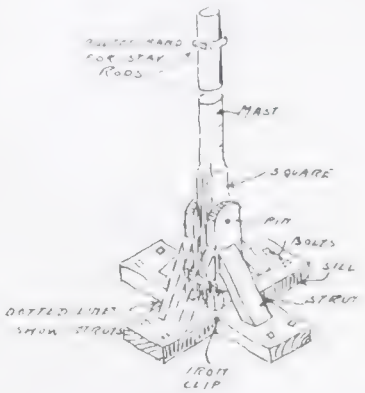
No. 1.—For a flat concrete roof some modification will be necessary, and I would suggest the method shown in No. 2, as being quite suitable, and one in which the pole could be easily lowered for painting, &c., as required, by the removal of the upper bolts. The post would require to be about 9in. square, and 6ft. or 7ft. in height, to be framed into and strutted to two cross-pieces, each arm of same to be about 3ft. long, bolted to the concrete roof, the bolts to be taken through the roof and connected to each other by means of the plates as shown, so as to offer the greatest amount of resistance to the wind. The higher the post and the longer the cross-pieces, the less the leverage to be counteracted from the flag at the top of the pole. As an alternative the method that is used on small boats and yachts, and requires but little alteration before adoption. A three-sided stock, about 4ft. high, into which the butt-end of the pole fits, having a pin through the stocks and mast about 9in. from the top (see sketch





No. 2.

bolted and strutted all as before. To take the four stay-rods, a band should be bolted on to the pole, at [illegible] ground—this to be determined by experiment, but as high as possible; the stay-rods to be 1in. in diameter, and bolted to proper eyes and plates, securely fixed [illegible] in the way of access to the tower or of traffic. In



No. 3.

whatever direction the wind blows two rods [illegible] in tension and two in compression. The pole to be of larch, 9in. in diameter at the top, and 12in. at the butt end. If money is no object, steel tubes, [illegible] casting, could be made on the same plan.—Mr. K. H. Read, Lecturer on Building Construction, Gloucester and Stroud Technical Schools.

The council of Sheffield University have appointed Mr. W. G. Fearnsides, M.A., to the Sorby Chair of Geology. Mr. Fearnsides, who [illegible] at present lecturer and assistant in [illegible] at Sidney Sussex College, and [illegible] petrology at Cambridge.

An arrangement has been arrived at between the municipalities of Toronto and the Grand Trunk and Canadian Pacific Railway companies, track viaduct along the waterfront [illegible] The right-of-way for the structure will be [illegible] in breadth, thus allowing [illegible] The cost of the viaduct will be [illegible] Union Station will be between [illegible] and 20,000,000 dollars. The agreement provides for the completion of the [illegible]

Mr. R. H. Bicknell, M.Inst.C.E., Local Government Board inspector, held an inquiry at the urban district council offices, Sutton, Notts, on Monday in regard to the application of the council for [illegible] the erection of a fire-station in Church-street, £507 for the purchase of a fire-engine and escape, and £450 for laying out Portland-square and erecting a public convenience thereon. The particulars and plans [illegible] before the inspector by the clerk and surveyor. No opposition was [illegible]

PARLIAMENTARY NOTES.

PUBLIC RIGHTS OF WAY BILL.—This measure was read a second time in the House of Lords on Thursday in last week, the Lord Chancellor stating that the Government cordially supported it, and would give such support as they could to its passing in the Commons. The Bill proposes to establish public right of way where evidence is given of 40 years' use of a way irrespective of the period that the land has been in family settlement. Lord Eversley, in moving the second reading, said that, owing to motor traffic in the rural districts, the only safe course was to take to the footpaths, which the Bill would secure for the public. The Bill would greatly simplify the proof of footpaths and other highways, since it would remove the necessity of relying upon the evidence of aged and infirm witnesses by providing that uninterrupted public user for forty years should be sufficient to raise the presumption of dedication in the case of paths crossing entailed estates.

LONDON COUNTY COUNCIL GENERAL POWERS BILL.—A House of Commons Committee, with Sir W. Howell Davies as chairman, is considering this measure, dealing with a large number of subjects, to only one of which was there opposition. That was the scheme for fixing on buildings apparatus connected with public lighting. The scheme was the outcome of representations by twenty Metropolitan Borough Councils, who were public lighting authorities, that they desired power to attach to any building such brackets, lamps, wires, pipes, and other apparatus as might be needed for the lighting of the streets. If, in the opinion of a Borough Council, the consent of a property owner was unreasonably withheld, it would be open to the Council to appeal to a police magistrate, who would have authority to decide. The reason for the scheme was that in narrow streets it was, in the opinion of the twenty borough councils, desirable to suspend the public lamps from wires or other supports attached to the buildings on both sides. Less frequently it might be convenient to fix the lamps to buildings without suspending them. The North Western and the Great Eastern Railway Companies had petitioned against the clause, their argument being that it might entail interference with their electrical apparatus. The clause was, however, approved by the Committee. The Southwark Borough Council sought power to rebuild a coroner's court and mortuary on an open space formerly the burial-ground attached to St. George's Church. After hearing evidence, the Committee passed the clause. The Attorney-General also reported on a proposal from the Battersea Borough Council to be allowed to use the Latchmere allotment for the completion of their housing scheme. By the London County Council Act of 1905, a condition was attached to the use of these 3¾ acres for building, that the borough council should provide an equivalent open space within the borough. This they had been unable to do; but they had agreed to contribute £1,500 towards the purchase of 2½ acres of land just outside the borough adjoining Wandsworth Common. In the circumstances the London County Council were satisfied. Mr. Fitzgerald, K.C., for the council, said that the Battersea Council in substance, though not in letter, had complied with the obligation in the Act of 1905. The Committee heard evidence from Mr. E. J. Wood, assistant town clerk of Battersea, and disallowed the clause. The other clauses were adjusted, and the Bill was ordered for report to the House.

NEW STAIRCASE AT THE HOUSE OF COMMONS.—Mr. King asked Mr. Wedgwood Benn on Monday, when the new staircase and lift leading from the dining-room lobby to the terrace would be completed, and whether the staircase, when finished, would have any decorative or novel features. Mr. Wedgwood Benn: The decoration of the new staircase has largely been carried out with old wood-carving which had been in store. The central panel is at present occupied by tapestry lent for the remainder of this session by the Victoria and Albert Museum. It is intended ultimately to fill this panel with a picture by Mr. Seymour Lucas, representing the flight of the five members. The First Commissioner feels certain that the House will learn with gratitude that a generous promise to present this painting has been made by the hon. member for West Wolverhampton (Mr. A. F. Bird). The size of the panel is 10ft. by 15ft. Mr. Lucas is at present engaged on the picture, which will probably be ready next summer. It is hoped that the staircase itself will be open for use on Wednesday, the 3rd inst. The lift will be constructed during the recess.

NAVAL CADETS' BUILDINGS AT OSBORNE.—Mr. Churchill, in a written reply to Mr. Booth, states that no temporary buildings for the accommodation of cadets at Osborne have been erected recently. The total cost of the buildings comprising the establishment generally has been about 197,000, of which sum about £100,000 was expended on buildings of a not very permanent nature.

Trade News.

WAGES MOVEMENTS.

NORTH WALES QUARRYMEN'S STRIKE SETTLED.—Work was resumed on Monday at the Penmaenmawr Quarries, after a two months' strike, the quarrymen receiving an advance of wages of from 3d. to 6d. per ton.

HUDDERSFIELD.—The dispute between the slaters and employers at Huddersfield has been settled, the men accepting an advance of a half-penny an hour, commencing this week, and a further similar advance in May next.

LONDON PLASTERERS' STRIKE SETTLED.—The strike of London plasterers, which commenced on Whit-Saturday, was brought to a close on Monday, when at a meeting between masters and men at Koh-i-noor House, Kingsway, an agreement was drawn up and signed by both parties. The men resumed work the next morning. Sir G. Askwith, of the Board of Trade, had worked assiduously to bring the parties together, and to his good offices the happy termination of the dispute is largely due. Though the men have not got all they asked for, they have gained substantial concessions, of which the following are the chief points: An increase of ½d. per hour; night-gang work to be complete in five nights; speeding-up of conciliation clause; an increase of 3s. per week on country money; no discrimination against any workman for having taken part in the dispute.

The death of Mr. Arthur Castings, architect, of 260, Goldhawk-road, Shepherd's Bush, occurred on the 17th ult. Mr. Castings was in his 59th year.

The Lower Engadine Electric Railway connecting St. Moritz with Schuls and Tarasp was inaugurated on Saturday. The line is to be continued towards the Tyrol, and will eventually constitute a main line from Chiavenna in Italy across the Engadine to Landeck, Austria.

The corporation of Chelmsford have appointed a special committee to report on the question of a site for the erection of a new town hall and municipal offices. The corporation have received the sanction of the Local Government Board to borrow £22 971 for building 106 additional working-class dwellings in Rainsford-lane.

Herr Haudenschild, architect, of Zurich, was fatally injured by the fall of an avalanche on the Brienzer Roth-horn on Monday afternoon, when descending with half-a-dozen friends to Sörenberg in a thick mist. Herr Haudenschild was caught in the fall, and although still alive when rescued, died shortly afterwards. The party had been warned not to descend, owing to the mist and the quantity of fresh snow which had fallen within a few days.

The thirteenth annual excursion of the members and friends of the Edinburgh, Leith, and District Building Trades Association took place on Friday to Whiting Bay, travelling via Ardrossan, and returning by Wemyss Bay. The party, numbering over 100, included Mr. William Forrest, J.P., president; Mr. James Crowe, Mr. D. A. Angus, vice-presidents; and the secretary, Mr. Thomas Ferguson, solicitor. Luncheon was served in the Whiting Bay Hotel.

Tenders will be opened on September 3 at the offices of the "Superintendencia da Defesa da Borracha, Ministerio da Agricultura, Industria e Commercio," Rio de Janeiro, for the erection of an immigrants' hostel at the entrance to Manáos Harbour. The upset price is put at 2,065,684 milreis (about £138,000), and a deposit of 20,000 milreis (about £1,330) will be required to qualify any tender. Tenderers must file certificates of competency with the authorities. Local representation is necessary.

Two important additions to the Lancashire and National Sea Training Homes at Liscard were inaugurated on Tuesday, one being the Sir Alfred Jones Memorial Home, and the other the Heath Harrison Technical Instruction Wing. The Sir Alfred Jones Memorial Home will provide accommodation for 125 boys, and has cost £5,000. The technical instruction building has been provided at an outlay of £2,500, and modelled on the lines of the Admiralty establishment at Shotley, East Suffolk. Mr. A. R. Keighley is the architect of both the new buildings.

Our Office Table.

Westminster Hall is still a mass of scaffolding. In the course of the repairing work which is now being undertaken, it has, unfortunately, been discovered that the state of the hammer beam oak roof is worse than was expected. So worm-eaten are the timbers that it has been deemed advisable to remove whole sections and replace them with fresh pieces of seasoned wood. The work of repair will occupy many months, and the hall will have to be closed to the public all through the summer. The roof was constructed during the last three years of the reign of Richard II., as part of the scheme designed by Master Henry de Yeveley, and is made of Irish oak, and not, as is often averred, of sweet chestnut a fable effectually disposed of by the late Mr. Thomas Blashill.

Francisco Ribalta's "Christ Bearing His Cross," which was painted in 1612 for the Convent at Zaragosa, as Céan Bermudez tells us, has been purchased by the Trustees and Director of the National Gallery, where it has lately been exhibited on loan by Captain Ford, the grandson of Richard Ford, author of the "Handbook for Spain." The canvas, which measures 84in. by 43½in., and has an arched head, was taken from the convent by the French early in the 19th century, and passed eventually into the Pescueta collection at Valentia, whence it was acquired by Richard Ford in September, 1831. The scene in the background represents the vision of St. Ignatius Lovola, to whom appears the Saviour bearing His Cross. Prior to its exhibition at the National Gallery the picture was shown at Burlington House in 1873, the exhibition of Spanish art held at the New Gallery in 1895, and at the National Loan Exhibition, held at the Grafton Galleries in 1909.

A report to the Liverpool housing committee shows that the chairman (Colonel G. Kyffin-Taylor, M.P.), the deputy-chairman (Mr. Austin Harford), and several of the corporation officials have had a recent interview with the trustees of the late W. R. Sutton, of carrying fame, who died, May 20, 1900, leaving nearly two millions sterling, for the purpose of acquiring sites and building thereon, in London and other populous places in England, dwellings for the use and occupation of the poor. The trustees have already carried out several important rehousing schemes in London, and have considered the question of extending their beneficent operations to provincial cities, including Liverpool, Manchester, Birmingham, Bristol, and Newcastle-on-Tyne. The trustees received the Liverpool deputation very favourably, and proposed themselves shortly to visit that city in order to inspect various sites which it is suggested that they should acquire. As a result of the visit, it is confidently anticipated that the housing committee soon will find their own work valuably supplemented.

A special meeting of Penzance Town Council to discuss a report on workmen's dwellings was held on Wednesday week, the mayor (Mr. A. K. Barnett) presiding. Tenders had been received for the erection of forty-two houses at the Weeths Fields, and the housing committee recommended that the council apply for sanction to borrow £9,300 for carrying out the work. The mayor moved the adoption of the report, when nine members voted for the amendment for referring the report back for further consideration, and nine for proceeding forthwith. The mayor declined to give a casting vote, and adjourned the meeting until Saturday, when the proposals of the housing committee were adopted by a majority of four, and will be submitted to the verdict of a Local Government Board inquiry. Obviously the approach to the site, which is only 8ft. 6in. in width, will have to be considerably widened if the scheme is to be carried out.

According to the *Exeter Flying Post*, on Saturday week the fine old parish church of Silverton, which has recently been thoroughly repaired and enlarged, was reconsecrated. The church is a stately edifice

in the Perpendicular style, and had suffered in its architectural character from various embellishments executed at a time when Gothic was quite out of fashion. There was in the chancel a high wainscoted reredos of the Ionic Order, creating a partial eclipse of the east window, chiefly erected, it would seem, to give effect to a little transparency of the word "Jehovah." A theatrical character was given to the whole by a quantity of red drapery, with tassels, cords, etc., represented on the nave east wall and by a gallery—the "Upexe" gallery, adjacent to the east end of the south aisle. . . The old carved screen extending across the church had been cut down, and a fanciful post and rail affair with green and gold pineapples substituted for it.

Members of the Greenwich Antiquarian Society and friends, numbering about eighty, on Saturday explored the underground passage, said to date from the time of Henry VI., between Greenwich Park and Blackheath, which leads to the top of Hyde Vale, having its entrance near Greenwich Hospital reservoir, Croomshill. Entrance to the passage is gained by an iron ladder; the arched passage is about 6ft. high, and just wide enough to permit two persons to pass. On the ground at each side are iron pipes formerly used to supply the reservoir with water, and stated to date from the time of Sir Christopher Wren. After leaving this passage the party explored another and smaller one near the Roman villa. Both passages are cut through the Thanet sands beneath the Blackheath gravel beds.

At the last meeting of the general committee of the Conservative Club, Liverpool, the following resolution was unanimously passed: "That the committee have learned with deep regret of the death of Colonel Francis Usher Holme, V.D., one of the original members of the club, and for some years a member of the committee. They desire to express their sincere sympathy with the relatives of the late Colonel Holme, and to place on record their very high appreciation of his services as the designer of the club, which is admittedly one of the finest club buildings in the country, and a monument to his great ability as an architect."

A discussion arose on the Ripon City Council on Monday night, with reference to the disposal of storm water on main roads, flooding having occurred in various parts of the city by the rapid running of rainwater off tar-painted and tar-macadam roads. The highways committee, after an interview with an official of the North Riding County Council, had suggested that the county council should provide a separate surface-water drain and a storm overflow in certain places. Alderman Thirlway deprecated too much cutting out of surface water from the sewers, as it helped to flush the sewers during the summer time. The mayor stated that the county council had the matter in hand, and he was anxious that it should be pushed forward as early as possible.

The seventy-fourth annual exhibition of the Royal Agricultural Society of England was opened on Tuesday at Bristol, and remains open until to-morrow. The exhibits are mainly devoted to implements and machinery. We draw attention to the attractive bandstand of ornamental ironwork, designed specially for the Society, and erected by Messrs. Parnall and Sons, Narrow Wine-street, Bristol. This, having served its purpose, is, we understand, for disposal on very advantageous terms. The same firm are specialists in all kinds of shop-fronts and fittings, and their exhibit at Stand 79 is well worth a visit.

The electric railless traction or trackless trolley system, which threatens to become in time as serious a rival of tramways as motor-'buses are, received the approval of a Select Committee of the House of Commons on Friday. The system is already working successfully in one or two places, and the scheme just sanctioned is for the establishment of a service of public vehicles propelled by electricity from overhead wires in the chain of Monmouthshire valleys which contain Brynmawr, Nantyglo, Blaina, Abertillery, Aberbeeg, and Llanhilleth, the last-mentioned place being only a few miles from Newport. While sanctioning the Bill, the Committee laid it down that the promoters must pay to the local authorities three-eighths of a penny for every mile run by the cars, excepting cheap cars for workmen. They must, in addition, pay a third of the cost of road reconstruction and maintenance made necessary by the project, must begin carrying it out within eighteen months of the passage of the Bill, and must complete it in twelve months.

The city council of Liverpool received, at their meeting on Wednesday, a report from Mr. Shelmerdine, the surveyor, on the suitability and cost of the Pumpfields Electricity Station and adjoining land for the purpose of an abattoir. The Pumpfields estate, now used for the purposes of a generating station and a health committee's stoneyard, contains about three and a half acres. As regards the generating station, which it is not proposed to disturb, the original capital account is approximately £190,000, excluding land. Mr. Shelmerdine states that the site would be too limited for an abattoir, but it could be increased to 7½ acres by purchasing properties on the north and south sides. To increase the site to this extent, by four acres would cost about £2 10s. per square yard, or £48,400, which, with the original capital amount of £190,000, plus £32,350 for the land, would make a total of £270,750, to which would have to be added the cost of adapting the site as an abattoir. Mr. Shelmerdine expresses the opinion that it would be undesirable to proceed further with the proposal.

The medal of the Société des Architectes Diplomés par le Gouvernement Français has recently been bestowed upon Mr. George McAneny, the Borough President of New York. In making the presentation speech, Mr. J. H. Freedlander, President of the American group, warmly praised Mr. McAneny for his work in connection with the proposed civic centre, his efforts in the restoration of the City Hall, his activity against out-of-door advertising signs and the wholesale removal, for which he is responsible, of architectural excrescences from many of New York's streets. He added that the borough president has demonstrated that public office and civic beauty are not incompatible, and that ugliness and economy are not synonymous.

Mr. William Paton, senior assistant in the city engineer's drawing office at Liverpool, has retired, after an active career, extending over fifty years, in the public service, first in the Royal Engineers as a superintendent of the Ordnance Survey Department, and the latter thirty-six years having been with the Corporation of Liverpool. Mr. Paton's duties in connection with Liverpool municipal authority commenced at the time when the question of a new and adequate water-supply for the city and environs was seriously exercising the attention of the council of the day and the public generally, the late Dr. C. F. Deacon, M.I.C.E., being the borough and water engineer at that date. Mr. Paton was selected and placed by Dr. Deacon in sole charge of the surveying staff engaged on the site of the present Lake Vyrnwy and its extensive watershed during the initial stages of the project, preparatory to application being made by the corporation for Parliamentary powers. Mr. Paton has been presented by his colleagues at the municipal offices with an illuminated address.

"Builders' Quantities," by Wm. Edgar Ballard, A.M.I.C.E., P.A.S.I. (London: Longmans, Green, and Co., 2s. 6d.), is a useful manual, suitable for students preparing to meet the requirements of the examiners in the City and Guilds of London Institute, and similar institutions. At the end of each chapter will be found actual examples set at the examinations, and the correct methods of dealing therewith.

"Painting and Decorating," by Walter J. Pearce (London: Charles Griffin and Co., Ltd., 12s. 6d.), is a fourth edition, revised and enlarged, of a useful manual. The chapters follow the sequence of the author's lectures at the Manchester Technical School for House Painting and Decoration, and the recipes and methods given have been personally tested. The [illegible] pages, and there are some [illegible] trations and a good index.

"Heating Systems," by [illegible] W. Ke[illegible] (Longmans, Green, and Co., 10s. 6d.), is an exhaustive review of the [illegible] systems of heating. We [illegible] more than twelve lines might have been devoted to electric heating, which is the ideal future system, and already practicable at no great extra cost, but we disagree with the author's dicta about natural ventilation on pp. 4 and 5 in his brief review of methods of ventilation. For the rest, we have nothing but praise. Special features are the [illegible] number of charts included, and the method adopted in sizing the pipes of different systems. The book is freely illustrated [illegible] where manufacturers' illustrations are permitted, no undue preferences are shown. Stress is laid on the economical and practical aspects of the question rather than on theoretical problems, and the busy architect and builder will appreciate the fact.

S. Pearson and Son, Ltd., the great contracting company, is becoming even better known for its operations in the oil industry, its interests in the Mexican fields through the Mexican Eagle Oil Company having now been supplemented through Lord Murray's activities by important concessions in Colombia and Ecuador. The Pearson company has a capital of £1,501,000 in 100,000 ordinary shares of £10 each, £5 paid, and 50,000 preference and 100 management shares of £10 each, fully paid. The whole of this capital is held by the directors and their friends, although the 5 per cent. debentures, of which the amount outstanding is £301,900, are on the market, and are quoted at 102½. Its president is Lord Cowdray, formerly Sir Weetman Pearson, [illegible] vice-president; while Lord Murray, although a comparatively recent addition to the board, ranks next among the directors. For many years past the ordinary shares have received 10 per cent. each year, while the comparatively few management shares have received £500 each, or 5,000 per cent.

The thirteenth ordinary general meeting of R. Waygood and Co., Ltd., was held last Friday at the Cannon-street Hotel, Cannon-street, E.C., Mr. Henry C. Walker presiding. The chairman, moving the adoption of the report, said at last year's meeting it was announced they were just completing the erection of a new factory for electrical work, and this had now been finished. The majority of their machines had now been rearranged and their factories reorganised, so that they were in a position to do more work under better conditions for their employees, and at less cost. Still further extensions were contemplated. The trading profit was less than last year, partly in consequence of the disorganisation during building operations, and partly because of the rise in the price of raw materials. The cliff lift at Southend-on-Sea was completed last August, and had been running continuously ever since, and the directors anticipated that it would show quite a satisfactory return on the outlay made. He detailed the orders for lifts acquired during the year, and said he was pleased to record the fact that they had secured a contract for thirty-two lifts, which were required in the new hotel being erected by the Strand Palace Hotel Co. in Regent-street. In addition to these they had fitted the mammoth liner Imperator with three of their passenger lifts, and they were also fitting three lifts to the Columbus. They wanted additional working capital, in order to meet the rapid development of the business, and they would, therefore, at once issue the remaining shares; but the shareholders would have the first opportunity of taking them up. The directors recommended a further dividend at the rate of 9 per cent. per annum, making 7 per cent. for the year on the ordinary shares. The report was unanimously adopted.

Mr. Frank L. Reynolds [illegible] appointed surveyor to the Barkston [illegible] District Council.

MEETINGS FOR THE ENSUING WEEK.

SATURDAY (To-morrow). — Northern Architectural Association. Visit to Walker, when the "Armstrong Yard" will be visited. Walker Station 2.25 p.m.

MONDAY. — Royal Institute of British Architects. Adjourned special general meeting, to resume consideration of Draft Revised Schedule of Professional Charges. 8 p.m.

WEDNESDAY. — Cricket-Match, R.I.B.A. v. A.A. Teams. A.A. Athletic Ground, Elstree. Train from St. Pancras, 10.8 a.m.

TO CORRESPONDENTS.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

It is particularly requested that all drawings and all communications respecting illustrations or literary matter, books for review, etc., should be addressed to the EDITOR of the BUILDING NEWS, Effingham House, 1, Arundel-street, Strand, W.C., and not to members of the staff by name. Delay is not infrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

*** Drawings of selected competition designs, important public and private buildings, details of old and new work, and good sketches are always welcome, and for such no charge is made for insertion. Of more commonplace subjects—small churches, chapels houses, etc.—we have usually far more sent than we can insert, but are glad to do so when space permits on mutually advantageous terms, which may be ascertained on application.

When favouring us with drawings or photographs, architects are asked kindly to state how long the building has been erected. It does neither them nor us much good to illustrate buildings which have been some time executed, except under special circumstances.

Cheques and Post-office Orders to be made payable to THE STRAND NEWSPAPER COMPANY, LIMITED, and crossed London County and Westminster Bank.

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Advertisements, not exceeding Thirty Words, inclusive of name and address, are inserted under the heading "Situations Wanted," *free of charge.*

Rates for Trade Advertisements on front page, and special and other positions, can be obtained on application to the Publisher.

Advertisements for the current week must reach the office not later than 5 p.m. on Thursday. Front-page advertisements and alterations or stop orders for serial advertisements must reach the office by Tuesday Morning to secure attention.

*** Replies to advertisements can be received at the Office, Effingham House, 1, Arundel-street, Strand, W.C., *free of charge.* If to be forwarded under cover to advertiser, an extra charge of Sixpence is made. (See Notice at head of "Situations.")

RECEIVED.—B. A. A.—F. and B.—F. R. N. C.—W. F. S. and Co., Ltd.—W. H. and Co.—B. I. and C.—D. Y. and Co.—E. and R., Ltd.—B. M. and Co., Ltd.—F. F. Co.—L. D. O.—E. and Son.—H. M.

J.—Yes.

R. A.—Rather belated. See p. 853 of our issue of June 20. 2. Yes.

CHIPSTEAD.—We should resist the claim, but be sure of your facts first, and be well advised.

MEDENHAM.—We know nothing of the firm. Much better go to one of those who appear in our "Directory" pages.

BUNGALEE.—Beaver Board should suit you. Send to Dept. C, 4, Southampton row, W.C., for "The House that Beaver Built."

MAN OF KENT.—If you want mechanical ventilation, get Catalogue "B 1061" from the Sturtevant Co., 147, Queen Victoria-street, E.C.

J. BARBER.—You will probably do better in a non-tariff Society, especially if you satisfy them that there is a minimum of risk. Write the London and Midland Insurance Co., Ltd., 39, New Broad-street, E.C., for their terms.

J. KEEN.—There is a varnish expressly manufactured for cases such as you mention where the front door is subject to bad weather. It is called "Portarie," and is manufactured by Robert Ingham Clark and Co., 6, Caxton House, Westminster. Write them for a quotation.

LATEST PRICES.

IRON.

Steel Joists, Belgian and German (ex steamer, London) per ton	£6	2	6	to	£6	5	0
Steel Joists, English	7	10	0	,,	7	12	6
Wrought-Iron Girder Plates	7	0	0	,,	7	5	0
Steel Girder Plates	7	2	6	,,	8	2	6
Bar Iron, good Staffs	6	5	0	,,	8	10	0
Do., Lowmoor, Flat, Round, or Square	20	0	0	,,	0	0	0
Do., Welsh	5	15	0	,,	5	17	0
Boiler Plates, Iron—							
South Staffs	8	0	0	,,	8	15	0
Best Snedshill	9	0	0	,,	9	10	0

Angles 10s., Tees 20s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £8 15s to £9.
Ditto galvanised, £14 to £15 10s. per ton.

Galvanised Corrugated Sheet Iron—

	No. 18 to 20. Per ton.	No. 22 to 24 Per ton.
6ft. to 8ft. long, inclusive of gauge	£13 0 0	£13 10 0
Best ditto	13 0 0	14 0 0

Wire Nails (Points de Paris)—

3 to 7	8	9	10	11	12	13	14	15	B.W.G
8/3	8 9	9/3	9/9	10/3	11/-	11/9	12/6	13/6	per cwt

	Per ton.				Per ton.		
Cast-Iron Columns	£7	10	0	to	£9	0	0
Cast-Iron Stanchions	7	10	0	,,	9	0	0
Rolled-Iron Fencing Wire	8	5	0	,,	8	10	0
Rolled-Steel Fencing Wire	7	5	0	,,	7	10	0
,, ,, Galvanised	8	15	0	,,	9	5	0
Cast-Iron Sash Weights	5	0	0	,,	5	5	0
Cut Floor Brads	9	15	0	,,	—		
Corrugated Iron, 24 gauge	16	0	0	,,	—		
Galvanised Wire Strand, 7 ply, 14 B.W.G.	14	5	0	,,	—		

B.B. Drawn Telegraph Wire, Galvanised—

0 to 8	9	10	11	12	B.W.G
£10 10s.	£10 15s.	£11 0s.	£11 5s.	£11 15s.	per ton

Cast-Iron Socket Pipes—							
3in. diameter	£6	2	6	to	£6	7	0
4in. to 6in.	6	0	0	,,	6	5	0
7in. to 24in. (all sizes)	5	7	6	,,	6	0	0

[Coated with composition, 5s. 0d. per ton extra, turned and bored joints, 5s. 0d. per ton extra.]

Pig Iron—	Per ton.
Cold Blast, Lilleshall	110s. 0d. to 117s. 6d.
Hot Blast, ditto	70s. 0d. ,, 75s. 0d.

Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—

Gas-Tubes	75 p.c
Water-Tubes	72½ ,,
Steam-Tubes	67½ ,,
Galvanised Gas-Tubes	65 ,,
Galvanised Water-Tubes	62½ ,,
Galvanised Steam-Tubes	57½ ,,

OTHER METALS.

Spelter, Silesian.....Per ton	£20	10	0	to	£21	0	0
Lead Water Pipe, Town	23	15	0	,,	—		
,, ,, Country	24	10	0	,,	—		
Lead Barrel Pipe, Town	24	15	0	,,	—		
,, ,, ,, Country	25	10	0	,,	—		
Lead Pipe, Tinned inside, Town	25	15	0	,,	—		
,, ,, ,, Country	26	10	0	,,	—		
Lead Pipe, Tinned inside and outside.....Town	28	5	0	,,	—		
,, ,, ,, ,, Country	29	0	0	,,	—		
Composition Gas-Pipe, Town	26	15	0	,,	—		
,, ,, Country	27	10	0	,,	—		
Lead Soil-pipe (up to 4½in.) Town	26	15	0	,,	—		
,, ,, ,, Country [Over 4½in. £1 per ton extra.]	27	10	0	,,	—		
Lead Shot, in 28lb. bags	24	15	0	,,	—		
Copper Sheets, sheathing & rods	80	0	0	,,	80	10	0
Copper, British Cake and Ingot	69	10	0	,,	70	0	0
Tin, English Ingots	204	10	0	,,	205	0	0
Do., Bars	205	10	0	,,	206	0	0
Pig Lead, in 1cwt. pigs (Town)	20	15	0	,,	—		
Sheet Lead, Town	23	5	0	,,	—		
,, ,, Country	24	0	0	,,	—		
Genuine White Lead	30	15	0	,,	—		
Refined Red Lead	25	0	0	,,	26	0	0
Sheet Zinc	30	0	0	,,	—		
Old Lead, against account	18	5	0	,,	—		
Tin .....per cwt.	11	10	0	,,	—		
Cut nails (per cwt. basis, ordinary brand	0	11	6	,,	—		

TIMBER.

CONSTRUCTIONAL.

Yellow Pine Deals, Quebec, per standard:— 1st quality	£38	0	0	to	£45	0	0
,, ,, ,, 2nd ,,	26	0	0	,,	32	0	0
,, ,, ,, 3rd ,,	16	0	0	,,	18	10	0
Spruce Deals: St. Johns	10	0	0	,,	11	10	0
,, ,, Miramichi	9	10	0	,,	10	10	0
,, Boards: Swag	11	0	0	,,	12	0	0
Red Deals: Archangel 1st quality	21	0	0	,,	21	0	0
,, ,, ,, 2nd ,,	16	0	0	,,	19	0	0
,, ,, ,, 3rd ,,	13	0	0	,,	11	0	0
,, ,, St. Petersburg - 1st quality	16	10	0	,,	18	0	0
,, ,, ,, 2nd ,,	14	10	0	,,	15	10	0
,, ,, Wyburg & Uleaborg	12	10	0	,,	15	0	0
,, Gefle, Gothenburg, and Stockholm	12	10	0	,,	17	0	0
White Deals: Crown	14	0	0	,,	15	10	0
,, ,, Seconds	11	10	0	,,	13	0	0
Flooring: White and Planed— 1st and 2nd quality mixed	10	15	0	,,	11	15	0
1st, 2nd, & 3rd quality mixed	10	5	0	,,	11	0	0
Red Planed, 1st quality	14	10	0	,,	17	0	0
Pitch Pine: Prime Deals and Boards	18	0	0	,,	23	0	0
Lignum Vitæ .....Per ton	7	0	0	,,	14	0	0

	Per cubic foot.						
Yellow Pine Logs (waney board)	0	5	0	,,	0	5	6
Pitch Pine Logs	0	3	0	,,	0	3	6
Birch, Quebec Logs	0	2	3	,,	0	2	9
Oak, Austrian Wainscot	0	7	0	,,	0	8	0
Mahogany: Gaboon	0	2	0	,,	0	2	3

FURNITURE AND HARDWOODS.

Teak: Burmese, per load, 50ft.	£20	0	0	to	£25	0	0
Teak: Java, per load, 50ft.	16	0	0	,,	21	0	0

Per cubic foot.

Oak Planks: U.S.A., imported	0	1	9	to	0	2	6
,, Boards ,, ,, Prm.	0	3	0	,,	0	3	6
,, ,, ,, ,, Mdm.	0	2	6	,,	0	2	9
Sequoia (Californian Redwood)	0	2	4	,,	0	3	6
Birch: Quebec logs	0	2	3	,,	0	2	9
,, ,, sawn planks	0	1	3	,,	0	2	0
Oak: Austrian Wainscot	0	7	0	,,	0	8	0
Walnut: Prime boards and planks	0	6	0	,,	0	6	6
Walnut: Mdm. ,, ,,	0	3	6	,,	0	4	6
Greenheart: Hewn logs	0	3	3	,,	0	4	0
Cedar: Cigar box	0	4	9	,,	0	5	6
Satin Walnut: Imp. sawn boards, prime	0	2	4	,,	0	2	9
Orham: Imp. sawn boards, prime	0	2	0	,,	0	2	3
Mahogany: St. Domingo, Cuba, and Honduras	0	6	0	,,	0	9	0
,, African, Assinee, &c.	0	5	0	,,	0	6	6
,, Lagos and Benin	0	4	6	,,	0	6	0
Sekondi and Cape Lopez	0	3	0	,,	0	4	0
,, Gaboon	0	2	0	,,	0	2	3
Satinwood: West Indian	0	10	0	,,	0	14	0
Rosewood..... Per ton	8	0	0	,,	12	0	0
Lignum Vitæ ,,	7	0	0	,,	14	0	0

STONE.*

Red Mansfield, in blocks.....per foot cube	£0	2	4	
Darley Dale, ditto ,,	0	2	3	
Red Corsebill, ditto ,,	0	2	2	
Closeburn Red Freestone, ditto ,,	0	2	0	
Ancaster, ditto ,,	0	1	10	
Greenshill, ditto ,,	0	1	10	
Chilmark, ditto (in truck at Nine Elms) ,,	0	1	10½	
Hard York, ditto ,,	0	2	10	
Ditto ditto 6in. sawn both sides, landings, random sizes.....per foot sup.	0	2	8	
Ditto ditto 3in. slab sawn two sides, random sizes ,,		1	3	

* All F.O.R. London.

Bath Stone, delivered on road waggons, Paddington Depot per foot cube	0	1	7½	
Ditto, ditto, Nine Elms Depot ,,	0	1	9½	
Beer Stone, delivered on rail at Seaton Station ,,	0	1	0	
Ditto, delivered at Nine Elms Station ,,	0	1	6	

Portland Stone, in random blocks of 20ft. average:—

	Brown Whit Bed. Per foot cube.			White Base Bed		
Delivered on road waggons at Paddington Depot, Nine Elms Depot, or Pimlico Wharf	£0	2	3	£0	2	4½

SLATES.

	in. in.	£	s.	d.	per 1,000 of 1,200 at r.stn
Blue Portmadoc	20×10	12	12	6	
,, ,,	16× 8	6	12	6	,, ,,
Blue Bangor	20×10	13	2	6	,, ,,
,, ,,	20×12	13	17	6	,, ,,
First quality	20×10	13	0	0	,, ,,
,, ,,	20×12	13	15	0	,, ,,
,, ,,	16× 8	7	5	0	,, ,,
Eureka unfading green	20×10	15	17	6	,, ,,
,, ,,	20×12	18	7	6	,, ,,
,, ,,	18×10	13	5	0	,, ,,
,, ,,	16× 8	10	5	0	,, ,,
Permanent green	20×10	11	12	6	,, ,,
,, ,,	18×10	9	12	6	,, ,,
,, ,,	16× 8	6	12	6	,,

BRICKS.

(All prices net.)

First Hard Stocks	£1	15	0	per 1,000 alongside, in	
Second Hard Stocks	1	11	0	,, ,,	(river
Mild Stocks	1	9	0	,, ,,	,,
Picked Stocks for Facings	2	5	0	,,	elivered at rly. stn.
Flettons	1	6	0	,, ,,	,,
Pressed Wire Cuts	1	18	0	,, ,,	,,
Red Wire Cuts	1	14	0	,, ,,	,,
Best Fareham Red	3	12	0	,, ,,	,,
Best Red Pressed Ruabon Facing	5	0	0	,, ,,	,,
Best Blue Pressed Staffordshire	3	15	0	,, ,,	,,
Ditto Bullnose	4	0	0	,, ,,	,,
Best Stourbridge Firebricks	3	14	0	,, ,,	,,
2½in. Best Red Accrington Plastic Facing Bricks	4	10	6	,,	Net, delivered in full truck loads in London.

"Accrington Best Red Plastic Facing Bricks	per 1,000 £2 10 0
3½" ditto Second Best Plastic ditto	2 2 6
Ditto Ordinary Second Bricks	1 11 3
Ditto Plastic Engineering Bricks	1 17 6
Sewer Arch Brick not more than 3½" in thickest part	2 0 0
3½" Chimney Bricks fit for outside work	2 6 0
3½" ditto ditto through and through	2 0 0
3½" Beaded, Ovolo and Bevel Jambs; Octagons; 2½" and 5" radius Bullnoses; Stock patterns	3 7 6
Accrington Air Bricks, 9"×2 course deep, each	0 0 6
Ditto ditto 9"×1 course ,,	0 0 3

Accrington Camber Arches:—

3 course deep, 4½" soffit, per foot opening						0	1 3
4	ditto	4½"	ditto	ditto	ditto	0	1 8
5	ditto	4½"	ditto	ditto	ditto	0	2 1
6	ditto	4½"	ditto	ditto	ditto	0	2 6
3	ditto	9"	ditto	ditto	ditto	0	2 1
4	ditto	9"	ditto	ditto	ditto	0	2 11
5	ditto	9"	ditto	ditto	ditto	0	3 9
6	ditto	9"	ditto	ditto	ditto	0	4 6

Net free on rail or free on boat at works.

GLAZED BRICKS.

HARD GLAZES, (PER 1,000.)

White, Ivory, and Salt Glazed. Best.	Seconds.	Buff, Cream, & Bronze. Best.	Other Colours.	Second Colours.
Stretchers—				
£12 7 6	£10 17 6	£13 17 6	£17 17 6	£13 7 6
Headers				
11 17 6	10 7 6	13 7 6	17 7 6	11 17 6
Quoins, Bullnose, and 4½in. Flats—				
15 17 6	14 17 6	17 17 6	21 7 6	15 17 6
Double Stretchers—				
17 17 6	16 7 6	20 17 6	24 7 6	17 17 6
Double Headers—				
14 17 6	13 7 6	17 17 6	21 7 6	14 17 6
One side and two ends, square—				
18 17 6	17 7 6	21 17 6	26 7 6	18 17 6
Two sides and one end, square—				
19 17 6	18 7 6	22 17 6	26 17 6	19 17 6
Splays and Squints—				
17 7 6	15 17 6	21 17 6	24 17 6	17 7
Plinth and Hollow Bricks. Stretchers and Headers—				
5d. each	4d. each	6d. each	6d. each	5d. each
Double Bullnose, Round Ends, Bullnose Stops—				
5d. each	4d. each	6d. each	6d. each	5d. each
Rounded Internal Angles—				
4d. each	3d. each	5d. each	5d. each	4d. each

MOULDED BRICKS.

Stretchers and Headers—				
8d. each	8d. each	8d. each	8d. each	8d. each
Internal and External Angles—				
1/2 each	1/2 each	1/2 each	1/2 each	1/2 each
Cill Bullnose, Stretchers and Headers—				
5d. each	4d. each	6d. each	6d. each	5d. each

Majolica or Soft Glazed Stretchers and Headers ... ... Per 1,000 £22 17 6

" " " Quoins and Bullnose... 27 17 6

Compass bricks, circular and arch bricks of single radius £6 per 1,000 over above list for their respective kinds and colours } Not exceeding 9in. by 4½in.

Camber arch bricks, any kind or colour, 1s. 2d. each ... ... } by 2½in.

Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.

* These prices are carriage paid in full truck loads to London Stations.

	s.	d.	
Thames Sand	7	6	per yard, delivered
Pit Sand	7	0	" "
Thames Ballast	6	0	" "

	s.	d.		s.	d.	Per ton,
Best Portland Cement	36	0	to	41	0	delivered
Ground Blue Lias Lime	21	0	per ton delivered.			

Exclusive of charge for sacks.

	s.	d.		s.	d.	Per yard,
Grey Stone Lime	13	6	to	14	0	delivered

Stourbridge Fireclay in sacks 27s. 0d. per ton at railway station.

TILES.

	s.	d.	Dlvrd. at
Plain red roofing tiles	42	0	per 1000 ry. stn
Hip and Valley tiles	3	7	per doz. " "
Broseley tiles	50	0	per 1000 " "
Ornamental tiles	52	6	" " "
Hip and Valley tiles	4	0	per doz. " "
Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000 " "
Ornamental do.	60	0	" " "
Hip tiles	4	0	per doz. " "
Valley tiles	3	0	" " "
Selected "Perfecta" roofing tiles:—Plain tiles (Peake's)	46	0	per 1000 " "
Ornamental do.	48	6	" " "
Hip tiles	3	10½	per doz. " "
Valley tiles	3	4½	" " "
"Rosemary" brand plain tiles	48	0	per 1000 " "
Ornamental tiles	50	0	" " "
Hip tiles	4	0	per doz. " "
Valley tiles	3	8	" " "
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 " "
Hand-made sand-faced	45	0	" " "
Hip tiles	4	0	per doz. " "
Valley tiles	3	6	" " "
Hartshill" brand plain tiles, sand-faced	50	0	per 1000 " "
Pressed	47	6	" " "
Ornamental do.	50	0	" " "
Hip tiles	4	0	per doz. " "
alley tiles	3	6	" "

OILS.

Rapeseed, English pale, per tun	£28	15	0	to £29	5	0
Do., brown	26	15	0	" 27	5	0
Cottonseed, refined	29	0	0	" 30	0	0
Olive, Spanish	39	10	0	" 40	0	0
Seal, pale	21	0	0	" 21	10	0
Cocoanut, Cochin	46	0	0	" 46	10	0
Do., Ceylon	42	10	0	" 43	0	0
Do., Mauritius	42	10	0	" 43	0	0
Palm, Lagos	32	5	0	" 33	5	0
Do. Nut Kernel	35	0	0	" 35	10	0
Oleine	17	5	0	" 19	5	0
Sperm	30	0	0	" 31	0	0
Lubricating U.S. per gal	0	7	0	" 0	8	0
Petroleum refined	0	0	6½	" 0	0	6½
Tar, Stockholm per barrel	1	6	0	" 1	10	0
Do., Archangel	0	19	6	" 1	0	0
Linseed Oil per gal.	0	2	4	"	—	
Baltic Oil	0	2	7	"	—	
Turpentine	0	2	5½	"	—	
Putty (Genuine Linseed Oil) per cwt.	0	9	0	"	—	
Pure Linseed Oil "Stority" Brand	0	10	0	"	—	

GLASS (IN CRATES).

English Sheet Glass:	15oz.	21oz.	26oz.	32oz
Fourths	2d. ...	3d. ...	3½d. ...	4½d.
Thirds	2½d. ...	3½d. ...	4½d. ...	5½d.
Fluted Sheet	2½d. ...	3½d. ...	6½d. ...	7d.
Hartley's English Rolled Plate:	¼in.	5/16in.	⅜in.	
	2½d. ...	2½d. ...	3d.	
Figured Rolled and Repoussine	White. 3½d. ...	Tinted 5d.		

VARNISHES, &c.

	Per gallon.
Fine Pale Oak Varnish	£0 8 0
Pale Copal Oak	0 10 0
Superfine Pale Elastic Oak	0 13 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard drying Oak, for seats of churches	0 14 0
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 4 0
Eggshell Flatting Varnish	0 18 9
White Copal Enamel	1 4 0
Extra Pale Paper	0 12 9
Best Japan Gold Size	0 10 9
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 0

TRADE NOTES.

The telephone number of Messrs. Wills, Ltd., 151, Cannon-street, has been changed to City 1323 three lines.

Bayles' latest patent "air-pump" ventilators have been employed at St. John's Presbyterian Church, Warrington.

The Commercial Motor Vehicle Exhibition organised by the Society of Motor Manufacturers and Traders, Ltd., will open at Olympia on July 18, and remain open until the 26th instant.

Mr. O. P. Milne, F.R.I.B.A., architect, has removed from 16, Great James-street, Bedford-row, W.C., to more convenient premises at 3, Gower-street, Bedford-square, W.C., and since June 30 that has been his address. His telephone No. is now Regent 2818.

One of the largest orders ever placed for a cement waterproofing material has been received by Kerner-Greenwood and Co., Kings Lynn, for their patent powder Pudlo. It is for the new reservoir in Winnipeg, and over forty-four tons of Pudlo will be used.

Owing to the lease of their premises having expired, Messrs. Charles Barker and Sons, one of the oldest firms of advertising agents, have removed from Birchin-lane, where they have been for 60 years of the 100 that they have been established, to White Lion-court, Cornhill. Their telephone number remains as before, Avenue 1242.

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A Client in the West of England takes £133 out of one transaction on an outlay of only £50.

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Hardwoods,

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WM. OLIVER & SONS, Ltd.,
120, Bunhill Row, London, E.C.

TENDERS.

. Correspondents would in all cases oblige by giving the addresses of the parties tendering—as well as those of the accepted tender—it adds to the value of the information.

BISHOP AUCKLAND.—For the demolition and reconstruction of 87 and 88, Newgate-street, Bishop Auckland, for the Society of Friends. Mr. M. C. Burrell, 87, Newgate-street, Bishop Auckland, architect:—

Hudson, W.	£1 [illegible] 17 [illegible]
Pearson, T. Spennymoor	[illegible] 0 0
Blackett, W., and Son	978 15 11
Bell, G. H.	[illegible]
Earnshaw, E. A., Darlington ...	926 8 7
Manners, T., Peel-street accepted	[illegible] 0 0
Douglass, J. T., and Son, Close House	[illegible]

Rest of Bishop Auckland.

BLACKPOOL.—For the erection of a Sunday-school, for the Raikes parade Wesleyan Church Trustees:—

Dryland and Preston (accepted	£5,200 0 0

FRIERN BARNET, MIDDLESEX.—For the erection of a new council school at Holly Park, for the Middlesex County Council. Mr. H. G. Crothall, F.R.I.B.A., architect to the education committee:—

Willmott, J., and Son	£9,050 0 0
Neal, G.	8,972 0 0
Lawrence, W., and Son	8,742 0 0
Hanson, A. and B.	8,739 0 0
Renshaw, W. J. ...	8,737 0 0
Porter, A.	8,734 0 0
Dickens, W. J.	8,680 0 0
Monk, A.	8,586 0 0
Knight, H., and Son	8,521 0 0
Fairhead, A., and Son	8,484 0 0
Lacey, W.	8,397 0 0
Mattock Bros.	8,333 0 0

* Recommended for acceptance.

HINCKLEY.—For erecting twelve workmen's dwellings, for the urban district council. Mr. E. H. Crump, A.M.I.C.E., Hinckley, architect:—

Crawley, W. H., Doncaster	£2,795 0 0
Flavell, W.	2,132 0 0
Bloxham, E.	2,118 0 0
Mason, J.	2,058 0 0
Garner, T.	2,031 0 0
Greaves, G. ...	1,998 0 0
Littler, W. H., Trinity-lane*	1,988 0 0

* Accepted. Rest of Hinckley.

KENSINGTON.—For pointing, &c., to ordinary, Marloes-road, for the guardians. Mr. W. R. Stephens, Marloes-road, Kensington, W., clerk:—

Gallagher, P. P., and Son, Elgin-street, Northampton	£3,681 [illegible]
Cooper, W. H., Marloes-road, W.	2,631 0 0
Beyton, C., and Co., Prideaux-road, Clapham, S.W.	2,567 0 0
Twinn, C. J., Station-road, Wealdstone	2,441 0 0
The Patent Metallic and Liquid Co., Ringcroft-street, Holloway	2,392 0 0
Markham and Markham, Essex-road, N.	2,287 0 0
Morley, F., Mare Works, Paddington, W.	1,948 0 0
Hogg, W., and Son, St. Martin-street, Liverpool-road	1,498 18 [illegible]

* Recommended for acceptance. † Withdrawn.

KENT.—For erecting standard toolshed for gardening classes, for the Kent Education Committee. Mr. Wilfrid H. Robinson, M.S.A., architect:—

Priest, J., and Son, Castle Iron-works, Bristol	£10 [illegible] 0
Simmons, W. H., Wrotham, Kent	10 0 0
Smith, F., and Co., Carpenter's-road, Stratford, E.	10 0 0
Milton Bros., Stone-street, Gravesend	[illegible]
Hattee, W. J., Putney Bridge-road, S.W.	9 0 0
Johnson, G., and Son, Faversham, Kent	8 0 0
Laurance, Seager, Sittingbourne, Kent	[illegible]
Clark, G. A., and Co., Victoria-street, S.W.	7 15 0
Wood, J., Hunter-road, Willesborough	[illegible]
Gwinnett, F. S., Wellesley-road, Ashford, Kent	[illegible]
Burrows, W. J., Hedges-street, Maidstone	6 15 0
Dixon, H., Meat-road, Headcorn	6 10 0
Hawthorn, E. B., and Co., London Works, Reading	[illegible]
Brisley and Ludyard, Bearsted, Kent	[illegible]
Brooks, F. H. C., Hemeleigh, Staplehurst	[illegible]
Chaplain, A. F., Ulcombe, Kent	[illegible]

For supplying, delivering, and fixing up any part of Kent, not less than six at a time:—

Wood, J., and Son, Boughton, Monchelsea	[illegible]

For supplying, also delivering carriage free to any station in Kent, but not erected:—

Boulton and Paul, Ltd., Norwich	[illegible]

Recommended for acceptance.

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RECOMMEND
TILO-LEUM
which gives the picturesque effect of an old-world red-tiled floor at one quarter the cost



Soft and resilient to the tread and extremely durable. Fixed (in London) at 4/- a square yd
A Sample (18 inches square) carriage free
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LLANSHAMLET.—For building a wall on the recreation ground, for the parish council :—

Rosser, D. W.	£116 10 0
Jones and Owen (accepted) ...	89 0 0

LLANSHAMLET.—For the erection of a wall at Bonymaen, for the parish council :—

Leyshon, J. (accepted)	£150 0 0
Howells	150 0 0

LONDON.—For erecting external iron emergency staircases at the Bolingbroke-road, Battersea, Rutland-street, Stepney, and Merton-road, Wandsworth, council schools, for the London Education Committee. Accepted tenders :—

Bolingbroke-road :—

The Cadogan Ironworks	£111 10 0

Rutland-street :—

Carron Company	£16 12 0

Merton-road :—

The Cadogan Ironworks	£82 0 0

LONDON.—For the supply, &c., of high and low-tension electric cables required in connection with the construction or reconstruction of further portions of the London County Council's tramways, and also for maintenance purposes during the current financial year :—

British Insulated and Helsby Cables, Ltd., Lancashire ...	£27,837 11 9
Glover, W. T., and Co., Ltd., Manchester	27,201 - 4
Callender's Cable and Construction Co., Ltd., Hamilton House, E.C.	26,941 18 2
Henley's, W. T., Telegraph Works Co., Ltd., Blomfield-street, E.C.	26,187 10 3
Siemens Bros. and Co., Ltd., Kent	26,169 0 11
Johnson and Phillips, Ltd., Kent	26,018 3 5
Western Electric Co., Ltd., North Woolwich, E.*	25,400 16 8

Estimate of the chief officer of tramways, £24,000.
* Recommended for acceptance.

MAIDSTONE.—For heating the corridor at the baths, for the town council :—

Buckley and Co. (accepted) ...	£78 15 0

SOUTHMOLTON.—For the erection of 10 artisans' dwellings, for the corporation :—

Woolway and Co., Barnstaple ...	£1,937 0 0
Small and Co, Taunton	1,927 0 0
P. Govier, Southmolton	1,892 19 3
Sanders, W., & Son, Southmolton	1,855 1 10

* Accepted.

NEWTON ABBOT.—For the erection of a new secondary school for 208 pupils at Newton Abbot, for the Devon County Education Authority. Mr. Percy Norris, 1, Richmond-road, Exeter, county education architect. Quantities by S. W. Haughton, 41, George-street, Plymouth :—

Parker Bros., Newton Abbot ...	£11,763 0 0
Debnam, A. R., Plymouth ...	11,518 0 0
Lapthorn & Co., Plymouth ...	11,500 0 0
Bovey, E. P., and Son, Torquay	11,093 2 2
Zealley, F. J., and Son, Newton Abbot	10,936 19 6
Blake, W. E., Ltd., Plymouth ...	10,827 0 0
Westcott, Austin, and White, Exeter	10,621 4 9
Jackman, H. C., Torquay ...	10,461 4 10
Setter, G., and Son, Exeter ...	10,297 18 3
Turpin, G. B., Plymouth ...	10,281 10 0
Mills, H., Newton Abbot	10,200 0 0
Pollard, H. W., and Son, Bridgwater	10,165 3 6
Wakeham Bros., Plymouth ...	9,987 14 9
Roberts, S., Ltd., Plymouth ...	9,985 1 6
Pratt, N., and Sons, Clyst St. Mary	9,916 8 3
Taylor, W. H., Teignmouth ...	9,829 7 8
Badcock, F. J., Ashburton...	9,824 13 2
Pollard, G., and Co., Ltd., Taunton (accepted)	9,225 11 10

STEPNEY, E.—For installing low-pressure hot-water heating apparatus at the Rutland-street school, Stepney, for the London Education Committee :—

Arding and Dyne, Southwark-rd.	£997 0 0
Palowkar & Sons, Queen-st., E.C.	991 0 0
Cannon and Hefford, Peckham ...	909 0 0
Christie, J. C., Aldgate	886 - 0
Cannon, W. G., & Sons, London-rd.	848 0 0
Yetton, J., & Co., Ltd., Limehouse	845 0 0
Pearson, R. H. and J., Ltd., 145, High-street, Notting Hill* ...	818 0 0

Architect's estimate, £888.
* Recommended for acceptance.

STOURBRIDGE.—For the erection of a ferro-concrete bridge, for the urban district council. Mr. F. Woodward, Town Hall, Stourbridge, surveyor. Quantities by the surveyor :—

Hobrough and Co., Southgate-st., Gloucester (accepted)	£312 0 0

TRAPP.—For water-supply works at Trapp, for the Llandilo Rural District Council :—

John, W., Ammanford (accepted)	£130 0 0

SOUTHAMPTON.—For laying storm-water drain and executing other road improvement works in Highfield-lane, for the corporation :—

Nichol, J.	£2,048 0 0
Osman, F., and Co.	1,948 0 0
Douglas, J. (accepted)	1,866 0 0

All of Southampton.

SOUTHAMPTON.—For executing road-paving works in East-street, for the corporation :—

Osman, F., and Co., Southampton	£1,647 5 0
London Asphalte Co., Ltd. ...	1,601 5 0
Douglas, J., Southampton* ...	1,567 0 0

* Accepted.

TROWBRIDGE.—For the conversion of storm-sewage filters to stand-by tanks, alterations, and additions to settling tanks, and the erection of sewage-pumping machinery, for the urban district council. Mr. H. G. Nicholson-Lailey, surveyor :—

Wort and Way, Salisbury	£4,100 0 0
Long, A. W., Bradford-on-Avon ..	4,064 0 0
Shardlow, J., Leicester	4,050 0 0
Chivers and Sons, Devizes... ...	3,998 0 0
Ireland, E., Bath	3,925 0 0
Small, F. and E., Taunton ...	3,903 0 0
Pollard, G., & Co., Ltd., Taunton	3,857 0 0
Johnson and Langley, Leicester ...	3,797 0 0
Riley, J., Cheltenham	3,715 0 0
Ford, J., London	3,385 0 0
Islay, H., and Co., Trowbridge* ...	3,292 0 0

* Accepted.

WESTMINSTER.—For the provision of a messroom, at the Westminster gas-meter testing office, for the London County Council :—

	A.	B.
Garrett, J., & Son, Balham Hill...	£376 0 0	£371 0 0
Bowyer, J. & C., Ltd., Upper Norwood, S.E.	250 0 0	247 10 0
Triggs & Co., Clapham, S.W. ...	210 0 0	208 10 0
Roberts, A., and Co., Ltd., Kensington, S.W....	194 10 0	192 10 0
Marsland, J., and Sons, York-st., Walworth, S.E.	194 0 0	191 10 0

A. If work carried out according to full specification.
B. If stock bricks are used.
* Recommended for acceptance.

WILTS.—For annual repairs to schools, for the county council. Mr. J. George Powell, Trowbridge, county surveyor. Accepted tenders :—

Atworth	Beaven and Son, Bradford-on-A.
Bromham	Haslem and Son, Devizes.
Bremhill	Sutton and Son, Calne.
Brinkworth	Clifford, T., Brinkworth.
Chippenham—	
Ivy-lane	Moody & Barstead, Chippenham.
Westmead, Mixed	Cowen & Stevens, Chippenham.
Ditto Infants	" " "
Corsham P. and I.....	Skull, A., Corsham.
Pickwick	" "
Neston	" "
Methuen.....	Eastmond, J., Corsham.
Downton	Jenkins, C., Salisbury.
Donhead—St. Mary ...	Biddescombe and Co., Ludwell.
Ludwell	" " "
Dilton Marsh	Holdoway & Cockell, Westbury.
Edington and East Coulston	" " "
Great Cheverill	Smith, H., Great Cheverill.
Highworth—Infants ...	Kilminster, J., Stratton.
Mixed	" "
Luckington	Sherborne & Sons, Luckington.
Milton Lilbourne	Spackman, H., Milton Lilb'rne.
Pewsey—Mixed	Howse, E., Pewsey.
Purton	James, J., Purton.
Rodbourne Cheney.....	Inge and Son, Swindon.
Rod Cheney Haydon...	" "
Ramsbury—Mixed.....	Hawkins, and Co., Ogbourne.
Ramsbury Axford	" " "
Upper Stratton—Boys'	Norman, J. G., Swindon.
Infants'	Inge and Son, Swindon.
Girls'	Norman, J. G., Swindon.
Lower Stratton—	
Infants'.....	Dymond and Son, Swindon.
Stratton St. Margaret Mixed	Norman, J. G., Swindon.
Shalbourne Oxenwood	Greenwood, H., Hungerford.
Trowbridge Newtown,	Lindzey and Son, Trowbridge.
Wanborough	Payne, M., Wanborough.
Wroughton—Girls' ...	Kilminster, J., Stratton.
Infants'	Hawkins and Co., Ogbourne.
Wootton Bassett.....	Trow & Sons, Wootton Bassett.
Westwood with Iford...	Brewer, W. G., Trowbridge.
Malmesbury—	
Secondary School .	Skull, A., Corsham.
Trowbridge Adcroft—	
Girls'	Lindzey and Son, Trowbridge.

WOOLWICH, S.E.—For cooking apparatus at Avery-hill Training College Hostels, for the London County Council :—

Deane, E., and Beale, Ltd., Monument-street	668 10 0
Yetton, J., & Co., Ltd., Limehouse	650 0 0
Pearson, R. H. and J., Ltd., Notting-hill-gate	607 0 0
Carron Co., Upper Thames-street	600 0 0
Cannon and Hefford, Peckham ...	600 0 0
Brightside Foundry & Engineering Co., Ltd., Victoria-street... ...	597 0 0
Wilson & Smith, Ltd., West Strand	592 15 0
Falkirk Iron Co., Ltd., Kingsway	577 17 6
Wright, G., Ltd., Queen Victoria-st.	580 0 0
McDowall, Stevens, and Co., Ltd., Upper Thames-street	555 1 0
Knight, T. S., and Sons, Great Portland-street	545 0 0
May, J. and F., Lincoln's Inn-fields	539 0 0
Cannon, W. G., and Sons, Ltd., Southwark*	537 0 0

Architect's estimate, £600.
* Accepted.

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THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House, Strand, W.C.

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OUR ILLUSTRATIONS.

Wallingford Court, Berkshire. View and plans. Messrs. Detmar Blow, F.R.I.B.A., and F. [illegible], Architects.

Department of Justice Building, Washington, U.S.A. Plans, elevations, and [illegible] the Late Bernard Barber, Architect.

House at King Wood, Surrey. Plans and Details. Mr. Ernest Newton, A.R.A., F.R.I.B.A., Architect.

The Eton Clubs, Hackney Wick. View and Plans. Mr. H. S. Goodhart Rendel, Architect.

High School, Motherwell, Scotland. Selected Design. Plans, elevations, and section. Mr. S. B. [illegible], F.R.I.B.A., Architect.

QUANTITIES.

The quantity surveyor is essentially a modern product, and it is doubtful if such a gentleman was known to the building world, even in a rudimentary state of development, before the beginning of the 18th century. The architect, as he is known nowadays, is also a recent development, for about the same time the whole United Kingdom contained not more than twenty-five, and it was not until about 1720 that architects were employed to design and superintend buildings, as well as to arrange the various tradesmen's accounts for the work. There was no general contractor then, as there is now, for it never occurred to the building public to entrust their work—so varied in character—to the care of any one workman. At present we are concerned about the evolution of the surveyor; but as his development was to some extent contemporaneous with the evolution of the general contractor and the modern architect, they must necessarily be considered together.

First, then, the old plan of building was to entrust master workmen with the execution of the work. Master masons did the stonework, master carpenters the carpentry, master smiths the ironwork, and so on, each master being distinct in his own trade, and always so employed. It is evident that under this system each master workman was responsible not only for the goodness of the material used by him, and for the proper execution of the work, but also for the accuracy and honesty of his charges—for there was no competitive tendering for work in those days. When buildings were completed, they were measured up by the architect and his assistants, who fixed a price on the work, and out of this method of valuing building-work our modern practice of measuring grew; for it was necessary that the builder should check the architect's figures, and to do this he employed a measurer, who dealt only with the quantity of material used, and not with the value of the work, the architect's decision in that matter being final.

We have it on good authority that the first quantity surveyor or "measurer," as he was called then—was Mr. Hele, a gentleman who flourished between 1760 and 1770, doing a remarkably good business in London, and subsequently in its environs. This gentleman discovered that a refined method of measuring and describing work in detail rather sent up its apparent value—a fact he was not slow in communicating to his employers, and one not quite unknown to quantity surveyors of the present day. When builders discovered the value of the measurers' operations in this respect, the demand for their services was great, and the profession grew and multiplied, so that "surveyors," as they came to be called, were engaged on every work, and every dispute in law, and out of it, to bolster up the most absurd and excessive charges for work done by their employers. Though their work was dry, they had a jolly time of it, for they usually sat in public-houses to arrange their differences, and it may be taken for granted that they did not fail to avail themselves of the stimulating refreshments necessary to the equitable adjustment of the accounts referred to them. An old writer says that this new creation of professionals—offshoots from the architectural practitioners—brought the profession into bad repute, and this was strengthened by different grades of builders assuming the cognomen of "surveyor," which was usually applied to architects only.

It is satisfactory to learn that about the beginning of the 19th century the tares were weeded out, and a new race of surveyors appeared, who were liberally educated, although it is to be regretted that they did not keep to surveying; for they, in the course of their professional pursuits, displayed great skill in combining quantity-taking with the theory and practice of architectural composition, "improved by foreign research." At first the changes from dealing with the trades separately to collectively, under the general contractor, set the measuring business back; but it did not become extinct, for the newly-found general builder had to get help in making out his estimates, and he naturally employed the surveyor in this work, and for the more important one of making out bills of extras for work beyond the contract which were necessitated by errors of judgment on the part of the architect, leading to great inconvenience and perplexity on the part of the employer. That, with ever-recurring experience of irregularities in building matters, these should still be perpetrated with impunity is marvellous, and can only be accounted for on the supposition that as each generation dies out, some of its dearly-bought experience dies with it, leaving the new-comers to find out for themselves what heredity fails to endow them with.

When the profession of building surveying was in course of development—that is to say, about one hundred years ago—building committees decided on the respective merits of competition designs by the estimates furnished with them; hence, those accompanied by a true statement of cost were rejected for others of inferior merit which were accompanied by estimates purposely meant to deceive—and this practice is not unknown at the present day. When a man goes into a shop, he asks, and obtains, the price of any article exposed for sale. This entrenches in no way on the shopkeeper's time, or puts him to expense; and so the majority of people think that an architect or builder can give them the cost of a building in the same offhand manner, not knowing, apparently, that the preparation of a reliable estimate is the result of a patient and laborious occupation on the part of a trained, skilled man. During the past month we have been consulted by a committee about the erection of an important building, the size of which they had not decided on, nor the materials of which it was to be built. Each member of the committee differed from the others on these points. Yet they were surprised that we could not tell them the cost of this imaginary structure, though they were business men and merchants, and should have known better. The anxiety of an employer to know the cost of his proposed building is natural, and that no doubt blinds him to the fact that an architect does not profess to work miracles—which he must do to tell the cost of a building which exists only in a nebulous way in other men's minds.

We are unable, and so is any architect, to say what a building will cost from a mere description, or even an inspection, of the drawings. We must have quantities, and price them, and we make it a rule never to give haphazard guesses at the value of building-work. If this practice were universally adopted, there would be less friction ultimately between employer and architect when the actual cost of the work is ascertained.

The development of the modern architect synchronised, as we have said, with that of the surveyor, and his old-time representative was in no way like him. Down to the time of the eighth Henry, churches, castles, and mansions were *invented* and built by master workmen. Then a change came, and "surveyors" were appointed to *design* and erect public buildings for the Government of the day, and this custom was extended to important private buildings gradually. As everyone knows, St. Paul's Cathedral was designed by Sir Christopher Wren. He was officially known, not as the architect of that building, not as the "surveyor," and his salary was £200 a year

what an ordinary clerk of works would get at the present day. Though Wren was the surveyor, we hear nothing of any quantities taken off by him, and that work was evidently not specialised at the time, so that a surveyor's duties did not include quantity-taking. The system of paying an architect by percentage did not become common until about 1720, and then this scale of remuneration included for duties of every nature, from the preliminary drawings to certifying the accounts of the various tradesmen engaged in the work.

The master workman of all the centuries down to the 16th disappeared gradually, merging into the modern architect and the modern builder. The measurer became a necessity for the latter, and he in his turn became the quantity surveyor. When, therefore, architects, surveyors, and builders are now spoken of, it should be remembered that there were no professional men or tradesmen with corresponding duties in olden times. It has been acknowledged for nearly a century that it is unfair to ask a contractor to spend his time tendering for a building when he has to prepare his own quantities; hence the present practice is to furnish him with detailed bills of all the various artificers' work, and ask him to price them out. This is a step in advance of the old method; but justice requires that the builder should be paid for his time pricing the quantities when the work is of an extensive nature. Tenders are obtained from builders in competition to enable an employer to get his work done at the lowest price. Why, then, should the unsuccessful men be asked to give their time and skill for nothing, in order to enable him to do this with a certainty? In some architectural competitions all the competitors receive payment for their services. Why should not builders be paid in the same way? An extension of this principle to all such competitions would have one good effect: it would curtail the list of builders tendering, and it is not at all likely that this list would include any of doubtful reputation, morally or financially. We have often been surprised and ashamed at the callousness of clients in obtaining tenders from builders, and then setting them aside without even thanking those who prepared them. This arises wholly from the fact that the public generally have an idea that architects and surveyors can make estimates without any loss of time or taking trouble in any way. When an important building is to be erected, half a dozen builders should be invited to tender for the work; they should be furnished with quantities, and paid for their time occupied in pricing them when they submit bona-fide tenders for the work. Builders' estimates and architects' preliminary sketches are commonly considered to be negligible quantities by the public, and the sooner this notion is exploded the better, for it leads to a great waste of valuable time, and to gross injustice in many cases. Some architects insist that the priced bill of quantities on which a successful tender is based shall be deposited with the contract documents for the pricing of any extra work. In some other world this may be a proper proceeding; but here it is undesirable, for it places in the architect's hands a complete key to the builder's success in tendering, and this may be placed in a rival's hands by the architect or his clerks. We think that a builder's detailed priced bill of quantities is his private property; the architect should treat it as such, and it should not be obtained in any way but by the spontaneous offer of the builder who prepared it. If a builder hands over such a document unconditionally, he deserves to see it published, for the benefit of the community, in some professional journal. One of the difficulties in tendering arises from the fact that it is uncertain what class of work will satisfy the architect. It may be said that the specification settles that; but it does not, for it is quite possible he may interpret it favourably or unfavourably, as he feels inclined. One builder may take what he says literally, while another will take it "cum grano salis." The former is therefore handicapped in tendering, and is only wasting time in doing it. We knew of a case once where the architect specified that the timber used was to be cut free from sapwood. A builder tendering took this literally, and priced all his rafters, joists, and plates at 4s. per foot cube. This man intended to cut his timber from the log, rejecting all sapwood. Another builder tendering for the same work priced his timber at 2s. per foot, knowing, apparently, that the architect would not object to a little sapwood. His tender secured the work, and he had more profit out of the wood he supplied at 2s. than the other competitor would have had at 4s. Everyone knows how ruinously expensive it is to cut scantlings free from sapwood nowadays, when imported logs are so sappy and of such small sizes.

Again, in Mason's work the finish may vary considerably, even within the true intent and meaning of the specification; the quality of stone used may also vary, and, after a lifelong study of the matter, one finds it an impossibility to put in words what will convey the same meaning to different men, for they will naturally interpret them in the light of their own experience.

Another thing to be guarded against in specifications and quantities is the use of words of doubtful and ambiguous meaning, bearing in mind that what may be clear as noonday to the writer may be the reverse to the reader, who attaches a totally different meaning to the words used. Only last week we discovered that a builder always called a gutter a valley. He denied that there was such a thing as a gutter, and on inquiry we found that there was not a tradesman in his town that ever heard of a gutter! The difficulty here was that, although two valleys and a gutter were specified, the contractor assumed that there was an error in the specification because *three* valleys were not provided for, and he omitted the lead gutter altogether in his estimate. This shows that the architect or surveyor cannot be too careful in guarding against misunderstandings that may occur through the use, in the specification or quantities, of names having a strictly local interpretation, and which do not agree with the generally received meaning of the words.

Now, coming to quantity-taking, one of the most remarkable things about it is the number of standards of measure used by surveyors. For digging, there is the cube yard; for brickwork, the rod; for masonry, the cube and superficial foot; for carpentry and joinery, the cube foot, the superficial foot, and the square; for roofing, the square; for plastering, the superficial yard; and for lead, the hundredweight. To ascertain the quantity of material in building-work, the standard, universal, and only measure is the foot, and when it is expressed in any other denomination, it can only be done by that legerdemain of arithmetical calculation usually called "reduction." As squares, rods, and yards cube or superficial must first appear as feet, why, then, are the quantities not kept in feet, and not transmuted into other terms, many of which have a local meaning? A foot long, a foot superficial, and a foot cube are terms which need no explanation, for a foot is the unit of measure everywhere; but the rod is a local measure, and the perch in many cases supplants the yard in walling. In Ireland the perch is 21ft., in England it is 16ft.; but even in many places in England the Irish perch is used for measuring drains and other field-work, so that it is desirable to express all measurement in feet where possible. The difficulty in leaving all denominations in feet is that in some cases the unit would be too small for pricing. For instance, a cube yard of digging may be worth 6d., and if a cube foot were priced at the lowest coin of the realm—namely, ¼d.—the cube yards would come to 6¾d. Again, if a cubic foot were priced at ½d., the value of a cube yard would be 13½d., and as in tendering for digging builders have many values for the cube yard between 6¾d. and 13½d., it is obvious that the foot as a unit could not be used without bringing fractions into the calculation, and in this way confusion would be introduced when the intention was to avoid it. Again, take a rod of brickwork. Suppose a reduced foot is priced at 1s., the value of the rod will be £13 12s., and the addition of ¼d. to the price, making it 1s. 0¼d., will bring the value of the rod to £13 17s. 8d.—a jump of 5s. 8d. If the foot is not reduced, and that it means a foot of 4½in. work, then the difficulty of using such a small unit of measure becomes more obvious, for the addition of ¼d. to the price of such a foot means increasing the value of a rod, per saltum, by no less than 17s. The rod as a unit of measure for brickwork is used chiefly in London and the suburbs. Elsewhere it is unknown, and in many places it would be next to an impossibility to make a bricklayer understand it.

SELECTED DESIGN FOR THE DEPARTMENT OF JUSTICE BUILDING, WASHINGTON, U.S.A.

[WITH ILLUSTRATIONS.]

The expedition which distinguished the settlement of the limited competition held for the three enormous public buildings about to be erected by the Government of America in Washington was distinctly remarkable, for in this regard the affair surpassed all record in the rapidity of its settlement, seeing that the award was made, we understand, within a week from the day when the fifty-seven schemes submitted in the contest were received. Sixty firms of architects were invited to compete, and only three failed to respond. Three separate juries of architectural experts were elected to adjudicate upon these competition plans, and the Commission of Fine Arts was also consulted, prior to the final adoption of the designs then chosen. The dexterity thus displayed in arriving at this award resulted, so far as we are aware, in no question as to the appropriate character of the designs or to the justice of the juries' conclusions, thus quickly determined. Notwithstanding, however, the rapidity of the proceedings at the outset, long-protracted delay ensued, in consequence of other considerations coming into play, with the result that very soon it became evident the project would have to wait for pending changes in the political administration, and also, in consequence of this all-important point, that nothing could be done till Congress had taken up the business and made an appropriation for the cost of the buildings. These buildings are three in number. First and foremost the premises for the great Department of Justice, which we herewith illustrate. The architect is Mr. Donn Barber, of New York. The second building will house the Department of Commerce and Labour, for which Messrs. York and Sawyer, also of New York, are the architects. The third palatial building is for the Department of State, which will be erected from the plans prepared by Mr. Arnold Brunner. The two years' delay sub-

consequently protracting the business was made all the more noticeable owing to the striking contrast furnished by the extraordinary promptitude exercised in the determination of the preliminary proceedings; but, nevertheless, it is more than likely that the interval proved to be of no small advantage in so far as the completeness of the designs themselves are concerned, and in the meantime the three firms of architects have been busy developing their plans in conjunction with the head officials of the several departments of State more particularly interested, and besides this gain, in accordance with the original intention of the Government authorities, the several designers have been engaged in conference with each other, in order to reconcile their individual compositions and insure a harmony of conception so essential to the good effect of the group of buildings considered as a whole. It was not till last March that progress was settled on, and now, we understand, the erections will go forward. Till that conclusion happened the architects who promised us drawings could not properly enable us to publish their designs; but, as Mr. Barker remarks, the results have "proved that your persistency has finally been rewarded" by the publication in our pages today this set of accompanying elevations, section, and plans, illustrating the Department of Justice building, which will add to the national architecture of the United States, as exemplified in Washington. It so happens, however, that we have not yet received the descriptive particulars of the scheme for which we have been recently waiting, and the drawings must, therefore, speak for themselves. The façades are severe and Classically dignified, worked out with a due regard to refined precedent, and treated primarily as a screen for ample fenestration incidental to the needs of contemporary requirements of light and ventilation. The quadrangular lay-out of the plan, if not particularly original, conforms to these foregoing essentials, the scheme generally being straightforward and simple. The corridors in the ends and rear appear to rely freely on borrowed light; but the staircases are well provided with external windows, those to the back premises being planned diagonally in an ingenious way, and by no means very dissimilar to the arrangement which formed so distinguishing a feature in Mr. Edwin Cooper's selected plans for the Offices of the Port of London, Tower Hill, illustrated, immediately after the award was settled, just twelve months ago, in our issues for July 12 and 19, 1912. In the London building the stairways, however, were in themselves segmentally contrived and so set out right and left of the diagonal treatment adopted, thus leaving an unimpeded flow of light into the corridor behind and beyond. In this American Department of Justice plan the stairs intervene on the diagonal itself, the light being obtained in the more usual way between the half space landings augmented by windows at the extreme ends of the rear long corridor. The photographs supplied us by Mr. Donn Barber are not so large as could have been wished, in order to fully illustrate the work in detail; but we have arranged the prints to the best available advantage.

LONDON COUNTY COUNCIL.

The London County Council resumed on Tuesday the debate from last week on a recommendation of the Highways Committee to discontinue the working of the horse-car service on the tramways in Liverpool-road, Islington. Eventually the recommendation was adopted, with an amendment instructing the committee to consider and report as to the desirability of utilising the Liverpool-road route as part of a through route for cars between the City and Highgate and other northern termini.

The Asylums Committee reported that they had accepted the tender of Messrs. Holliday and Greenwood, Ltd., amounting to £43,295, for the erection at Denmark Hill of the Maudsley Hospital, and that of Messrs. John Appleby and Sons, of Southwark, at £4,360, for building a hospital villa for male patients at Bexley Asylum.

It was decided to give notice to the president, vice-presidents, and governors of King's College Hospital under section 11 of the King's College Hospital Act 1904 requiring them to give up, free of cost to the Council, such part of the present site of the hospital as may be necessary to make Portugal-street of a width not less than 40ft. throughout such distance as the present site abuts upon that thoroughfare. The effect will be the widening of the street in question for some 240ft. in length from a present width ranging from 28ft. to 40ft.

Approval was given to plans submitted by the Metropolitan Railway Company for a bridge with closed parapets proposed to be constructed over Kilburn High-road, under the Company's Act of 1912, Section 30 (5). The sanction of the Middlesex County Council and of the Willesden Urban District Council will also have to be obtained by the company for the plans.

"IDEAL" BOILERS FOR WATER AND STEAM.

The National Radiator Company, Ltd., 439 and 441, Oxford-street, W., is making a new series of large "Ideal" boilers, the No. 3 "I" series for water and steam. These



boilers are made in ten different sizes, ranging in capacity for steam from 1,720 to 5,230 square feet of radiation, and for water from 3,055 to 9,310 square feet.

The special features of these boilers are that for facility in handling the sections are made in halves, all exposed surfaces are covered by insulated steel jackets, and the grate-bars are water-cooled. The advantages are obvious.

One of these boilers will be in the showroom of the company within the next few days, where their clients will be able to freely inspect same. The opportunity should not be missed.

NATURAL ROCK ASPHALTES AND BITUMENS.*

In many respects this book really fills a want. The literature of the past twenty years has been singularly barren in regard to the subjects of its title, and in some measure it is perfectly true that the conclusions of older books are not all warranted by the experience of to-day. Not by any means that knowledge has stood still. Chemical research has been busy, busier sometimes, we fancy, than Mr. Danby himself is aware—but the workers almost necessarily have been few, and for the most part their encouragement has been left to the comparatively few leading manufacturers. Still, it is most desirable that as much as any well-informed writer knows should be given to the various users of asphalte and bitumen, and Mr. Danby's book may be read with profit, if with discrimination, by all architects and builders.

One caution, given on p. 25, we very heartily endorse—we have offered it ourselves, time and again, and that is that the

* Natural Rock Asphaltes and Bitumens. By ARTHUR DANBY. London: Constable and Co., Ltd. 8s. 6d.

part-ruin a phalt [illegible] specified to the architect or contractor to [illegible] material. Officers perhaps [illegible] responsible, as is indeed suggested [illegible] with the architect, with the not very creditable result mentioned by Mr. Danby on p. 27. Sometimes specifications drawn by presumably well-informed authorities are ludicrously inaccurate, as in the instance of the form of tender issued by the Borough of Camberwell, given on p. 28. Occasionally we really do not understand Mr. Danby's own cautions. We are told on p. 28 that "to blend this" (Bridport grit) "with the mastic requires that the latter must be remelted and recooked here in England, when it follows that the brand of the mining company manufacturing the original mastic, which is the only real safeguard of the architect or engineer, is lost." It is also stated on p. 82 that "the deposits at du Pare, Seyssel and Pyrimont are now exhausted." That is not so. On p. 180 we are told that when laid on concrete a slope of 1ft. in 40ft. should be allowed for necessary falls. We have found 1in. in 10ft. quite sufficient. We demur also to the recommendations on p. 183 to add the grit to the hot material in the pot and well stir it in. Grit is certainly best incorporated with the mastic before melting. Surely, too, the contents of two boilers, each containing from 8 to 10cwt. of rock asphalte mastic per operation, will give, when spread, more than 8 superficial yards of ¾in. work, as stated on the same page, or else, somehow, we misapprehend Mr. Danby's calculation. On p. 193 the advice with regard to vertical work in extremely wet positions is hardly that we should care to follow.

Still, Mr. Danby has had far more general experience than we can lay claim to, and he admits that in certain portions of his book he is at variance with other writers, against whom, including ourselves, he is, we are quite sure, quite capable of holding his own. Anyhow, he has written a useful book; and if, as we think, in Chapter II. he is unfair to Delano (pp. 21 and 22), who was with the original French Seyssel Company, and with whose book, published twenty years ago, many readers, doubtless, are familiar, it is probably due, not to prejudice, but perhaps to misapprehension.

THE NEW DELHI.

The reports of the Delhi Town-Planning Committee—consisting of Captain George S. C. Swinton, chairman; Mr. John A. Brodie, M.Inst.C.E., of Liverpool; and Mr. Edwin Lutyens, A.R.A., have been issued in three Blue Books. In the first report objections are raised to the Durbar area, and the southern site, which has ultimately been adopted, is recommended. The second Blue Book gives a special report on the possibility of building the Imperial Capital on the north site. The third Blue Book comprises the final report of the committee, and is dated Delhi, March 20, 1913.

In this final report the committee insists that "Delhi is to be an Imperial capital, is to absorb the traditions of all the ancient capitals, and is to be the seat of the Government of India." They point out that the city must be suited for a seven months' residence. Health in a land with a bad malarial record and violent variations in climate, rainfall, and river flood levels has to be specially safeguarded. The local drawbacks of dust, glare, and barrenness have to be combated, and the provision of irrigation must be arranged.

The total area of the Imperial city has a width of about 4½ miles at its broadest part, and narrows to a width of 2½ miles. The south-west corner is 3½ miles from the Ajmere gate of Delhi city, and the south-east corner 3¼ miles from the Delhi gate. The only portion of the older cities lying within these boundaries is an area of about 1½ square mile. The committee consider that this area, at present unoccupied by buildings, will best be utilised partly for large institutions and partly by being treated as a [illegible] park.

The rest of the site consists [illegible]

most of which is in use for agricultural purposes.

The central points of interest in the lay out are Government House, the Council Chamber, and the secretariats, which are to be placed at Raisina Hill, near the centre of the new city. Behind the hill a raised forum will be built, flanked by the block of secretariat buildings and terminated at its western end by Government House and the Council Chamber, with its wide flight of steps, portico, and dome. The forum will be approached by inclined ways, with easy gradients on both sides. Behind Government House will be the gardens and parks, flanked by the buildings belonging to the Viceregal estate. Beyond these again, on the Ridge itself, will be a spacious amphitheatre, and above this and behind it will lie the reservoir and its tower. Below the forum will be a spacious forecourt defined by trees and linked on to the great main avenue or parkway which leads to Indrapat. This forecourt might be adorned by fountains and contain emblematic decorative features. Across this main axis, and at right angles to it, will run the avenue to the proposed new terminal railway station. The avenue will terminate in the station, the post-office, and the business quarters at its northern end, and in the proposed cathedral at its southern extremity. Around the railway station will be grouped the administrative and municipal offices, the banks, the shops, and the hotels. The processional route will lead down from the railway station due south to the point where it is intersected by the main east to west axis. Here will be grouped the buildings of the Oriental Institute, the Museum, the Library, and the Imperial Record Office. South of the forum will be the residence of the Commander-in-Chief, while round about the Viceregal estate and the forum will be the residences of members of Council, the secretaries, and other officials.

The main avenue east of the Secretariat will be 440ft. in width, while the other avenues will range from 60ft. to 300ft, the width depending on the varieties of trees selected. In all main avenues it is proposed to arrange for running water with fountains at intervals. The principal avenues, in addition to the main avenues, will be those running at right angles to the main east to west axis. A Ridge drive will be laid out. The park between the new and the present city will be, roughly, 1,000 yards in width. The lay-out has been designed for a city on a ten square mile basis.

The Government of India accept the conclusions of the committee generally as a useful guide in their further operations.

"THE LIVERPOOL ARCHITECTURAL SKETCH-BOOK."

If captious critics say that the absence of any "sketches" either of old buildings or of projects for new ones renders the title of this volume a misnomer, they will join our cordial agreement that the designs made by the students of the Liverpool School of Architecture, under the direction of Professor Reilly, are painstaking, and, in many respects, capable. Moreover, comparatively few people can hope to see an exhibition of architectural students' drawings held so far from the Metropolis, and the selection here got together brings the matter before a wider public, besides serving as a yearly record.

The work shown is creditable and indicative of good instruction. The schemes set are certainly not wanting in ambition. We have a War Memorial building, a University, a Senate House, a Mausoleum to be erected in a lake on a rock, a Terminal Railway Station, and a Public Art Gallery, besides some "compositions," warehouses and terrace houses. The absence of plans, more particularly of the larger proposals, is not accounted for. Perhaps space was not available for their inclusion. Measured drawings of elevations and details start the series with the Royal High School, by Thomas Hamilton (1784-1858), given, like the rest, without the architects' Christian names and dates; of St. George's Hall some internal details attributed to Professor Cockerell (1788-1863) are included; and the Harris Free Library, Preston, is more fully represented, and accompanied by a sketch plan as a key.

OBITUARY.

Mr. John Richard Clayton, principal of the firm of Messrs. Clayton and Bell, glass painters, a highly-skilled worker in woodcarving and mosaics, died at his residence in Fairfax-road, N.W., on Saturday, within a few days of completing his eighty-sixth year. As a youth, he decorated the roof of Wells Cathedral for Anthony Salvin, and afterwards prepared drawings of the human figure for Sir Gilbert Scott. He designed the figure of St. George slaying the Dragon, which forms the apex of J. B. Phillip's Crimean monument opposite the west front of Westminster Abbey. In 1885 Sir Gilbert Scott induced Clayton to unite in partnership with one of the assistants in his office, the late Alfred Bell, as glass painter, and together they carried out many important commissions. The mosaics and sculptured groups on the Albert Memorial were designed by Clayton, whose works also included decorations for one of the courts at the Crystal Palace, the White Star Company's Oceanic, the mosaics and glass in the Guards' Chapel of the Wellington Barracks, and also the Roman Catholic Cathedral, Westminster, the covers of the official Coronation Service music for the Coronation of King Edward VII., and of that of King George. It was through his recommendation to Dean Stanley that the late John L. Pearson, R.A., was appointed architect to Westminster Abbey, and through his insistence that Pearson competed for, and gained, the commission for Truro Cathedral.

Mr. James M. Whitelaw, architect, of 10, Great Ormond street, W.C., was drowned on Saturday while bathing at Branksome Chine with a friend, Mr. Shoosmith, at whose home in Branksome Park, Poole, he was staying for a few days. Mr. Whitelaw was the fifth son of the late Mr. Charles S. Whitelaw, of Glasgow, and was 27 years of age. In 1910 he gained the Silver Medal of the Royal Institute of British Architects for a bold and sympathetic measured drawing of Alfred Stevens's Wellington Monument in St. Paul's Cathedral, and this spring he won the Soane Medallion and £100 with a design for a railway-station. The funeral took place at Bournemouth Cemetery on Wednesday.

We regret to record the death, on July 2, at Oundle, of Mr. Alfred Pitman, of Royston Lodge, Sidcup, and Westbere, Sturry, Kent, for thirty years manager of the *Contract Journal*, aged seventy-three. The interment took place at Sidcup on Tuesday. Mr. Pitman had many friends, and our own personal relations with him throughout the last forty years were always those of mutual esteem and helpfulness.

The Plympton Rural District Council have increased the salaries of Messrs Crocker and Wickett, the road surveyors, each to £170 per annum.

Alderman Holden laid last week the foundation stone of the extensive enlargements of the Barnsley Corporation Baths, which will cost £6,56)

The foundation stone of a new mission church to serve the All Saints' district of Sawton, Manchester was laid the other day. The building, which will accommodate 300 worshippers, is to cost £3,000.

The Mayor of Coventry laid last week the memorial stone in connection with the rebuilding of St. Nicholas Church which is being enlarged to provide accommodation for 500 persons. The cost of the scheme is £2,000

A Council school, built at a cost of £3,770 has been opened at Childer Thornton. The architects were Messrs Deacon, Horsburgh, and Deacon of Liverpool, and the contractors were Messrs Fleming of Neston

The town hall at Liverpool has been reopened after the provision of a new foyer, 34ft by 21ft and other improvements and redecoration. The architect was Mr. W. H. Romaine Walker, of London Messrs G H. Morton and Son, Ltd., of Bold-street, Liverpool, carried out the decorations.

COMPETITIONS.

ARCHITECTURAL ASSOCIATION.—The following are the awards of prizes for the last session of the A.A. School: Banister Fletcher Bursary, Mr. D. E. Cruickshank. A.A. Travelling Studentship, Mr. A. S. G. Butler. A.A. Travelling Studentship, Second (Andrew Oliver Prize), Mr. W. W. Locke. Saxon Snell Scholarship. Prize divided as follows: Mr. R. M. Pigott, £30; Mr. R. C. Clark, £20. A.A. Silver Medal, not awarded. A.A. Essay, no entries.

COULSDON.—In a recent limited competition for the proposed church of St. James, Coulsdon, the designs submitted by Mr. W. Cooper, Messrs. Greenaway, and Newberry, AA.R.I.B.A., and Mr. Sydney Tatchell, F.R.I.B.A., were selected for the consideration of the building committee, who finally appointed Messrs. Greenaway and Newberry as their architects.

FEDERAL GOVERNMENT BUILDINGS, OTTAWA.—In the competition for the new Federal Government Buildings at Ottawa, which is open to architects throughout the Empire, the successful competitor will have charge of the work, and the five competitors placed next in order of merit will receive 3,000dol. each. As we announced in our issue of June 20, p. 853, Mr. T. E. Collcutt, Past-President R.I.B.A., has been appointed one of the three assessors, and has gone to Ottawa; the other three assessors being Mr. Russell and Mr. Marchand. There will be a preliminary as well as a final competition.

MOSSLEY.—The result of the competition for new council school at Foxplatt, Mossley, is: First premium (£15 15s.), Messrs. Eaton, Sons, and Cantrell, Bank Chambers, Stamford-street, Ashton-under Lyne; second premium (£10 10s.), Mr. F. Quentery Farmer, Liverpool and Coventry. The assessor was Mr. J. H. Woodhouse, F.R.I.B.A., of Manchester.

The death occurred on Monday of Alderman James Birch, of York, twice lord mayor of the city. Alderman Birch was a member of the Plumbers Company. He was fifty-seven years of age, and leaves a widow and one son.

Cardinal Archbishop Bourne laid last week the foundation-stone of St. Monica's Church at Palmer's Green. It will be in the 15th-Century Gothic style, with stone exterior, and will have accommodation for from 400 to 450 worshippers.

The Princess Royal, who was accompanied by the Duchess of Fife and Princess Maud, visited Streatham on Monday, to open the new "Queen Alexandra" wing of the British Home for Incurables, built in commemoration of her Majesty's fifty years' connection with the home. The extension is a four-story building, giving accommodation for nearly forty additional patients, and has cost £30,000. The architect was Mr. Edwin T. Hall, F.R.I.B.A., of Bedford-square, W.C.

To carry out sewerage works required by the the Local Government Board in the Cumberland imning vilage of Broughton Moor, a scheme estimated to cost £2,950 was submitted on Monday to the Cockermouth Rural District Council. The Board had previously rejected a £1,500 scheme. The clerk said the scheme would cost as much as the parish was worth in rateable value. By a majority of one it was decided to forward the plans to the Local Government Board.

A meeting of the Ipswich Town Council was held on Wednesday week. The mayor reported, from the special committee appointed with reference to the resignation of the borough surveyor, Mr. Edward Buckham, after very many years' service, and said they had received numerous applications for the vacant position. These had been reduced to three—namely, Mr. C. G. Bradley, engineer and surveyor, of Goole; Mr. John R. Mead, deputy-borough engineer and surveyor, St. Helens; and Mr. F. P. Sissons, district engineer and surveyor, Stoke-on-Trent. The applicants were then interviewed by the council. The mayor afterwards said the committee put the names in the following order:—Messrs. Mead, Bradley, and Sissons, and he therefore moved that Mr. Mead be appointed, as the committee considered Mr. Mead's experience of a tidal river at Birkenhead fitted him more than the others for the position. Mr. Mead was unanimously appointed.

Currente Calamo.

There was no quorum last Monday night at the special general meeting of the Royal Institute of British Architects, convened to resume the consideration of the draft revised schedule of professional charges, so nothing further was done. As a mark of confidence in their discretion members of Council may regard this pleasurably; but most of them, we fancy, would have welcomed a little sustained interest on the part of the rest concerned.

The Site Values muddle grows worse and worse. Mr. Lloyd George says "only" some 6,000 appeals have been lodged, and he seems quite satisfied that while the valuations have cost £1,393,000, the land taxes based on them have brought in only £223,000. Moreover, if the decision of Mr. J. Gould Drew, the referee appointed under the Finance Act to hear the appeal of Lady Smyth against the provisional valuation made on her model farm at Norton Malreward, Somerset, is upheld, on appeal, practically every valuation of agricultural land in the country has been made on a wrong basis. The Government have hitherto worked on the basis that the value of the tenant right, consisting of cultivations, unexhausted manurial and other improvements, was not included in the total value; and that in going through the divesting process directed by the Act to ascertain full site value, the value attributable to grass was not a subject to be divested. Mr. Drew has decided that the pitch of value adopted by the Commissioners for the value of the divested site is excessive; that the grass is a subject to be divested in arriving at full site value; that the value of unexhausted manures should be included in the gross and total values of the land. The Courts have to decide on which basis the valuation is now to proceed. Surely more public money should not be wasted on preparing and serving valuation forms which have no real legal authority behind them?

It is all very well for Mr. Lloyd George to attitudinise in the House of Commons, and indulge in characteristically mock heroics, as he did yesterday week, when the absurdities perpetrated by some of the officials are pointed out. But, really, why should small property owners be bullied, and decent people insulted by questions of the sort put to the Huddersfield Rector, who was asked the cost of his church, built in the 17th century, and how many bodies were buried in his churchyard. Corpses have hardly unexhausted manurial values, and posthumous fame, or the reverse, can surely hardly be insisted on as a basis of unearned increment? Here is a case in which Mr. W. H. Simpson, of Spenser Chambers, Market-street, Leicester, is trying to disentangle a knot, which, as he says, "would puzzle a Philadelphia lawyer." A provisional valuation was received herein dated November 6, 1912, showing the following values:—

Original gross value	£2,570
Original full site value	2,560
Original total value	2,570
Original assessable site value	2,560
Aggregate value	170

After objection was made, showing amendments desired, an amended provisional valuation was received, dated March 25, 1913, showing the following values:—

Original gross value	£2,570
Original full site value	2,560
Original total value	2,570
Original assessable site value	2,565
Aggregate value	170

A further amended provisional valuation was received, dated May 1, 1913, showing the following values:

Original gross value	£3,000
Original full site value	2,990
Original total value	3,000
Original assessable site value	2,995
Aggregate value	170

This second amended provisional valuation was accompanied by Form 75a.

It will be noticed that the total value remains the same between November, 1912, and March 25, 1913, at the sum of £2,560. Between March 25 and May 1, 1913, the total value rises from £2,560 to £3,000. How long a time is to elapse before the total value reaches its proper and present value of £4,000? The area of the land is 14,490 square yards, as against 14,665 stated in the provisional valuation. No land has been sold on the estate under 7s. per square yard. The last amended provisional valuation shows a little over 4s. per square yard. The demand for Undeveloped Land Duty according to the provisional valuation is £4 7s. 1d. per annum. The present demand, dated June 26, 1913, for Undeveloped Land Duty, according to first amended provisional valuation, is £3 13s. 1d. per annum. The demand for Undeveloped Land Duty according to the second amended provisional valuation will, when it arrives, no doubt be £4 11s. What will the ultimate demand be? Why should an owner of property be pestered with demands for payment before the valuations are agreed, and if the demand is not paid, receive threatening letters from the Department?

Form 35a, which accompanied the first Amended Provisional Valuation, points out that Section 27 (3) of the Act provides that an Amended Provisional Valuation shall be deemed to be a Provisional Valuation for the purposes of the Section, and that, therefore, the same provisions as to objection and appeal apply to this valuation as to the Original Provisional Valuation, which gives sixty days in which to make an objection. Form 75a, which accompanied the second Amended Provisional Valuation, stultifies Form 35a, inasmuch as it states that "the Commissioners of Inland Revenue do not propose further to amend such Provisional Valuation, and any notice of appeal must be given within thirty days after this notice, in accordance with the provisions of the Land Value (referee) Rules, 1910." Thus, after the first amended Provisional Valuation there are sixty days in which to object, and after the second Amended Provisional Valuation only thirty days in which to appeal, although they are both amended Provisional Valuations. Has the objector sixty days in which to give notice of objection to second amended Provisional Valuation, or only thirty days? When objections are made stating amendments desired, notice of appeal is allowed to the owner after a lapse of thirty days; but Government Valuers rarely, if ever, amend within this period, so owners of property are held to dates, and Government Valuers adopt what course best serves their purpose, and take any time they like in which to amend, thus keeping the matters in dispute open indefinately, unless an owner appeals to obtain his just rights, and then there is still further delay. We are glad to know notice of appeal has been lodged in this case. It certainly is not what Mr. Lloyd George is pleased to call a "whimpering"!

The Archbishop of Canterbury's remarks on Tuesday, on the occasion of the third reading by the Lords of the Ancient Monuments Consolidation and Amendment Bill, scarcely convince us of the undesirability, from his point of view, of the transfer of the control of ancient churches to a public authority. Much more to the point might have been said. The truth is that all such measures as the Bill in question, laudable as their objects may be, are only more or less scrappy attempts to do that which can only be effectively done by such a Ministry of Fine Arts as we advocated last week. In France that Department is charged with the protection against enemies of all kinds, such as the ravages of time, the stupidity of the ignorant, the greed of the covetous or selfish, of the picturesque sites and precious monuments, and antiquities, and objects of art of all kinds, and a small army of architects, builders, inspectors, and servants of every category effectually seconds the vigilance of the Department. The instances quoted by Mr. Wynford Dewhurst, in his book, which we mentioned, show how well this work is done. Till we make it the business of a similar Department here, all attempts like those of the Bill just sent down to the House of Commons will prove more or less futile.

In a paper at Exeter on Tuesday, Mr. Henry R. Aldridge, secretary to the National Housing and Town-Planning Council, sensibly pointed out that it was the height of folly to take patients from undesirable homes for a few months to sanatoria, at great expense, and then dump them again in their old homes, and under their old conditions. That is done in many cases, and it is impossible to do otherwise in most places owing to the scarcity of houses. Far more good would be done in spending some of the money in providing sanitary homes for these people in fresh air, where they could be under some kind of control, than in sending patients to sanatoria, at enormous expense, without provision for their after-life. Surely it is a fitting and reasonable thing that, in the matter of the rehousing of the poorest, there should be assistance from the State? We are spending ever-increasing millions under the Insurance Act simply to patch up people, who are then sent home to breed further degenerates in "homes" where health and decency are impossible, and which the more valuable animals of the stud, the farm, or the kennel would not be allowed to inhabit by the most sleepy sanitary authority.

Messrs. Robert Kearsley and Co., Ltd., of Ripon, have just issued, in French, Japanese, Spanish, Portuguese, as well as in English and other languages, their new informative and artistically-produced illustrated record of their extensive works at Ripon. All cannot visit that most interesting and, in many respects, unique installation, though all are always welcome, and none should miss an opportunity. Friends at a distance and abroad should do the next best thing, and get a copy at once of this book. The firm has a reputation of seventy-five years, having been founded in 1837, and during that period a record of continued progress has been steadily and successfully maintained. The illustrations will enable all to grasp the wide scope of Messrs. Kearsley's business, and the diversity of their products. The works cover over five acres, and they make not only varnishes of all grades, for use on railway coaches, locomotives, motor-cars, decorative work, and so forth, but quite a large part of the factory is

devoted to the manufacture of dry colours and to the grinding of paints, from the heavy oxides as used by engineers to the very finely ground colours for use on the best motor-car work. Another important branch is the Enamel Factory, where the well-known "Arkalac" is made, and, in addition, there are numerous subsidiary departments. The tank rooms alone, where the varnishes mature, cover over an acre. In the laboratory, with its staff of chemists, all the raw materials are tested, and the various experiments made incidental to the many processes carried on in the factory. In the testing-room and paint-shop the goods are subjected to searching tests throughout the different stages of manufacture, and are finally tried in a practical way by expert painters, under actual working conditions, before being passed for delivery. The greatest care is thus taken to meet the exact requirements of each individual customer, and by means of a special check system, under which registered samples are kept of every single consignment that leaves the works, the exact matching of repeat orders is always insured.

One seems to have heard the story before—and of other people and painters—which the *Times* tells this week of the late Mr. John Richard Clayton, the glass-painter, and the pre-Raphaelite brethren. Invited to call on Rossetti in his studio, the young artist, we are told, listened to the brilliant diatribes of the set against what they called the "sloshiness" of modern painting, and even references to Sir "Sloshua" Reynolds himself. Young Clayton noticed that the studio was hung round with photographs of works of the great masters, and being rather startled to find that they were all upside down, he ventured to ask the reason of this strange treatment. Rossetti (says the *Times*) affected to be puzzled at Mr. Clayton's discovery, and asked if they were not right. And it was not until Rossetti had called out to Hunt and Millais that "here's a fellow who knows the way up for these 'sloshy' things" that young Clayton realised the joke. Nowadays, at any rate, no such mischief or malice can mar the merits of the Post-Impressionists! Any way up, their admirers will discover new beauties, and "sloshiness" has been exalted into a precious quality.

The town council of Loughborough decided on Monday to carry out extensions at the technical institute at an estimated cost of £5,000. The scheme provides for the town offices being utilised as part of the institute, and an additional building added to the Ashby-road frontage. The fire-station will be pulled down, and additional land will be acquired at the rear of the town offices.

On Saturday afternoon, foundation-stones were laid of the new headquarters of the National Naval Cadet Corps in Wandsworth-road. The new building, which is being erected on a freehold site opposite Thorncroft-road, at an inclusive cost of £10,000, is to contain a drill-hall, workshops, and recreation-rooms, and was illustrated in our issue of August 9, 1912. Mr. T. Marcus Houghton is the architect, and Mr. E. Monk, of Edmonton, is the builder.

The Bristol Master Builders' Association are holding their annual excursion on Wednesday next. It will take the form of a motor tour through some of the most beautiful scenery in Gloucestershire and Worcestershire. The party will leave Bristol at 8.15 by rail for Cheltenham, whence torpedo motor charabancs will convey them to Tewkesbury. Here time will be allowed for a visit to the abbey, and then the party will proceed to Worcester for dinner, after which the works of the Worcester Royal Porcelain Company, Ltd., will be inspected. The tour will be continued through Malvern, the Wyche Pass, to Ledbury, and thence to Gloucester, returning from that city by rail to Bristol.

Building Intelligence.

BEDFORD COLLEGE. The new buildings of the Bedford College for Women in Regent's Park were opened on Friday by Queen Mary. The buildings have been erected on the site of South Villa, and the architect, Mr. Basil Champneys, has arranged the college upon almost the exact site of the old outbuildings and conservatories. The college premises consist of six main blocks of purple bricks with red-brick dressings. The first contains the rooms for administrative purposes and for arts. The second and third consist of science laboratories and lecture-rooms. The fourth contains a dining-hall, kitchen, and offices, common rooms, Principal's residence, and students' rooms and cubicles for servants: the fifth is the residence for eighty-five students and staff, while the sixth is the library. The various sections are connected by corridors, and the most notable features of the building are the assembly-hall, 60ft. by 30ft., the dining-hall, which seats 250 students, and has panelled walls, and the library. The library, which is panelled throughout, was designed by the late Mr. Sidney R. J. Smith, F.R.I.B.A., and was presented to the college by Lady Tate; it was carried to completion under the direction of Mr. A. St. Hill Brock, F.R.I.B.A.

BRISTOL.—No more prominent site could have been selected for the proposed Royal Colonial Institute than that which has been offered by the Sheriff of Bristol. On the ground-floor level the drawings provide for a reception-hall 37ft. by 25ft., with a large semicircular bay-window facing towards the city. The main entrance lobby is to have a domed ceiling lantern, and will conduct to the grand staircase, 19ft. by 14ft., opened to the reception-hall, with Ionic columns on either side. Statue recesses are formed in the sides, and the ceilings and walls will be architecturally enriched. Gentlemen's cloakrooms and lavatories, caretaker's staircase, and entry approached by a side passage occupy the remaining space on this floor. The first floor is to comprise a salon 15ft. 6in. high, and floor area as the reception-hall. On the second floor will be a library, 25ft. square, writing and smoking-room, a buffet with servery and stores, and on the third floor a reference-room, committee-room, and commodious living-rooms for the caretaker. The character of the principal façades has been largely influenced by the severely Classic design of the adjacent Victoria Rooms, and the architects have accordingly adopted Italian Renaissance as the basis of their treatment, with some more modern adaptation and enrichment. The building is intended to be faced with dressed Portland stone. The designs have been prepared by Mr. Norman G. Bridgman, A.R.I.B.A., of the firm of Messrs. Bridgman and Bridgman, A.R.I.B.A., M.S.A., architects, of Bristol, Torquay, and Paignton.

LONGTON, STAFFS.—The town hall of Longton has just been reopened by the mayor of Stoke-on-Trent, after remodelling. The exterior of the building remains practically the same, save for the closing up of the windows of the second floor, but the interior has been entirely reconstructed, under the direction of Mr. J. H. Beckett, A.R.I.B.A., and has been converted into a suite of rooms. In place of the old assembly-room on the second floor is the Albert Hall, which has accommodation for 1,200 persons, or 500 more than the previous assembly-hall. The cost of the work has been, approximately, £9,000. The principal contractors were Messrs. Tompkinson and Betteley.

SEVEN KINGS. The opening ceremony of the new Seven Kings Baptist church took place on Wednesday last. The building externally is faced with sand-faced red bricks, and the dressings are of stone both externally and internally. The pulpit, Communion table, and platform are of oak. The church provides accommodation for 583 persons, with provision for extension. A bold, square tower forms a prominent feature. The contract has been carried out by Mr. J. W. Jerram, Crown Works, Plaistow, E., for £4,284, the architects being Messrs. George Baines and Son, 5, Clement's Inn, Strand, W.C.

WESTON-SUPER-MARE. What promises to be an imposing and desirable building is in course of erection at the corner of the Clifton and Beach roads, Weston-Super-Mare. The site has been purchased by Mr. T. J. Lennard, J.P., the present Sheriff of Bristol, and presented to Lennards, Limited, for the erection of a holiday home to be occupied by employees. Messrs. H. W. Pollard and Sons, of Bridgwater, are carrying out the works, according to drawings prepared by Messrs. Bridgman and Bridgman, A.R.I.B.A., M.S.A., architects, of Bristol, Torquay, and Paignton. The building will be four stories high, each a complete self-contained flat entered from a main staircase, and provided with covered balconies on the S.W. corner, overlooking the Channel and sea-front. The floors and staircases are of fireproof construction, and labour-saving fittings are introduced. The exterior elevations are being faced with red brick and liberally relieved with buff terra-cotta dressings supplied by the Hathern Station Terracotta Company, of Loughborough. A memorial tablet suitably inscribed was formally laid in the portico on Friday last by the Sheriff of Bristol.

WREXHAM. — Sir Thomas Graham Jackson, R.A., has just submitted a report upon the proposal to add a morning chapel to the parish church at Wrexham. He states that the question involved a good deal of alteration of a part of the structure, which is of considerable interest architecturally, and would make it necessary to hide and, he feared, to destroy some of the exterior work, which was handsomely finished with crockets and a finial. He had come to the conclusion that they would not be justified in so far altering and destroying old work. With regard to the improvement of the interior of the chancel, he suggested a pavement and steps of marble in place of the present tiles and stone, at a cost of about £250. The modern reredos, too, might be replaced with something better; one of marble with sculptured panels of figure-work would cost probably from £400 to £500. Sir Thomas thinks the painted glass in the apse is not worthy of the church, and a new window with better glass should be substituted. The project to build the morning chapel has, in view of Sir T. Jackson's opinion, been abandoned.

YEOVIL.—The new quarters of the fire brigade, arranged in the old Cheese Market of the town-hall buildings, and fronting on South-street, were opened for service on Monday week by the mayor. A committee-room has been constructed on one side of the main appliance-room, the latter having exits by big doors to South-street and into High-street. There is storage room, and the hose tower has been removed from Vicarage-street and refixed in the new quarters. The building is heated by hot water. Messrs. Petter and Warren, of Yeovil, were the architects.

The city of Regina has decided to engage Mr. Thomas H. Mawson, Hon.A.R.I.B.A., of Conduit-street, W., to prepare a plan for beautifying that city. Mr. Mawson's fee is to be 8,000dol.

The foundation-stone of a new church in Edlington Colliery village, near Doncaster, has been laid. The cost is estimated at £2,700. The architect is Mr. F. Norman D. Masters, of Doncaster, and the contractors are Messrs. Roper and Sons, of Sheffield.

Tutbury Castle, which was founded by Henry de Ferrers, is undergoing repair. The great gateway, much perished, has been filled in with tiles in layers, set in cement. Some of the side masonry, however, was so shaky as to require taking down and reconstructing.

At a recent meeting of the Simla Municipality a resolution was passed that the committee were in a position to take up a loan of six lakhs for the rebuilding of the town hall, and that the Government be asked to advance the money at 4 per cent. for thirty years.

PROFESSIONAL AND TRADE SOCIETIES.

ARCHÆOLOGICAL CONGRESS AT CAMBRIDGE. The seventieth annual Congress of the British Archæological Association was opened at Cambridge on Monday. In the evening a reception was held at the Guildhall by the mayor and mayoress, at which the Presidential address was delivered by Mr. Charles E. Keyser, who briefly outlined the history and objects of the association. Much remained to be done, as even in these more enlightened times they found unpardonable neglect of many of our ancient and historic monuments, and cruel acts of vandalism being perpetrated under the guise and pretence of restoration or utilitarianism, which could never afterwards be atoned for. Mr. Keyser referred with satisfaction to the erection of the new museum of archæology and ethnology, and with regret to the aggressive modern structures of college extensions. Archdeacon Cunningham, secretary, gave an address on "The Plan of a College Building," in which he sketched how the college was developed. Colleges in their early days had definite characteristics and local associations. The delegates had on Tuesday a motor excursion to some ancient houses and churches in Cambridgeshire and Essex, conducted by Mr. T. D. Atkinson. They visited Sawston Church and Hall, and proceeded to Audley End, the home of the Braybrookes, which was built at a cost of £200,000, on the site of an ancient monastery, by the Lord Howard who took part in the destruction of the Spanish Armada. At Saffron Walden the many Elizabethan houses, the fine church, the museum, and town hall were seen, and the party motored to Thaxted Church and Horham Hall. Afterwards Nell Gwynne's house at Newport, and the churches of Wenden, Littlebury, Ickleton, and Duxford were inspected, and a stay was made at Whittlesford, where the chapel of an old monastic hospital is now used as a cart-shed and barn. On Wednesday Jesus College, Barnwell Church, and the old leper chapel, Madingley Hall, Girton College, and Swaveney, Over, and Willingham churches were visited.

EDINBURGH ARCHITECTURAL ASSOCIATION.—A numerous party of this association visited Aberdeen on Saturday on the occasion of the annual excursion. The visit was arranged by Mr. Arthur Clyne, F.R.I.B.A., president, and Mr. Harbourne Maclennan, hon. secretary of the Aberdeen Society of Architects, who met the party. The members visited two granite quarries, and in the afternoon St. Machar Cathedral, Old Aberdeen, the new library at King's College, with the tower and chapel, the new Marischal College, the Mitchell Hall, tower, and library, and the new Art Gallery.

THE MASTER BUILDERS' ASSOCIATION OF BOSTON.—Two Bills have been presented to the Legislature this year by the Master Builders' Association—viz., House 904, which provided a system of regulated picketing, under supervision of the local police, in the case of a legal strike or lock-out. The second Bill remains to be described—namely, House 929, "For the appointment of a commission to investigate the regulations now in force throughout the Commonwealth relative to construction, alteration, and maintenance of buildings." This measure was drafted following the fruitful suggestion of Mr. R. W. Scott, manager of the Otis Elevator Company, one of the Association's members for many years. The purpose of the Bill is to remove or remedy the unfortunate and hampering conditions which obtain from the lack of uniformity in building requirements throughout the State. Despite similar conditions which may exist, building regulations do not necessarily conform. The Bill, as drafted and amended, is as follows: "Section I.: A commission of five persons shall be appointed by the Governor, with the advice and consent of the Council, whose duty it shall be to investigate the various statutes, ordinances, and regulations now in force throughout the Commonwealth and the various cities and towns thereof, relative to the construction, alteration, and maintenance of buildings within their limits, with a view of establishing uniformity in general requirements, and determining what regulations for such purposes may be adopted, either for the state as a whole, or under a classification of cities and towns, so that general regulations may be made for each class. Such commission shall make report to the General Court on or before February 1, 1914, and shall, as a part of such report, draft an Act containing such general regulations for the construction, alteration, and maintenance of buildings as it may deem best to recommend. Such Act may include, if the commission find it desirable, a provision for a permanent board or commission, which shall have a general supervisory power over the administration of building laws and regulations throughout the State, and shall act in an advisory capacity to local authorities when modifications of building laws and regulations become desirable. The commission may expend in the prosecution of its labours a sum not to exceed 2,500dol."

PARLIAMENTARY NOTES.

ANCIENT MONUMENTS BILL. In the House of Lords on Tuesday, Earl Beauchamp moved the third reading of the Ancient Monuments Consolidation and Amendment Bill. The Archbishop of Canterbury, reminding the House that all reference to ecclesiastical buildings had been struck out of the measure, said that in view of criticisms on the subject, the Archbishop of York and he had requested the Dean of Arches to make inquiry throughout the dioceses of England as to the precautions taken to prevent harm to buildings of immeasurable historic interest and value. On the motion of Earl Beauchamp drafting amendments were made in Clause 3, and the following was substituted for the definition in Clause 22: "The expression 'ancient monument' includes any monument specified in the schedule to the Ancient Monuments Protection Act 1882, and any other monuments or things which in the opinion of the Commissioners of Works are of a like character, and any monument or part or remains of a monument, the preservation of which is a matter of public interest by reason of the historic, architectural, traditional, artistic, or archæological interest attaching thereto, and the site of any such monument or of any remains thereof, and any part of the adjoining land which may be required for the purpose of fencing, covering in, or otherwise preserving the monument from injury, and also includes the means of access thereto." The third reading was unanimously agreed to. The measure has yet to pass through the House of Commons.

The Bill for the extension of the Royal Exchange, lately promoted by the Manchester Royal Exchange Ltd., received the Royal assent on Friday last, so that nothing now stands in the way of an early commencement of the work of providing more accommodation.

Alterations and additions are now being carried out to "Holtslands," Fordcombe, Kent. "Holtscrest," the old Tudor farmhouse close by, has now been restored. The builder is Mr. Turley, of Speldhurst, and the architect Mr. Charles A. Longley, of London. The building operations are much hampered, owing to questions of right of way.

The corporation of Dublin have, with strange changeablenes, by twenty-six votes to four, at a meeting of the committee of the whole house, the attendance at which only totalled thirty members, decided to refer the plans of Mr. E. L. Lutyens, A.R.A., for the art gallery Metal Bridge site back to the Mansion House committee, to have them amended, so as to have arrangements made for vehicular as well as pedestrian traffic. We illustrated Mr. Lutyens's design in our last issue.

The Right Hon. Lord Dunedin, Lord Justice-General, and the Right Hon. Sir John H. A. Macdonald, Lord Justice-Clerk, accompanied by other Lords Commissioners of Justiciary, visited Glasgow on Monday afternoon, and opened the new Justiciary Buildings in Jail-square. The courthouse occupies an enlarged site in Jail-square, and it has greater court accommodation and more numerous auxiliary apartments have been provided. The work has been carried out to the designs, and under the supervision, of Messrs. Clarke and Bell, architects, Glasgow. It is almost three years since the operation of demolishing the old buildings began—exactly one hundred years after they were originally erected to the designs of Mr. William Stark.

LEGAL INTELLIGENCE.

LINDSAY NEAL AND CO. LTD. The undersigned liquidator of the above-named company intends to apply to the Board of Trade for his release, and any creditor may have to the contrary, if they see cause, notified to the Board of Trade before July 4. A summary of receipts and payments of the liquidator is annexed:—

To balance handed over by the Receiver for the Debenture Holders ...	£124 6 3
Total realisations	£174 6 3
By Board of Trade and Court fees, stamps, stationery, printing and postages in respect of eight bankruptcies, creditors, and debtors, and for law at all ...	£31 10 0
By law costs of petition, £2 0 0	
By law costs of solicitor to Liquidator ... £10 0 0	
	£12 0 0
By Liquidator's remuneration, fixed by the Court, preliminary, all other accounts, expenses	£5 0 0
By person appointed to assist in preparation of statement of affairs ...	£3 3 0
By cost of notice in Gazette and local papers	£1 0 0
By incidentals or tax	£1 3 5
Total cost and charges ...	£174 6 3

Creditors may obtain any further information by inquiry at the office of the liquidator, H. G. Ferguson Davie, 61½, Fore-street, E.C.

LAWSUIT OVER A LIFT ENDS IN CONSENT JUDGMENT AND A £5 VERDICT. In the King's Bench Division last week the death in July last of the Duke de Loge through falling down the shaft of a lift at the house of Mr. John Arthur James in Grafton-street, Piccadilly, was referred to before Mr. Justice Bucknill and a jury, when Mr. James sued the Otis Elevator Company, Ltd., for damages for breach of contract by the defendants. The defence was a denial of the breach, and a statement that there had been variations of the contract. It was contended for the plaintiff that the defendants failed to provide proper automatic latches to prevent the opening of the door unless the car was opposite. For the defence it was stated that after the installation of the lift alterations made by somebody else caused the state of things that existed at the time of the accident. The proceedings ended with a consent judgment for the plaintiff for £5 and costs.

A VERBAL AGREEMENT WITH BUILDERS.—Goodwin Brothers v. Damper.—At the Kent Assizes, William Goodwin and Charles Goodwin (trading as Goodwin Brothers, builders, Tunbridge Wells) were claimants for a sum of £454 2s. 9d., a balance of account alleged to be owing to them by Sarah Rachel Damper, under a verbal agreement made at Fordcombe in October or November, 1903. The previous hearing of the case was reported in our issue of March 17 last, p. 356, last volume. The plaintiffs were now represented by Mr. Hohler, K.C., and Mr. Harker, and Mrs. Damper was represented by Mr. Simmons.—Charles Goodwin, one of the plaintiffs, said the work was begun in November of 1903, under Mr. Willard as architect. In cross-examination, the plaintiff, Charles Goodwin said that when he took the contract on he had not a very big business, and worked through the job himself as a bricklayer. The amount at which he tendered for the work was £755. In addition, he had received £160 in respect of stables, and £104 for billiard-room. The contract was a verbal agreement, and, as far as he knew, there was nothing in writing confirming that agreement. Defendant did not complain of cracks in the plaster until the latter part of 1904. Re-examined: Witness had actually commenced work under this contract before any verbal arrangement was made. William Goodwin confirmed the statements of his brother. In cross-examination, it appeared that neither of the plaintiffs could recollect whether the contract was begun in September or October, 1903. Mr. W. Goodwin now said that it was in November 1903, but it appeared that at the Court of Appeal he had said it was in September. Evidence produced, given at previous courts, showed that Charles Goodwin had said it was about October, November, or December.—Mr. Simmons submitted that the agreement set out was quite another kind of agreement.—Mrs. Sarah Rachel Damper, in defence, said that she had never asked the plaintiffs to wait for the money. She did not think the addition referred to the billiard-room and stables. In reply to counsel by his lordship Mr. Damper said that he had offered them the £755 job and the billiard-room and the stables, if they would put her house right, and she would not pay the farm account until she had paid for the house. Mrs. Damper added that she had paid for the house, except

the last certificate, and also the farm account. The Goodwins had not put her house right, and it had cost her over £400 to put it right, for which she had receipts. Mrs. Damper produced photographs containing illustration of cracks in the plaster of the house. Cross-examined, Mrs. Damper said that the sinkage of the foundations of the house were not first called to her notice by Mr. Willard in 1904. She had pointed out the sinkage long before 1904, and was told that it was the plaster cracking.—Mr. Simmons said that the defence in this case was the Statute of Limitations. He submitted that Mrs. Damper had faithfully and punctually carried out her obligations. The jury returned a verdict for the plaintiff, and his lordship gave judgment for the plaintiff, subject to such sum of the Official Referee would find, and costs. Mr. Simmons later appealed for stay of execution, which his lordship refused, remarking that he could not see a chance of the lady succeeding in the Court of Appeal.

VALUATION OF GRASS FARMS.—Mr. J. Gould Drew, F.S.I., of Exeter, has made his award in the Norton Malreward grass farm case, in which he was referee in an appeal by Dame Emily F. Smith against the provisional valuation of the farm by the Commissioners of Inland Revenue. The appeal was brought as a test case, in order to obtain a judicial decision as to whether so much of the property as consists of pasture land must be regarded as divested of the growing turf, the presence or absence of which would obviously make a very considerable difference in the value of the site. There were four sittings at the Surveyors' Institution before Mr. Drew, and the proceedings were reported in our issues of May 23 and 30 last, pp. 732 and 767. The referee's award is: (1) That the gross value should be £11,935. (2) That the total value should be £11,819. In this sum are included the tenant's interest in the unexhausted manures and tillages, but for which the gross and total values would each have been decreased by £300. (3) That the full site value should be £4,625. In arriving at this figure, Mr. Drew has considered the farm as divested of (a) the grass, and (b) the road from Norton Green to the house and buildings, but he has not considered (c) the 490 yards of masonry and dry stone walls nor (d) the works of water supply not admitted by the respondents to be divested. If he had not considered (a) the grass, and (b) the road as divested, the above figure of £4,625 would have been increased by £1,332. If he had considered (c) the walls, and (d) the works of water supply not admitted by the respondents to be divested, the above figure of £4,625 would have been decreased by £510. (4) That the assessable site value should be £4,143, and, in arriving at that figure he has not made a deduction under Section 25 (4) (b) in respect of any part of the total value attributable to the expenditure upon agricultural drains and works of water supply not admitted by the respondents to be divested, but a deduction of £66 is made under Section 25 (4) (d) in respect of the grass laid down by the tenant, and a deduction of £300 in respect of unexhausted manure and tillages.

HALL GREEN BUILDER'S AFFAIRS.—A meeting of the creditors of Henry Joseph Sealey, trading as H. J. Sealey and Sons, Stratford-road, Hall Green, builder, was held at the Official Receiver's offices, Corporation-street, Birmingham, last week. The statement of affairs showed liabilities of £767 1s. 10d., and a deficiency of £743 8s. 3d. The debtor gave as causes of his failure "taking contracts at too small a margin of profit, upon which losses were eventually made, owing to the rise in the price of building materials." The Official Receiver (Mr. A. S. Cully), in his observations, stated that the debtor said he commenced business as a builder and contractor about 1904, with a capital of £250, representing his savings as a journeyman bricklayer and sub-contractor. He engaged in building, both on speculation and contract; but he had, he alleged, kept no books other than a bank pass book, and many of his invoices and receipts had been destroyed within the last three or four months. His last transaction appeared to have been a contract to build eighty-one houses in Bromyard road, in respect of which he had about £370 to draw on completion. The owner had entered into possession, and it was estimated it would cost more than that amount to complete the contract. The unsecured liabilities were solely in respect of purchases for building purposes, practically all the materials having been supplied during the last twelve months. The Official Receiver was appointed trustee.

ARCHITECT SUED FOR FLOORING WORK.—An action was brought in the King's Bench Division on Saturday last, July 5, before Mr. Justice Atkin, sitting without a jury, by Sidney Francis Bowling, trading as B. Ward and Co., flooring specialists, of Kingsway, Cardiff, against Mr. Henry Sanders, 10, Windsor-place, Cardiff, architect, to recover £138 1s. 4d. for work and labour done in connection with the flooring of a building at City-road, Cardiff, called the Gaiety Cinema Theatre, under an order of Jan. 24, 1912.—The defendant denied liability, and said he did not enter into the contract as a principal, but as agent for a company. —For the plaintiff, Mr. Parsons appeared; and for the defendant, Mr. Inskip.—The case for the plaintiff as presented by Mr. Parsons was that he had known the defendant as an architect for some time, and he understood that the defendant sometimes engaged in buying and selling buildings on his own account. The defendant said he entered into the contract whereby the plaintiff executed the work as the agent for the company that had to do with a theatre, which company had since been wound up.—Plaintiff gave evidence in support of his claim, and said he did not know that the defendant purported to act as agent for any company.—In cross-examination, witness said he could not say who told him about the contract, but he did not hear of the work through the medium of an advertisement on the building site. He knew that the defendant was the architect of the building, and he thought the project was one of his own speculations. He denied that it was suggested to him that if his work was accepted he should take some of the payment in shares.—Mr. Sanders, the defendant, in the witness-box said that a company called the Cardiff Electric Theatre and Rink Company was formed and a prospectus issued. He was architect to the promoters, and later to the company. There has appeared a board on the building site announcing details of the share capital of the company and giving his (defendant's) name as architect. He did not enter into this contract as principal at all.—Cross-examined, witness said he only speculated on his own account in very small matters.—Other evidence was given in support of the defence, and Mr. Justice Atkin ultimately said he felt he was bound by the contract, and although he thought the plaintiff knew that the defendant had a principal, and knew that he was acting as architect, there was nothing to prevent Mr. Sanders from making himself personally liable. The plaintiff would succeed upon the contract, but as he (the judge) was not satisfied with the verbal evidence of the plaintiff in the case, he would give judgment for him without costs.

UNITED STONE FIRMS.—LIQUIDATOR APPOINTED.—A meeting of the shareholders of the United Stone Firms, Ltd., whose registered offices are in Nicholas-street, Bristol, was held last Friday at the Grand Hotel, Bristol, when Mr. Harvey Preen, of London, was appointed liquidator. It is understood by the *Bath Herald* that the total liabilities will exceed £500,000. It will be remembered that the United Stone Firms took over the business of the Hard Stone firms, and therefore many local people are financially interested. The late holders of debentures in the Hard Stone Firms, Ltd., hold first debentures on a portion of the property amounting to £14,960, and it will be welcome news that the second debenture-holders are willing to take over the first debentures and pay the value plus the six months' interest which is due. These facts are set forth in the following letter which is being sent to the late owners of debentures in the Hard Stone Firms by Messrs. Long and Lavington, solicitors, of 3, Northumberland-buildings, Bath:—"Re United Stone Firms, Ltd., in liquidation. — On behalf of Messrs. Isaac Sumsion, G. J. Long, and M. W. Colchester Wemyss, the trustees of the series of debentures in which you are interested as a late owner of debentures in the Hard Stone Firms, Ltd., we beg to inform you that the trustees, in order to protect your interest, have been compelled to appoint a receiver. The United Stone Firms, Ltd., have stopped business. The second series of debenture-holders are making arrangements to take over and pay off your debentures, and we shall therefore be glad if you will let us have such debentures as you hold with as little delay as possible, in order that we may effect the necessary transfers, and obtain your principal moneys and interest." It is stated that the bank having paid off the Hard Stone debenture-holders, have appointed Mr. Matcham to act on their behalf, and have asked the United Stone Firms to pay £55,000 before they agree to the firm going on trading. The Hard Stone Firms were an amalgamation of businesses, with quarries spread over a very wide district in the West of England, but with headquarters and offices at Bath. The three concerns that had been linked together were the old Bristol District Pennant Firms, the Mid-Somerset Lias (in which trade the Hard Stone Firms had a controlling power and did a big business), and the De Lank Cornish Granite. They had practically the same directors as the Bath Stone Firms, and thereby secured a good deal of local capital. They were unsuccessful, being unable to weather the heavy slump in the building trade which followed the South African war. The slump continued from 1903 to 1909, and the Hard Stone Firms lost every year. They then sold out to the United Stone Firms, the terms arranged by the liquidator (Mr. George Long) being that the United Stone Firms should buy the Hard Stone Shares at the price of two United Stone Firms £1 shares for each Hard Stone Firms' £10 share, and put the debentures of the Hard Stone Firms in front of all their assets. This practically meant a combine of all the hard stone concerns in the West of England. The United Stone Firms originated with the amalgamation of all the quarries in the forest of Dean district into the Forest of Dean, Ltd. This traded for some years, but eventually the manager secured the co-operation of a Bristol solicitor, and the United Stone Firms bought the Forest of Dean out. The new organisation then bought up all the quarries that were decided to be doing the chief business in the West of England, and then purchased the Hard Stones, Ltd.

ARCHITECT AND SURVEYOR SUES CANON FOR LIBEL.—Smith v. Streatfeild.—In the King's Bench Division, on Tuesday and Wednesday, July 8 and 9, Mr. Justice Banks and a common jury had before them the consideration of an action brought by Mr. Cyril Wontner Smith, architect and surveyor, and surveyor of ecclesiastical dilapidations to the Archdeaconry of Oxford, against the Rev. Canon Geo. Sidney Streatfeild, of Goddington Rectory, Bicester, in the county of Oxford, claiming damages for alleged libel contained in a pamphlet dated Oct. 12, issued to the Rural Deans of the Archdeaconry of Oxford.—The Robert Spennell Press, of Warwick, were also sued as the printers and publishers of the pamphlet.—For the defence it was pleaded that the words in their natural and ordinary meaning were true in substance and in fact, that the occasion was privileged, and that the words were published bonâ-fide and without malice.—Sir Fredk. Low, K.C., M.P., and Mr. D. Kerly appeared for the plaintiff; and Mr. McCall, K.C., and Mr. McCardie for the defendants.—Sir Fredk. Low said that Mr. Wontner Smith was an architect and surveyor of 16 years' experience; he practised at Finsbury-circus, E.C., and had an office at Oxford. He was appointed diocesan surveyor for part of the diocese of Oxford, and certain duties devolved on him under the Ecclesiastical Dilapidations Act. His appointment was made by the Archdeacon and Rural Deans of the diocese, and he was appointed to succeed Mr. S. Slingsby Stallwood, F.S.A., in regard to the work to be performed within the archdeaconry of Oxford. At Goddington there was a rectory that at the time these questions arose was held by a clergyman named Brown, who had during a period of 18 months, ended about the middle of 1905, spent about £1,000 on the buildings and the farm of which the living consisted. In 1911 Mr. Brown exchanged livings with the Rev. Canon Streatfeild, and the agreement was that each clergyman should procure from his diocesan surveyor under the Act a certificate to say that the rectory in each case was in a proper condition of repair, so that the holder might be protected from having to expend any further sum for a period of five years. In regard to Goddington, plaintiff gave a certificate that the sum of about £10 was expendable by the outgoing rector, Mr. Brown. The defendant appeared to be dissatisfied with plaintiff's work, and he had made the most serious accusations against Mr. Wontner Smith in the pamphlet in question. The allegations were in effect that the plaintiff had fraudulently concealed certain dilapidations at Goddington Rectory, that he had acted with gross negligence, and that with a total want of good faith he had practically conspired with Mr. Brown, with the result that heavy losses were incurred by Mr. Streatfeild, through not having a proper and sufficient certificate with regard to the dilapidations. Counsel went on to say that the pamphlet complained of had passages to the following effect:—" . . . . I came into this diocese early in June of last year . . . . Before leaving my late benefice, Fenney Compton, after a careful survey and report thereupon by the diocesan inspector, I spent £278, including fees, in putting the rectory house generally in good repair . . . . According to the written agreement with the Rector of Goddington, the Rev. J. R. Brown undertook to act in the same manner in respect of the living of Goddington . . . . On coming to Goddington I found to my amazement that the rectory house and glebe were generally in a most unwarrantable con-

dition of disrepair, and learned that Mr. Wontner Smith had surveyed the place on May 12, and issued a five years' certificate on May 24 . . . . Mr. Wontner Smith's report specifies trifling repairs to be executed to the farm, the cost being £10. N.B.—The greater part of the work was not executed by the outgoing rector, and Mr. Wontner Smith issued a five years' certificate without revisiting Goddington to see that the work ordered by him was done . . ." Commenting on this, Sir Fredk. Low said that the remark about the Rev. J. R. Brown undertaking to act in the same manner in respect to Goddington was an incorrect way of expressing it as he was only to expend such sum as the surveyor should direct him to spend. It was untrue that the place was in an unwarrantable state of disrepair, as the work needed to be done only amounted to a few pounds. As to the suggestion that the plaintiff did not revisit the place to see that the work was done the plaintiff's view was that the work was so trifling that £10 would cover it. Although the amount of work to be done was almost negligible, the amount of abuse that had been levelled at the plaintiff was almost incredible. Sir Frederick went on to say that the defendant had stated that, finding it necessary to undertake repairs on a large scale, he had secured the bishop's permission for a re-survey, with a view to obtaining a loan from the Queen Anne's Bounty, and that Mr. Stallwood had, at the request of the late bishop, re-surveyed the place, and estimated that the amount required to be spent was £125. It was also suggested that whereas the plaintiff had ignored certain rectory repairs, Mr. Stallwood's report had specified 24 "some of them very important." As a matter of fact (said counsel) these embraced such trifling matters as window fasteners and defective plaster, probably caused by the moving of furniture. Eventually the defendant suggested that his position as the result of it all was that, after spending £278 at Fenney Compton, he was faced with an expenditure of £125 at Goddington, and, as a matter of fact, a good deal more, as the lowest tender considerably exceeded the surveyor's estimate. Sir Frederick went on to say that the defendant had accused the plaintiff of making untrue statements in a letter to the bishop. He had also made a great fuss about a certain culvert, but since the issue of the writ there had been a communication to the effect that Mr. Streatfeild had "misconceived the whole matter." This clergyman had charged the plaintiff, who was a gentleman of experience, with incompetence and neglect, and on the most flimsy evidence he had charged him with conspiring with a brother clergyman to defraud him. He would show the jury that the defendant's action was unwarranted, and that in the ultimate the work executed at the rectory after Mr. Stallwood's survey was insignificant, amounting to a few pounds only. Sir Frederick read a mass of correspondence in the case, and said that the plaintiff wrote to the bishop (in reply to a letter in which the bishop asked for an explanation of the discrepancies between the report of Mr. Stallwood and himself) as follows:—". . . . The discrepancy between the amount of Mr. Stallwood's assessment and mine is so great that I can quite appreciate your difficulty in not understanding it. One would naturally come to the conclusion that I had taken no trouble at all to ascertain the real condition of the premises, and had passed over obvious defects that Mr. Brown should have been asked to make good; but this is not the case. My survey occupied the best part of a day, and before going round the premises I saw the maps in Mr. Brown's possession. I went everywhere, and inspected all the buildings and the glebe, and formed the opinion that the premises were in very fair order . . . . One or two repairs were necessary, and those I embodied in the report. . . ." The plaintiff added in the letter that he had seen the report of Mr. Stallwood, and he thought £10 would cover the repairs, which he (plaintiff) did not regard as important. There was an item for painting that certainly should not be included. He added the opinion that dilapidations did not mean decoration, and so long as paint formed a sufficient preservative he must be satisfied. The letter also added that Mr. Brown, who only held the living between three and four years, had painted the whole of the building twice, and that Mr. Stallwood's report dealt with repairs that were not essential, but must be regarded as improvements, and for which the late incumbent was not responsible. Plaintiff added: "The whole matter is simply a question between Mr. Stallwood's opinion and mine. He evidently went out of his way to find fault. It is easy enough to go about making work, but it is not my practice, nor do I consider it to be the intention of the Act. A diocesan surveyor's position is an unenviable one and it is extremely difficult to decide whether a thing is bad enough to renew, or may be left or repaired. Each case must be taken on its merits, and I honestly try to do my duty in a very difficult position without favouring either side. . . . . The matter has worried me a good deal, but on looking back I cannot see that I have anything to blame myself for, except that I ought to have gone down when the work was finished; but had I done so it would not have affected my report, which has been the main cause of all the trouble . . . ." Eventually the bishop intimated that he proposed to take no further steps in the matter. Then the defendant wrote alleging that the plaintiff's letter was full of misrepresentation and misstatements, and said he would make the facts public. The Chancellor of the Diocese (Sir Wm. Onslow) was also brought into the matter, and he said that if the bishop did not intend to carry the matter further, the bishop was wholly right. —The plaintiff gave evidence in support of his case, and said he made a thorough and proper inspection. Surveyors often differed in opinion as to the condition of fences and the need of renewal, and so forth. As to Mr. Stallwood's report, the work that he recommended would cost about £1 (internal work) and £2 external. The fencing would cost about £80. In his opinion Mr. Stallwood put down things to be done that he did not regard as "dilapidations" at all.—In cross-examination, Mr. Wontner Smith said he did not inspect cesspools, and he would take no notice of drains unless there was obviously something wrong. Mr. Stallwood had exercised his judgment as he thought fit, but witness did not agree with him. It was absurd to suggest that his inspection should have taken a day or a day and a half.—Re-examined: He acted in perfect good faith throughout.—The Rev. J. R. Brown, predecessor of the defendant at Goddington, gave evidence that with the exception of a few trifles, the house was in a perfect state of repair. It was built by the Ecclesiastical Commisioners' own architect, and was one of the best-built houses he had ever lived in. When plaintiff came down, he went round with him on a tour of inspection. The evidence that Mr. Wontner Smith had given was perfectly correct. The work ordered by the plaintiff was duly completed, and £1,000 was spent on the place about the years 1904-5.—Mr. Herbert Passmore, joint architect to the Ecclesiastical Commissioners, said he knew the plaintiff as a competent architect. He had seen the reports by the plaintiff and by Mr. Stallwood. As to drainage, he thought that the acts the plaintiff had deposed to doing were ample. He did not think that an incumbent could properly be called upon to repair a disused culvert. After other evidence, a legal argument arose on the question of privilege, and the position of the printers, and Mr. Justice Bankes said he would reserve his decision on these legal matters.—Mr. McCall, K.C., in his address for the defence, urged that the Diocesan Surveyor had to perform an almost judicial duty when he made his report. Counsel characterised the report of the plaintiff as a careless one, and contended that there was no evidence of intention by the Crown to maliciously injure the plaintiff. —Mrs. Streatfeild, wife of the defendant, deposed that there were smells from the cesspools, and they had to be cleared out. Subsequently bad smells continued, and various defects in the drainage sytem were found. Other evidence of a similar nature was called.—The defendant, Canon Streatfeild, gave evidence that he paid £149 8s. for repairs mentioned in the report of Mr Stallwood. In regard to the pamphlet, he felt he was justified in what he wrote: but he never really meant to charge Mr. Wontner Smith with stating what he knew to be untrue. The cross-examination of defendant was still in progress when we went to press.

A rest-home for convalescents is being built at Sproughton, near Ipswich. Messrs. Catchpole, of Ipswich, are the contractors.

The Royal Hotel on the West Cliff at Whitby, erected in 1848, has been reconstructed and enlarged from plans by Mr. Sanderson, of Scarborough. The contractor was Mr. Plaxton, Scarborough. The electric passenger-lift was installed by Messrs. Waygood, of London; and Mr. Hunter was the clerk of works.

The Department of Historical Monuments of the French Government is about to begin the restoration of the ancient episcopal Palace of Rheims, which the municipality of that city will convert into a museum. The palace was reconstructed in 1671. During the Revolution it was used as a court of justice, and was restored to its original purpose at the coronation of Charles X.

WATER SUPPLY AND SANITARY MATTERS.

BARNARD CASTLE SEWERAGE.—For a long time the Barnard Castle Urban District Council have been troubled with defective sewers in the Bridgegate portion of their district. Last year they accordingly instructed Messrs. Taylor and Wallin to prepare a scheme for new sewers in this neighbourhood, which has now received the approval of the Local Government Board. Tenders were invited last month, and that submitted by Messrs. Naylor and Son, contractors, Girlington, near Bradford, has been accepted, as also a tender for the construction of an underground convenience in the Market-place.

HAYLE.—The new waterworks for Phillack, Hayle, were opened last week. The cost of the scheme is about £7,500. Water has been brought into the district from a disused adit at Herland Mine, Gwinear, just above Nanspusker. At present the yield is more than a million gallons per twenty-four hours; it will never be less than 300,000 gallons which is more than double the quantity required for the consumers, who now number 3,500. At the source there have been installed two three-throw, electrically-driven ram-pumps, with a capacity of 10,000 gallons per hour. These appliances will pump the water to a service reservoir, holding 114 000 gallons, at Wheal Alfred Consols. Mr. C. L. Duke, the contractor, Plymouth, presented an inscribed silver key with which to open the engine-house. He hoped that the supply would be as satisfactory as its most enthusiastic supporters wished it to be. In the town of Plymouth, in which he lived, they celebrated a yearly anniversary in connection with their water supply, which was inaugurated by Sir Francis Drake, and on the site of the weir they drank to his memory in these pious terms: "May the descendants of him who gave us water never want wine." They could put what emphasis they liked on the word "want."

SKELMERSDALE SEWAGE DISPOSAL.—The Skelmersdale Urban District Council have adopted a scheme prepared by Messrs. Taylor and Wallin, civil engineers, Newcastle-upon-Tyne and Birmingham, for the construction of intercepting sewers and new sewage-disposal works for their district. The purification works will be on the modern bacterial system of the most up-to-date nature. The estimated cost of the works is £12,000, and application is to be made to the Local Government Board for the necessary borrowing powers at once.

The Public Rights of Way Bill passed through committee of the House of Lords on Tuesday, and, as amended, was reported to the House.

A United Methodist Chapel at Bideford, built from plans by Mr. W. Beddoes Rees, of Cardiff, was opened on Friday. It is Late Gothic in style, accommodates 800 persons, and cost £7,200.

Lerwick Town Council have appointed Mr. George H. Macgregor, civil engineer and surveyor, Inverness, to be burgh surveyor of Lerwick, at a salary of £110, rising to £140 per annum; and, failing Mr. Macgregor, Mr. James M. Alexander, South Queensferry.

The new stage footbridge, to relieve the congested ferry traffic on the Liverpool Landing-stage, was placed in position on Tuesday. The bridge was built by Messrs. Francis Morton and Co., Liverpool, and was erected by Messrs. J. H. and W. Bell, contractors for the actual constructional work. The bridge was fully built at the works of Messrs. Morton and Co., and then taken to pieces and brought piecemeal to the stage where it was erected. It is 150ft. long by 29ft. wide, and the total weight is 200 tons.

The following dissolutions of partnerships were officially announced on Tuesday: J. G. Dunn, J. Dallas, and B. M. Lloyd, carrying on business as architects and surveyors, at Newhall-street, Birmingham, under the style of John G. Dunn, Dallas, and Lloyd, so far as concerns J. G. Dunn: and J. J. Stevens, W. H. H. Lunn, and C. G. N. Trollope, carrying on business as quantity surveyors, at Broadway-court, Broadway, Westminster, under the style of Widnell and Trollope, so far as concerns J. J. Stevens.

The new mines rescue-station which has been provided by the Cannock Chase Coalowners' Association in Victoria-street, Hednesford, was formally opened last week. A portion of the old gasworks at Hednesford was purchased at a cost of £400, and has been remodelled for the purposes of a rescue-station at a further outlay of between £2,500 and £3,000. Mr. H. G. Gilbert, of the Cannock Chase and Rugeley collieries, prepared plans for the alteration, which were placed in the hands of Messrs. T. Mason and Son, of Hednesford.



GROUND FLOOR PLAN.

WALLINGFORD COURT, BERKSHIRE.—Messrs. Detmar Blow, F.R.I.B.A., and F. Billerey, Architects.

Our Illustrations.

WALLINGFORD COURT, BERKSHIRE.

The drawing here reproduced is now at the Royal Academy Exhibition, and it represents the end view of Wallingford Court, an entirely new mansion in Berkshire, from the designs of Messrs. Detmar Blow, F.R.I.B.A., and F. Billerey, of Westminster. The intention of the architects is that this house should be in complete harmony with its environment, and typical of an Englishman's country residence, quite free from foreign influence. The unity of a Classical type of building at the same time has been preserved by the adoption of a symmetrical grouping of its parts: the entablatures of the façades have been conceived, together with the use of pilasters, so as to harmonise and unify in all the fronts the use of mullioned windows and projecting bays, after the manner of the Northamptonshire work of John Thorpe, who designed Kirby Hall. The plain facings are to be of rough-faced Gibraltar rubble, all square-jointed, all the moulded and worked parts being in Chilmark stone. The roofs are to be covered with Stonesfield slates. The accompanying plans illustrate the lay-out of the mansion and the details of its internal arrangements, including two grand staircases situate at the ends of the long gallery on the first floor.



FIRST FLOOR PLAN

WALLINGFORD COURT, BERKSHIRE.

Messrs. Detmar Blow, F.R.I.B.A., and F. Billerey, Architects.

HOUSE AT KINGSWOOD, SURREY.

The main walls are built in purple stocks, various in colour, and the dressings are of brighter red kiln bricks. The porches are of Portland stone, the cornice of brick. The roof is of red hand-made tiles, with lead hips and ridges. The chimney-caps are of moulded brick. The contractors are Messrs. Collins and Godfrey, of Tewkesbury. The architect is Mr. Ernest Newton, A.R.A. The drawings reproduced are now at the Royal Academy Exhibition.

DEPARTMENT OF JUSTICE BUILDING, WASHINGTON, U.S.A.

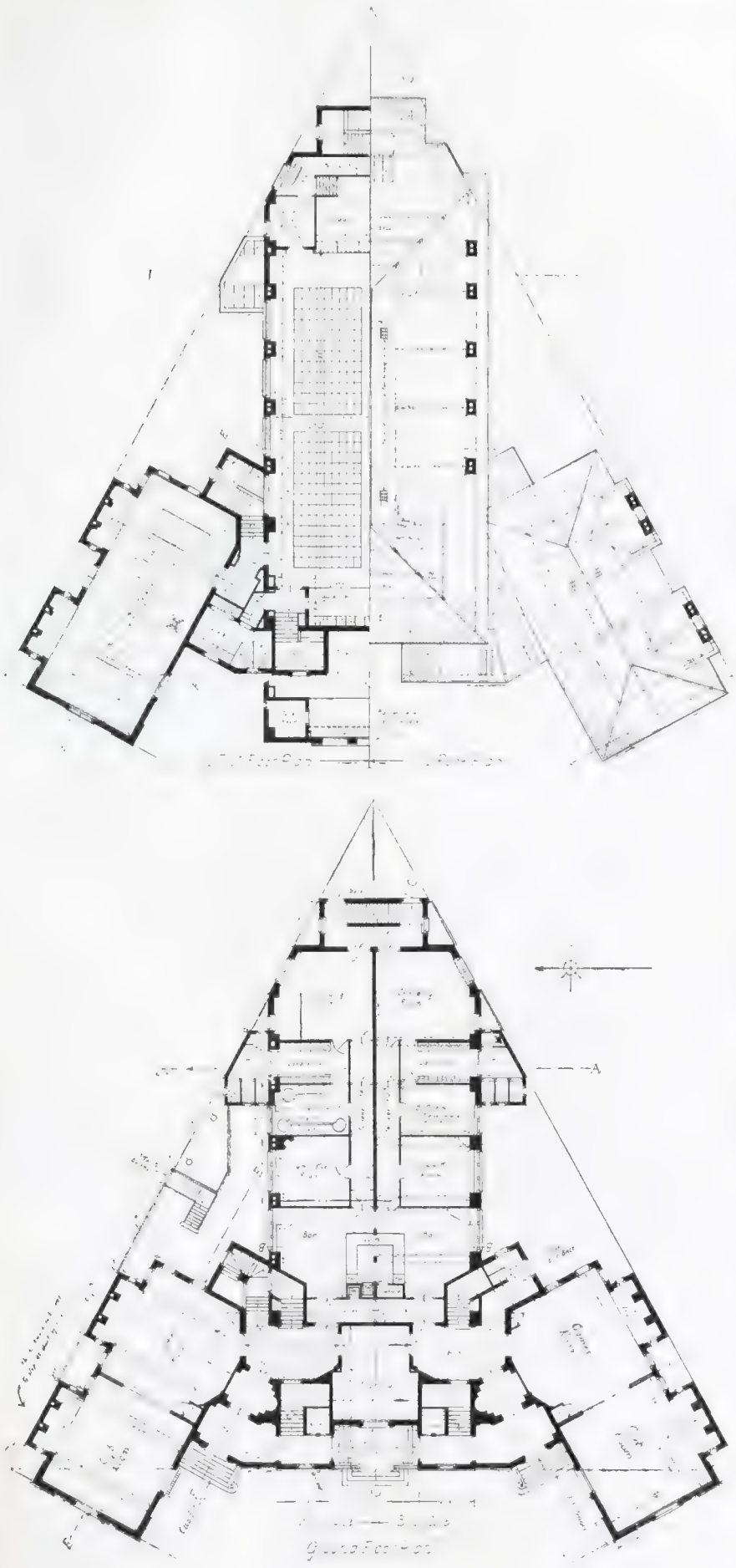
(For description of selected design see p. 38.)

THE ETON CLUBS, HACKNEY WICK.

Lord Roberts opened these buildings last week. They have been recently put up by Mr. Charles Price, of Bishopsgate, for a committee. The two club-houses are for boys and old boys respectively, and there is a large assembly-hall, a bar, and a library common to both clubs. In the basement is a skittle-alley. The site presented many difficulties, on account of its triangular shape. The materials used are golden yellow stock bricks, Portland stone, and red pantiles. Internally, the woodwork is painted grey, the furniture (much of which was designed by the architect) black; the walls are distempered in various light buffs and greys, and the ceilings are white. There is a considerable amount of Dutch wall-tiling, executed from the architects' designs. The main chimney-pieces are very large, and are built up of Daneshill bricks, with cast-iron hob grates designed for the place. All the electric fittings and door furniture are made of black iron. Mr. H. S. Goodhart Rendel, of Lincoln's Inn, is the architect.

HIGH SCHOOL, MOTHERWELL, SCOTLAND: SELECTED DESIGN.

There are no unsightly excrescences in this plan, and the playsheds for boys and girls serve as their respective entrances, and also give access to the conveniences external to the school proper. The classrooms, with dual desks, are on the ground floor, as stipulated, and the remainder on the first floor. Seven classrooms face south, five east, and four west. The chemical laboratory is isolated by a ventilated lobby. It is cross-lighted and ventilated. North lights of high elevation are employed in the art-room. The gymnasium, etc., occur over the cloakrooms, with a resilient floor. The housewifery rooms form a suite on the girls' side, anterior to the school proper. The cloakrooms are provided in bulk at the respective entrances, for better supervision and control. The lavatories required within the school are provided in separated sanitary blocks. The music-rooms are isolated, to prevent sound travelling into the adjoining rooms, by the use of thick walls. The heating is by low pressure on an accelerated drop



THE ETON CLUBS, HACKNEY WICK.—Mr. H. S. GOODHART RENDEL, Architect.

system. The windows will be of steel, with hoppers and double casements to their centre parts on the lower floors. Upstairs the bottom divisions have hoppers. Cross ventilation is insured by trunks and upcast shafts where there are no windows. The walling will be of brick, simply treated architecturally. It is suggested that Delabole slates should cover the roofs. Cement painted dadoes with plaster above in the classrooms, etc. Sanitary places, too, have [illegible] dadoes. The hall will be panelled, and entrance corridor to have tiled dadoes. The estimate, at 1d. per foot cube, is given at £3,605, so that the exact cost can be worked out on that basis; but the precise price per foot cube is not stated. Mr. John J. Burnet, LL.D., A.R.S.A., was the assessor in the competition, and Mr. S. B. Russell, F.R.I.B.A., of Gray's Inn-square, is the architect chosen.

The urban district council of Finchley have decided to construct a swimming bath in Squires-lane at a cost of about £4,500.

The Bakewell Rural District Council have decided to present a sum of £100 to Mr. A. Taylor, the retiring surveyor, in appreciation of his 30 years' service.

A parish hall is about to be erected on Brockley-rise, adjoining St. Saviour's Church. The architects are Messrs. G. M. and P. G. Silley, of Craven-street, Strand, W.C.

Mr. Edward A. Crane, of the architectural firm of Rankin, Kellogg, and Crane, Philadelphia, has been appointed by the mayor of that city to the position of city architect.

Progress is being made by Messrs. P. and W. Anderson, Glasgow, the contractors for the joint station reconstruction at Aberdeen, and a large amount of plant has been brought north.

Sidmouth Urban District Council are considering plans, which have been prepared by Mr. R. W. Sampson, M.S.A., of that town, for a housing scheme upon which the estimated expenditure is £11,300.

The foundation stone of a new Congregational school-church has been laid at Redditch, Stockport. Messrs. G. Barnes and Son, of London, are the architects, and Messrs. D. Eadie and Co., of Stockport, the contractors. The cost is estimated at £4,000.

The Bridlington Town Council have resolved to purchase thirty-five acres of ground from Mr. Y. G. Lloyd-Greame, of Sewerby House, for £14,000, and two houses for £900, for the purpose of converting the land into a public park and recreation grounds. The land is close to the North beach.

Plans prepared by Mr. John W. Dyson, architect, of Newcastle, for additional buildings at the Newcastle-on-Tyne City Lunatic Asylum, have been approved by the Home Secretary. The buildings comprise two villa blocks for 80 patients, isolation hospital for 6 patients, and nurses' home for 56.

The Birmingham City Council are building a new bridge over the River Cole which runs under the Stratford-road near College-road. The river is also to be diverted and straightened. The bridge will be erected of brick with stone facings in two 25ft. spans, and will have a width between parapets of 60ft.

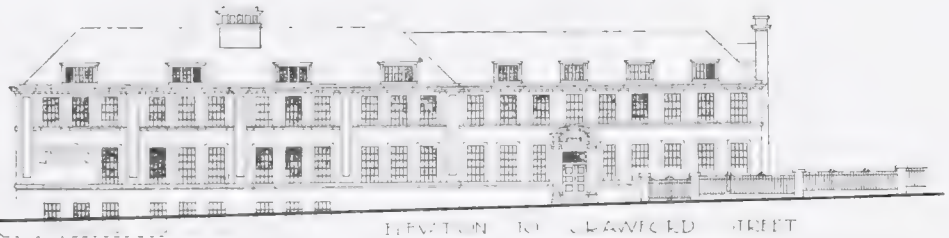
The city council of Birmingham have received by bequest from the late Mr. James Tertius Collins, for exhibition in their art gallery, three interesting water-colour drawings by David Cox, an important work by the late F. M. W. Wimperis, "A View at Verona," by the late William Callow, R.W.S., and "The Arch of Titus," by W. L. Leitch.

The Ipswich Town Council [illegible] on Wednesday week, almost without criticism, an addition of £33,500 to the capital of the electric light concern. About half this sum was required for services and mains extensions, necessitated by the growth of the business, and as to the other half the capital is required for tapping a new area to the eastward of the town, at points which cannot be reached by the present plant.
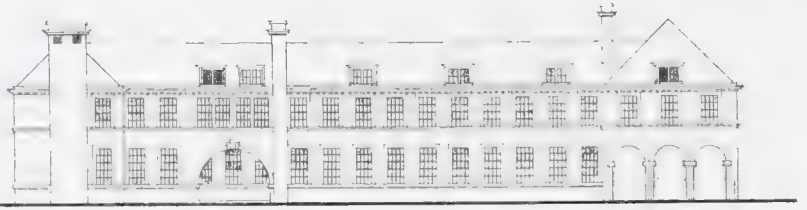
The Emperor William makes his twenty-first cruise in Norwegian waters a fortnight hence, and he will mark the occasion by presenting to Norway a colossal statue of Frithjof, the work of Professor Max Unger, which will be erected on a peak at Nagnaes, opposite Bapeholm, on the Sognefjord. The figure, the casting of which in bronze sections has just been completed, is 40ft. high, and weighs nearly fourteen tons.

The Sevenoaks Urban District Council have decided to erect a swimming-bath in the town as a memorial to King Edward VII. Last December Mr. Edward Kraftmeier, of Ashgrove, Sevenoaks, offered £3,000 towards the cost of the bath, which were estimated at £2,700. Mr. Kraftmeier's architect prepared two schemes, and it was found that the most suitable one would bring the cost up to £4,000, and Mr. Kraftmeier immediately increased his offer to that amount.

HIGH · SCHOOL , MOTHERWELL



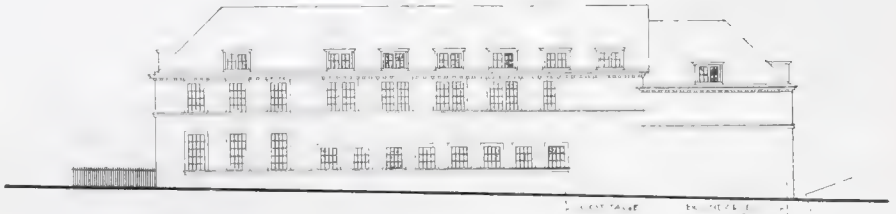
ELEVATION TO CRAWFORD STREET



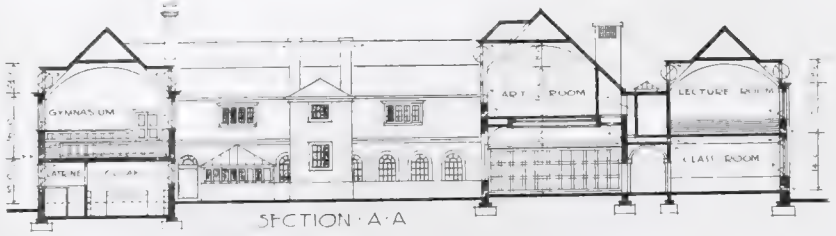
EAST ELEVATION



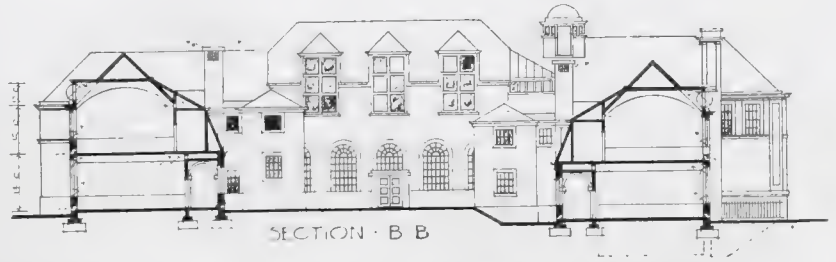
ELEVATION · TO · NIGEL · STREET



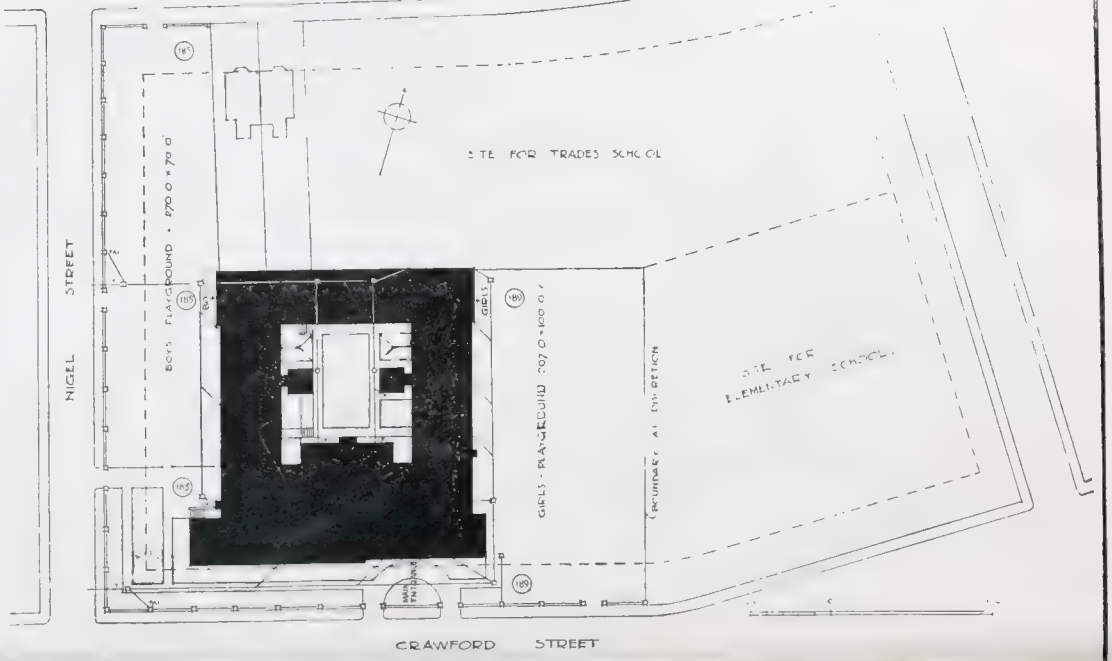
NORTH · ELEVATION

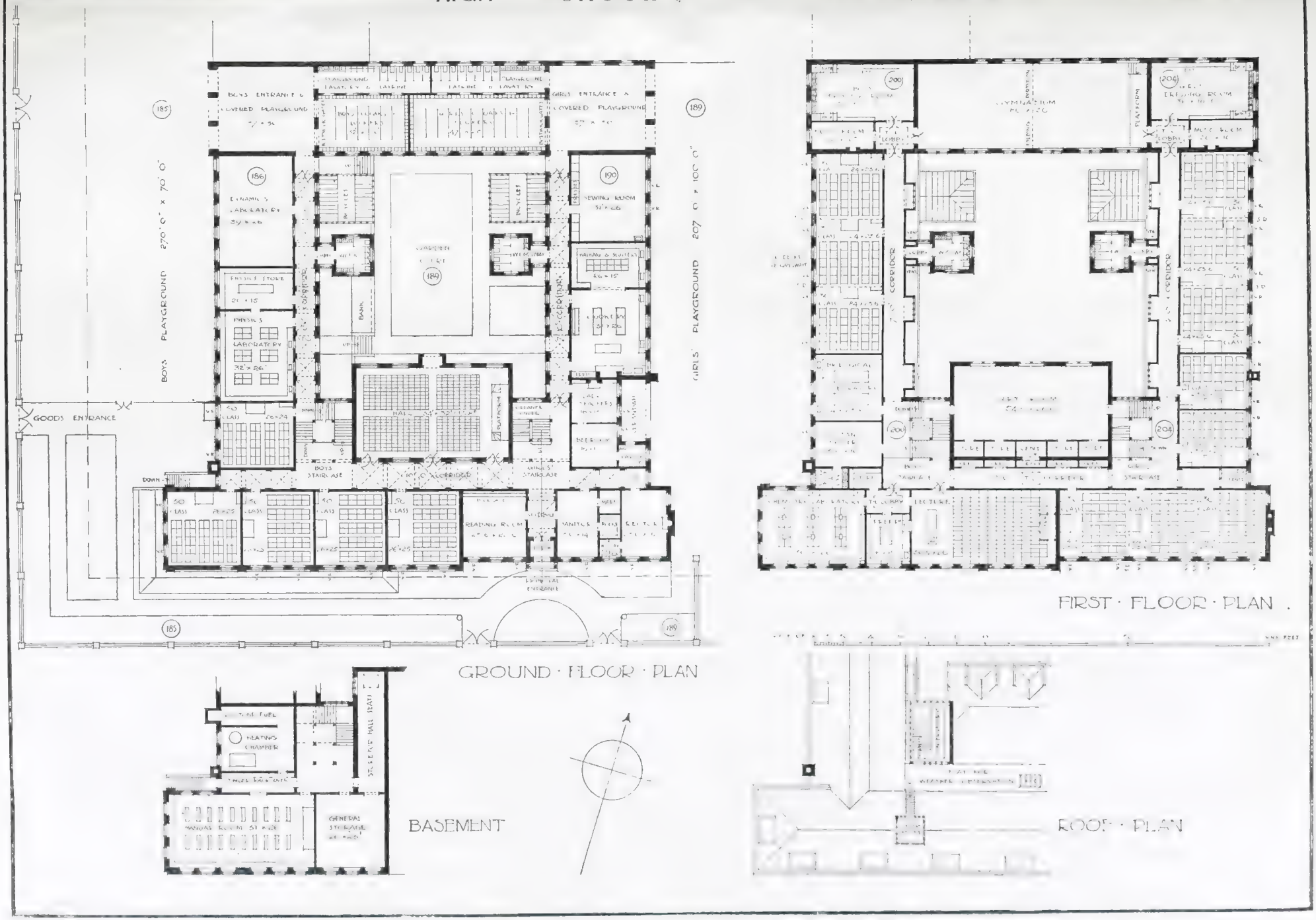


SECTION · A·A



SECTION · B B





SELECTED DESIGN. HIGH SCHOOL, MOTHERWELL, SCOTLAND.—Mr. S. B. Russell, F.R.I.B.A., Architect.

STATUES, MEMORIALS, &c.

BRISTOL.—The statue to Edward VII., erected in front of the Victoria Rooms, was unveiled by the King on Friday. The general scheme of the memorial was prepared by Messrs. Lanchester and Rickards, of Bedford-square, W.C. Competitive designs were invited, and out of twenty models sent in, that of Mr. Henry Poole of Wentworth Studios, Manresa-road, London, S.W., was selected by the committee, on the advice of Mr. Derwent Wood, A.R.A., and M. E. A. Rickards. The King is represented in Mr. Poole's statue standing in the robes of the Order of the Garter on a pedestal of Bath stone, which rises from a platform of granite.

KELVIN MEMORIAL.—On Tuesday next, at 3 p.m., the dedication will take place, in Westminster Abbey, of a window in memory of Lord Kelvin. The window, which is the result of action taken by engineers in British Dominions and the United States, has been placed in the north aisle of the nave, in close proximity to the one erected in 1909 by civil engineers to the memory of Sir Benjamin Baker, and has been designed and made by the same artist, Mr. J. N. Comper. The design is as follows:—At the head of the window is a cinquefoil containing the arms of Henry V., and his badges of the swan and antelope, as represented on his chantry in the abbey. The lights contain two large figures under canopies, both lights being framed with borders, having niches holding sixteen statuettes and thirteen shields relating to them. In the left-hand light is the figure of King Henry V. in armour (d. 1422); in the right-hand light is that of Abbot William Colchester vested as in the effigy on his tomb in the abbey (d. 1421). Within the canopy above the King is a picture of his coronation, and above the abbot a representation of the contemporary story of King Henry V. visiting the Westminster recluse on the night after his father's death. (N.B.—Immediately after his accession to the throne the King energetically recommenced the work of building the nave.) At the top of the canopy is a representation of the Annunciation, which is the dedication of the chantry chapel, and the upper statuettes in the border represent St George and St. Denys, who also appear in the chantry; and St. Crispin and St. Crispinian, on whose feast Agincourt was won. On either side of the King are the Dukes of Gloucester, Exeter, and Bedford, and Sir Thomas Erpingham. The other statuettes represent Richard Whittington, Lord Mayor of London, who superintended the building of the church on the King's behalf; the recluse, and six other monks—viz., Richard of Cirencester, historian; William of Sudbury, also a writer; John Lakyngheth, treasurer, responsible for much of the abbey building; Thomas Merkes, who became Bishop of Carlisle; Peter Combe, sacrist; and Richard Harweden, abbot, both connected with building the nave. In front of the pedestals of the two large figures are tablets held by angels, containing the words:— (1) In memory of Baron Kelvin, of Largs; (2) Engineer, Natural Philosopher. B. 1824. D. 1907. And beneath these, again, are the arms of Lord Kelvin and of Glasgow University. A special service, with music, is being arranged by the abbey authorities, and Mr. R. Elliott-Cooper, president of the Institution of Civil Engineers, will make the formal presentation of the window on behalf of the donors.

LIVERPOOL.—The Earl of Derby unveiled on Saturday, at St. George's Pierhead, Liverpool, a memorial to the late Sir Alfred L. Jones, K.C.M.G., the well-known shipowner, and founder of the school for tropical medicine. The memorial, which has been designed and carried out by Sir George Frampton, R.A., consists of a plinth of Aberdeen granite rising from steps, and surmounted by a bronze figure emblematical of Liverpool and its Shipping. The sides of the plinth are flanked by two magnificent female figures in bronze, emblematical of Commerce and Tropical Medicine. On the front portion is a bust medallion of the late Sir Alfred Jones. The height from the base to the top of the bronze figure is 30ft.

Limerick County Council have fixed the superannuation allowance of Mr. J. Horan, county surveyor, at £550 per annum.

Penzance Town Council decided on Saturday, by eleven votes to seven, to adopt a workmen's dwellings scheme, involving an expenditure of £9,300.

The Banbury Town Council, at a meeting in committee, interviewed six of the selected applicants out of a total of 151 for the post of borough surveyor, rendered vacant by the resignation of Mr. N. H. Dawson, and appointed Mr. G. E. Wrigley, of Sowerby Bridge.

Our Office Table.

The annual exhibition of the drawings done in the School of Architecture at University College, London, during the session, was opened on Saturday last, July 5, at 10 a.m., and will remain open daily (Sundays excepted) until Saturday, July 19. Hours, 10 a.m. to 6 p.m. The exhibition is being held in the Science Library in the main buildings of the college, the entrance to which is from Gower-street. Admission is open to the public.

The twelfth annual exhibition of antiquities discovered at Meroe, was inaugurated on Monday by Sir Frederick Kenyon at the Society of Antiquaries, Burlington House, and will remain open until Friday in next week, the 18th inst. It contains the results of the recent excavations by Professor Garstang and Mr. W. S. George, the architect. Four periods of history are revealed by the work hitherto done—the Early Meroitic (B.C. 650-300), the Middle Meroitic (B.C 300 to B.C. 22), the Roman Occupation (possible interregnum B.C. 22), and the Late Meroitic (B.C. 10 to A.D. 700). The objects excavated and now shown illustrate each of these periods. Mr. George has demonstrated the Hellenistic character of the Middle Meroitic period. On the waist belt of a well-carved statue are the remains of an inscription in Greek letters, giving the name of King Neteg-Amen (*c.* 150 B.C.) The most important archæological discovery of the year is the clear evidence that in the Hellenistic or Middle Meroitic era burial by cremation was introduced and adopted by the ruling classes. This, says Professor Garstang, may explain why in the great Necropolis, where tombs of the earlier and later periods are numerous, the Middle period is practically unrepresented. It is proposed to continue the excavations of the Royal City and to open up some of the greater temples and public buildings outside the city walls.

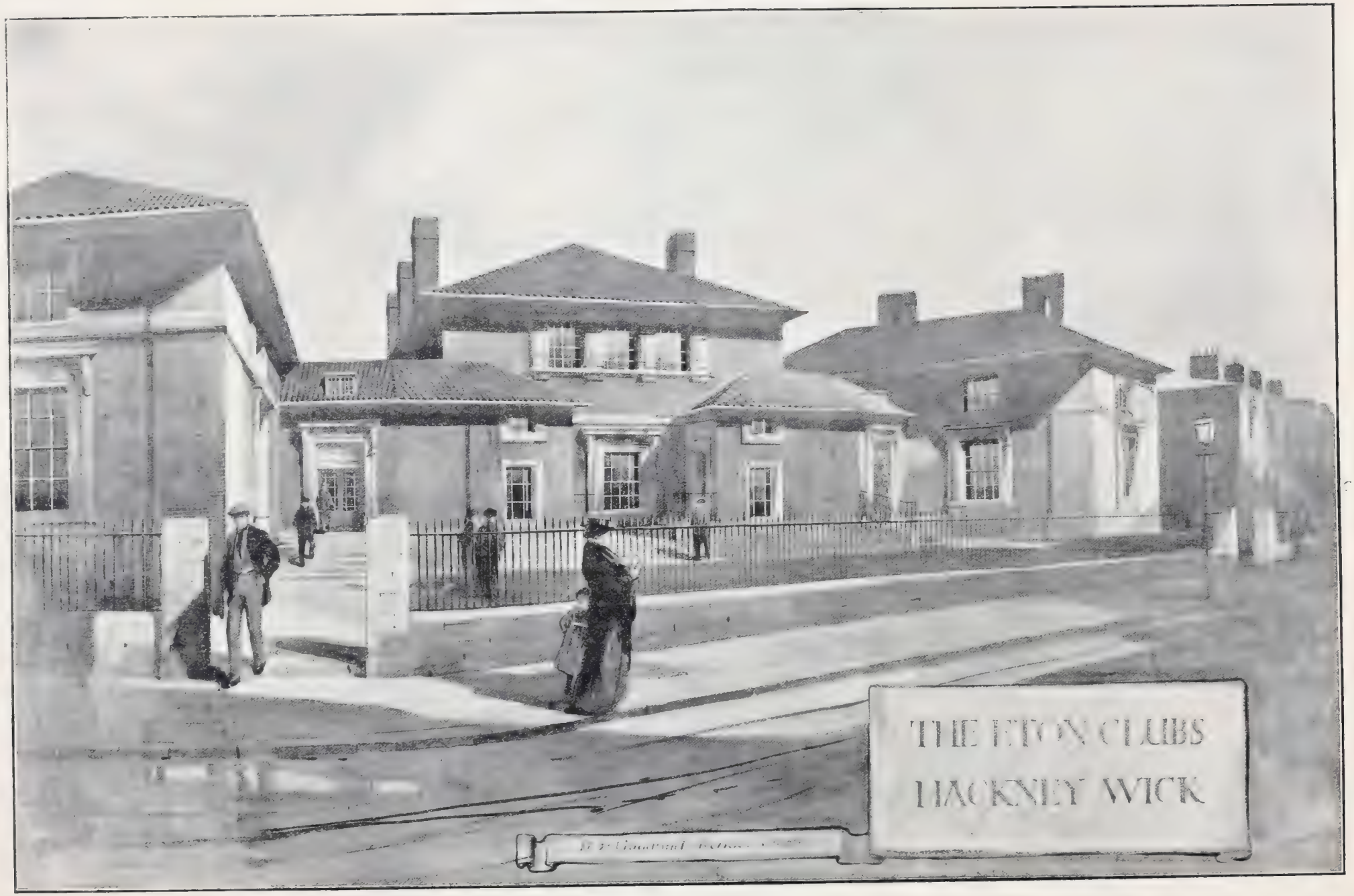
In view of the recent discussion in the House of Lords upon the Bill now before Parliament for the Protection of Ancient Monuments and of the Report of the Select Committee on the same subject, issued a few months since, the Archbishops of Canterbury and York are desirous to ascertain what steps are taken, on the issue of faculties in the different dioceses, to secure due protection, both on archæological and artistic grounds, for church fabrics which have to undergo repair or in which changes are being made. At their Graces' request a committee has been formed to undertake this inquiry, and to report to the Archbishops the information acquired together with any recommendations which the facts collected may suggest to the committee. The secretary is Mr. E. V. Oliver, Ecclesiastical Commission, Millbank, Westminster. The committee held its first meeting on Monday.

The joint bridges committee of the Norfolk County Council, in a report presented to that body on Saturday, stated that they have accepted tenders for the repair and reconstruction of forty-five highway bridges, which had been damaged by last year's floods. The bridges were arranged in four types—viz.: (1) The ferro-concrete pipe in place of the old culvert, or smaller bridge; (2) ferro-concrete bridges with flat floors; (3) ferro-concrete bridges with arched floors; and (4) steel bridges with brick abutments, and, in addition, some brick bridges are being rebuilt. There had been, they reported, considerable delay in the approval by the Local Government Board of the plans for ferro-concrete structures, and experience showed the necessity, in dealing with so capricious a substance as cement, of specifying only the best-known materials. The committee had purchased a cement-testing machine for the county surveyor's use, which they had no doubt would be of great value. The bridges on which the cost of repairs exceeded £1,000 were as follows: Ingworth, outlay £2,093; Trowse, two structures, £1,612 and £1,520 respectively; and Mendham, £1,225.

"Practical Stone Quarrying," by Allan Greenwell, A.M.I.C.E., F.G.S., and J. Vincent Elsden, D.Sc. (Lond.), F.G.S. (London: Crosby Lockwood and Son, 12s. 6d.), should interest all owners of quarries, managers and inspectors thereof, and students. Most of the work has appeared in a periodical connected with the trade, and it is the first work published, covering quarrying as a whole. The detailed examples selected are typical of the best methods of working, and personal inspection has insured the correctness of the information in all cases. It is pretty certain that in the near future quarry managers will have to possess a wider range of knowledge than hitherto demanded, if commercial success and the safety of quarrymen are to be insured, and we therefore recommend strongly the study of this excellent manual.

An exhibition is open this week, and till July 31, at Whiteley's, Queen's-road, Bayswater, of the Powell wood process for rapidly seasoning timber, which differs from all others. By it it is claimed newly-felled timber may now be converted into better-seasoned timber within a few days, or weeks at most (according to its thickness) than in as many years by air-drying. Large stocks of timber for seasoning purposes are, therefore, no longer necessary. Many trees hitherto practically useless have been converted into valuable timber. The process in no way alters the nature of timber, as do kiln-drying and the forcing in of unnatural substances under pressure. It consists in treating wood in a saccharine solution, in other words "liquid timber," for which wood has a strong affinity. Neither pressure nor vacuum is used at any stage, but the timber is allowed to absorb merely the amount of solution required by each part of the wood to make the whole homogeneous. When the process is completed, the absorbed saccharine matter is found to be thoroughly assimilated by the tissues held in molecular combination with the cellular fibres of the wood. Every valuable quality is enhanced, while at the same time the wood is sterilised and made stable. Companies are already working the process in Australia and New Zealand, and have succeeded in so demonstrating its value that the Westralian Government has voted £200,000 for the equipment of plants, and has acquired the rights to use the Powell Process under royalty, to enable them to develop the timber resources of their country. In New Zealand a large company is operating as well as the Government works. One of the largest timber companies in Holland has acquired the rights for the Netherlands and the Dutch East Indies. A plant is now in course of erection in Java. In India extensive and lengthy tests and trials have been made by the Government officials, and, consequent on their reports, inquiries on Indian account have been made in Australia for Powellised sleepers in large quantities. Negotiations are now in progress with the object of establishing Indian works for the supply of sleepers to the Government railways. Arrangements are in progress for the formation of a company in the United States of America. The first English commercial plant was opened on January 3 this year, at the cabinet works of Messrs. William Birch, Ltd., High Wycombe, and their experience has been highly favourable. Some specimens of furniture made from Powellised wood eight years ago and since are on view at Whiteley's, and speak well for the process.

Mr. I. H. Scates, secretary of the Baltimore Exchange, and also of the National Building Trades and Employers' Association of the United States, has sent out a circular letter to all kindred organisations in the States requesting united action in the direction of securing a uniform contract form for the use of contractors. The purpose is stated to be as follows:—"To accurately define and standardise, wherever practicable, plans and specifications, in order to eliminate unnecessary hazards and uncertainties in construction contracts; to reduce the cost of improvements to the owner; to give contractors and surety companies a proper understanding of the obligations they assume; to establish contracting and suretyship on a more stable and definite basis; to provide for the settlement of differences by some equitably-constituted authority."


THE ETON CLUBS
HACKNEY WICK



SOUTH ELEVATION



FIRST FLOOR PLAN

Cow House at Limewood Surrey

Engd. Newton & Co.
Architect
Raymond Sanders
London



GROUND FLOOR PLAN

SCALE OF FEET
Sixteen feet to one inch

NORTH ELEVATION

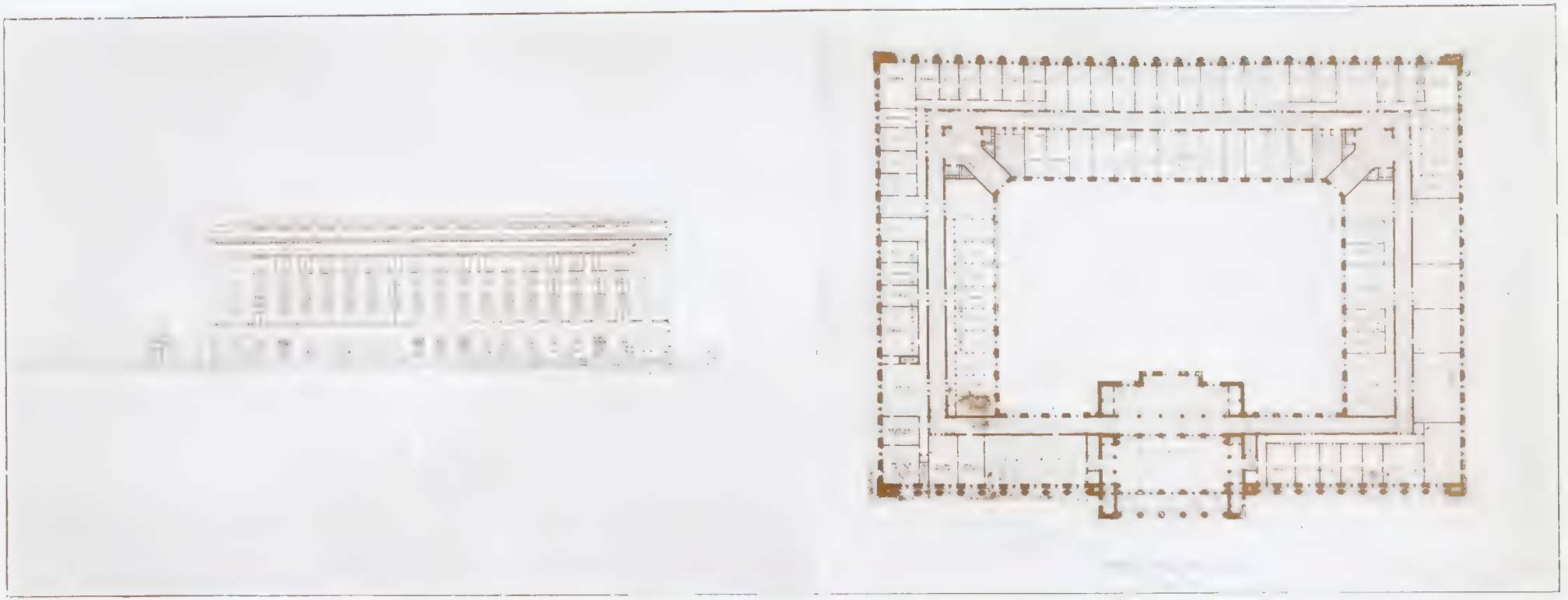




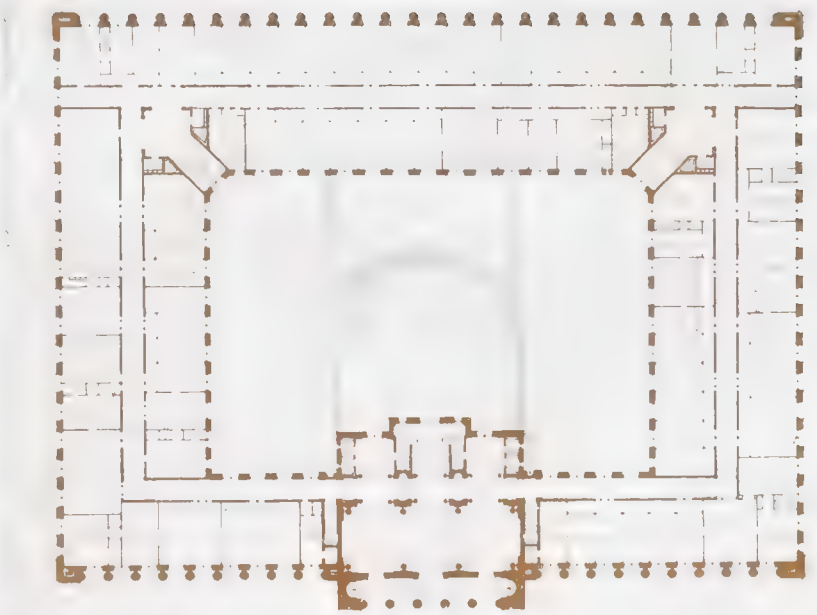
WALLINGFORD COURT, BERKSHIRE.—Messrs. I

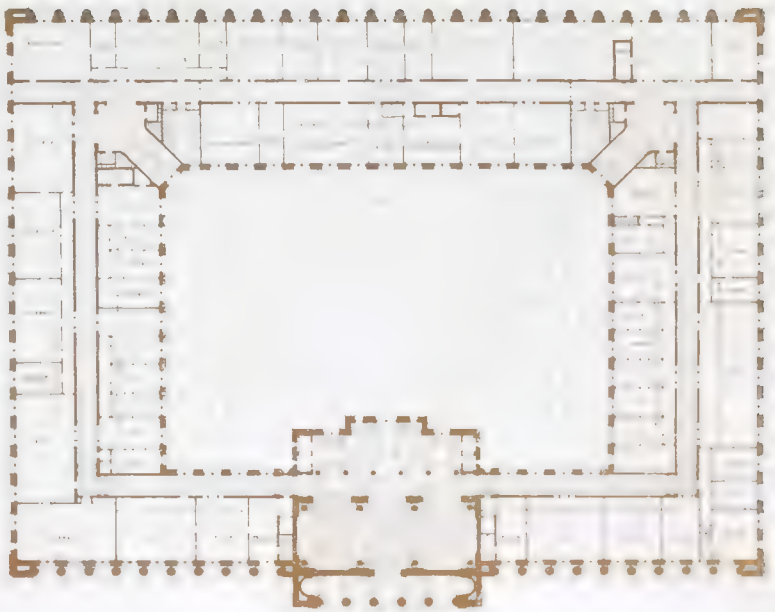


MAR BLOW, F.R.I.B.A., and F. BILLEREY, Architects.











SELECTED DESIGN FOR THE BUILDING FOR THE DEPARTMENT OF JUSTICE, WASHINGTON, D.C.

MR. DEAN BANNING, ARCHITECT.

MEETINGS FOR THE ENSUING WEEK

WEDNESDAY TO SATURDAY.—Fortieth Annual Meeting of the Institution of Municipal and County Engineers at Great Yarmouth

TRADE NOTES.

The Duchy of Cornwall Prince of Wales may now be numbered among the important users of Pudlo, the powder which makes cement waterproof, manufactured by Messrs. Kerner-Greenwood and Co., Kings Lynn.

Under the direction of Messrs. E. Appleton and Son, architects, Torquay, the Boyle system of ventilation (natural), embracing Boyle's latent patent "air-pump" ventilators and air inlets, has been applied to Homelands School, Torquay.

The directors of the London County and Westminster Bank, Ltd., have declared an interim dividend of 10⅝ per cent. for the half-year ending June 30. The dividend 10s. 7½d. per share (less Income-tax) will be payable on August 1.

The directors of the British Portland Cement Manufacturers, Ltd., will recommend to the shareholders at the forthcoming annual meeting the payment of a final dividend on the 6 per cent. preference shares to April 30 last, and of a dividend for the year on the ordinary shares at the rate of 7 per cent. per annum, carrying forward a balance of £32,568.

Amongst works in hand, or to be executed, by Claridge's Patent Asphalte Company, Ltd., are the asphalte work at Messrs. Robinson and Cleaver's premises, Regent-street, W.; Hailey House, Wallingford; 35, Eaton-place, S.W.; British American Tobacco Co., Millbank; Grammar School, Bromsgrove; Lloyd's Bank, Hull; King Edward's Memorial Church, Hull; and Great Marlborough-street Police-court.

The Invincible Talbots continued their conquering career at the speed trials of the Yorkshire Automobile Club at Saltburn on Saturday last, no fewer than eight gold medals being won by these cars. The character of these achievements is apparent from the fact that the Talbots were, at times, competing against cars of over 100H.P., while the highest-powered Talbot competing was 25H.P.

The inauguration of the new clock and quarter jacks at Christ Church, Bristol, was performed by the Archdeacon of Bristol on June 26. The clock strikes the hours on the large tenor bell, and chimes the quarters upon two bells struck by the quarter jacks, and was made by Messrs. John Smith and Sons, Midland Clock Works, Derby, who have just completed the erection of a large clock with Cambridge chimes at Hook Norton Church, Oxfordshire.

Messrs. John Warner and Sons, Ltd., of the Spitalfields Bell Foundry, London, E., have in hand the following contracts for bell restoration, in addition to York Minster, the rings of twelve bells at St. Leonard's Church, Shoreditch, and Chelmsford pro-Cathedral. Also at Eckington (Derbyshire), Escrick (Yorks), Boreham (Essex), Cookham (Berks), Sarratt (Herts), Rickmansworth (Herts), Wye (Kent), Henbury (Bristol), Stoke Climsland (Cornwall), Gulval Church (near Penzance), St. Mellons (Mon.), and Peterstone (Mon.). Messrs. Warner and Sons have also in hand five sets of chimes, including two for Canada and one for New Zealand, and the cost of these chimes will be about £6,500. All the bells come from the Spitalfields foundry, and are tuned upon Canon Simpson's five-tone principle.

Mr. T. A. Jaques, 12, Bedford-row, W.C., has been appointed quantity surveyor in the Swansea borough architect's department, at a salary of £250 per annum.

Extensive business premises are about to be erected upon the site enclosed by Lavender-hill, St. John's-road, and Ilminster-gardens, Clapham-junction, from plans by Messrs. Gibson, Skipwith, and Gordon, of Old Bond-street, W.C.

Mr. Edward Willis, surveyor to the Chiswick Urban District Council, has had his salary increased by £50 for the present year to £650, with further annual increments of £50 per annum on April 1, 1914, and the two following years, making a total ultimate increase of salary of £200 per annum.

The Essex County Council have adopted an extensive scheme for the reconstruction of main trunk roads, to be carried out during the next ten years at a cost of £236,000. Towards this expenditure the Road Board will make a grant of £125,000, spread over five years, and lend £47,590 free of interest for the same period

LATEST PRICES.

IRON.

Steel Joists, Belgian and German (ex steamer, London)	per ton	£6	2	6	to	£6	5	0
Steel Joists, English		7	10	0	,,	7	12	6
Wrought-Iron Girder Plates		7	0	0	,,	7	5	0
Steel Girder Plates		7	2	6	,,	8	2	6
Bar Iron, good Staffs		6	5	0	,,	8	10	0
Do., Lowmoor, Flat, Round, or Square		20	0	0	,,	0	0	0
Do., Welsh		5	15	0	,,	5	17	0
Boiler Plates, Iron—								
South Staffs		8	0	0	,,	8	15	0
Best Snedshill		9	0	0	,,	9	10	0

Angles 10s., Tees 20s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £8 15s. to £9.
Ditto galvanised, £14 to £15 10s. per ton

Galvanised Corrugated Sheet Iron—

	No. 18 to 20.	No. 22 to 24
6ft. to 8ft. long, inclusive	Per ton.	Per ton.
gauge	£13 0 0	£13 10 0
Best ditto	13 0 0	14 0 0

Wire Nails (Points de Paris)—

3 to 7	8	9	10	11	12	13	14	15	B.W.G
8/3	8/9	9/3	9/9	10/3	11/-	11/9	12/6	13/6	per cwt.

	Per ton.				Per ton.		
Cast-Iron Columns	£7	10	0	to	£9	0	0
Cast-Iron Stanchions	7	10	0	,,	9	0	0
Rolled-Iron Fencing Wire	8	5	0	,,	8	10	0
Rolled-Steel Fencing Wire	7	5	0	,,	7	10	0
,, ,, ,, Galvanised	8	15	0	,,	9	5	0
Cast-Iron Sash Weights	5	0	0	,,	5	5	0
Cut Floor Brads	9	15	0	,,		—	
Corrugated Iron, 24 gauge	16	0	0	,,		—	
Galvanised Wire Strand, 7 ply, 14 B.W.G.	14	5	0	,,		—	

B.B. Drawn Telegraph Wire, Galvanised—

0 to 8	9	10	11	12	B.W.G
£10 10s.	£10 15s.	£11 0s.	£11 5s.	£11 15s.	per ton

Cast-Iron Socket Pipes—							
3in. diameter	£6	2	6	to	£6	7	0
4in. to 6in.	6	0	0	,,	6	5	0
7in. to 24in. (all sizes)	5	7	6	,,	6	0	0

[Coated with composition, 5s. 0d. per ton extra, turned and bored joints, 5s. 0d. per ton extra.]

Pig Iron—	Per ton.						
Cold Blast, Lilleshall	110s.	0d.	to	117s.	6d.		
Hot Blast, ditto	70s.	0d.	,,	75s.	0d.		

Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—

Gas-Tubes	75 p.c.
Water-Tubes	72½ ,,
Steam-Tubes	67½ ,,
Galvanised Gas-Tubes	65 ,,
Galvanised Water-Tubes	62½ ,,
Galvanised Steam-Tubes	57½ ,,

OTHER METALS.

Spelter, Silesian	Per ton	£20	5	0	to	£20	10	0
Lead Water Pipe, Town		23	17	6	,,		—	
,, ,, ,, Country		24	12	6	,,		—	
Lead Barrel Pipe, Town		24	17	6	,,		—	
,, ,, ,, Country		25	12	6	,,		—	
Lead Pipe, Tinned inside, Town		25	17	6	,,		—	
,, ,, ,, ,, Country		26	12	6	,,		—	
Lead Pipe, Tinned inside and outside, Town		28	7	6	,,		—	
,, ,, ,, ,, Country		29	2	6	,,		—	
Composition Gas-Pipe, Town		26	17	6	,,		—	
,, ,, Country		27	12	6	,,		—	
Lead Soil-pipe (up to 4½in.) Town		26	17	6	,,		—	
,, ,, ,, Country		27	12	6	,,		—	

[Over 4½in. £1 per ton extra.]

Lead Shot, in 28lb. bags	24	15	0	,,		—	
Copper Sheets, sheathing & rods	80	0	0	,,	80	10	0
Copper, British Cake and Ingot	69	10	0	,,	70	0	0
Tin, English Ingots	190	0	0	,,	191	0	0
Do., Bars	191	0	0	,,	192	0	0
Pig Lead, in 1cwt. pigs (Town)	20	17	6	,,		—	
Sheet Lead, Town	23	7	6	,,		—	
,, ,, Country	24	2	6	,,		—	
Genuine White Lead	30	15	0	,,		—	
Refined Red Lead	24	10	0	,,	25	10	0
Sheet Zinc	30	0	0	,,		—	
Old Lead, against account	18	5	0	,,		—	
Tin, per cwt.	11	0	0	,,		—	
Cut nails (per cwt. basis, ordinary brand)	0	11	6	,,		—	

TIMBER.

CONSTRUCTIONAL.

Yellow Pine Deals, Quebec, per standard:— 1st quality	£38	0	0	to	£45	0	0
,, ,, ,, 2nd ,,	26	0	0	,,	32	0	0
,, ,, ,, 3rd ,,	16	0	0	,,	18	10	0
Spruce Deals: St. Johns	10	0	0	,,	11	10	0
,, ,, Miramichi	9	10	0	,,	10	10	0
,, Boards: Swag	11	0	0	,,	12	0	0
Red Deals: Archangel 1st quality	21	0	0	,,	24	0	0
,, ,, ,, 2nd ,,	16	0	0	,,	19	0	0
,, ,, ,, 3rd ,,	12	0	0	,,	14	0	0
,, ,, St. Petersburg—							
,, ,, ,, 1st quality	16	10	0	,,	18	0	0
,, ,, ,, 2nd ,,	14	10	0	,,	15	10	0
,, ,, Wyburg & Uleaborg	12	10	0	,,	15	0	0
,, Gefle, Gothenburg, and Stockholm	12	10	0	,,	17	0	0
White Deals: Crown	14	0	0	,,	15	10	0
,, ,, Seconds	11	10	0	,,	13	0	0
Flooring: White and Planed—							
1st and 2nd quality mixed	10	15	0	,,	11	15	0
1st, 2nd, & 3rd quality mixed	10	5	0	,,	11	0	0
Red Planed, 1st quality	14	10	0	,,	17	0	0
Pitch Pine: Prime Deals and Boards	18	0	0	,,	23	0	0
Lignum Vitæ, Per ton	7	0	0	,,	14	0	0

	Per cubic foot.						
Yellow Pine Logs (waney board)	0	5	0	,,	0	5	6
Pitch Pine Logs	0	2	0	,,	0	2	6
Birch: Quebec Logs	0	2	3	,,	0	2	9
Oak: Austrian Wainscot	0	7	0	,,	0	8	0
Mahogany: Gaboon	0	2	0	,,	0	2	3

FURNITURE AND HARDWOODS.

Teak: Burmese, per load, 50ft.	£20	0	0	to	£25	0	0
Teak: Java, per load, 50ft.	16	0	0	,,	21	0	0
	Per cubic foot						
Oak Planks: U.S.A., Imported	0	1	9	to	0	2	6
,, Boards ,, ,, Prm.	0	3	0	,,	0	4	6
,, ,, ,, ,, Mdm.	0	2	6	,,	0	2	9
Sequoia Californian Redwood	0	2	4	,,	0	3	6
Birch: Quebec logs	0	2	3	,,	0	2	6
,, ,, sawn planks	0	1	3	,,	0	2	0
Oak: Austrian Wainscot	0	7	0	,,	0	8	0
Walnut: Prime boards and planks	0	6	0	,,	0	6	6
Walnut: Mdm. ,, ,,	0	4	6	,,	0	4	6
Greenheart: Hewn logs	0	3	3	,,	0	4	0
Cedar: Cigar box	0	4	0	,,	0	7	6
Satin Walnut: Imp. sawn boards, prime	0	2	4	,,	0	2	6
Orhamn: Imp. sawn boards, prime	0	2	0	,,	0	2	3
Mahogany: St. Domingo, Cuba, and Honduras	0	6	0	,,	0	9	0
,, African, Assinee, &c.	0	5	0	,,	0	6	6
,, Lagos and Benin	0	4	6	,,	0	6	0
,, Sekondi and Cape Lopez	0	3	0	,,	0	4	0
,, Gaboon	0	2	0	,,	0	2	3
Satinwood: West Indian	0	10	0	,,	0	14	0
Rosewood, Per ton	8	0	0	,,	12	0	0
Lignum Vitæ, ,,	7	0	0	,,	14	0	0

STONE.*

Red Mansfield, in blocks, per foot cube	£0	2	4	
Darley Dale, ditto, ,,	0	2	3	
Red Corsehill, ditto, ,,	0	2	2	
Closeburn Red Freestone, ditto, ,,	0	2	0	
Ancaster, ditto, ,,	0	1	10	
Greenshill, ditto, ,,	0	1	10	
Chilmark, ditto (in truck at Nine Elms), ,,	0	1	10½	
Hard York, ditto, ,,	0	2	10	
Ditto ditto 6in. sawn both sides, landings, random sizes, per foot sup.	0	2	8	
Ditto ditto 3in. slab sawn two sides, random sizes, ,,		1	3	

* All F.O.R. London.

Bath Stone, delivered on road waggons, Paddington Depot, per foot cube	0	1	7½	
Ditto, ditto, Nine Elms Depot, ,,	0	1	9½	
Beer Stone, delivered on rail at Seaton Station, ,,	0	1	0	
Ditto, delivered at Nine Elms Station, ,,	0	1	6	

Portland Stone, in random blocks of 20ft. average—

	Brown Whit Bed.	White Base Bed
Delivered on road waggons at Paddington Depot, Nine Elms Depot, or Pimlico Wharf	Per foot cube.	
	£0 2 3	£0 2

SLATES.

	in.	in.	£	s.	d.	per 1,000 of
Blue Portmadoc	20×10		12	12	6	1,200 at r stn
,, ,,	16× 8		6	12	6	,, ,,
Blue Bangor	20×10		13	2	6	,, ,,
,, ,,	20×12		13	17	6	,, ,,
First quality	20×10		13	0	0	,, ,,
,, ,,	20×12		13	15	0	,, ,,
,, ,,	16× 8		7	5	0	,, ,,
Eureka unfading green	20×10		15	17	6	,, ,,
,, ,,	20×12		18	7	6	,, ,,
,, ,,	18×10		13	5	0	,, ,,
,, ,,	16× 8		10	5	0	,, ,,
Permanent green	20×10		11	12	6	,, ,,
,, ,,	18×10		9	12	6	,, ,,
,, ,,	16× 8		6	12	6	,, ,,

BRICKS.

(All prices net.)

First Hard Stocks	£1	15	0	per 1,000 alongside, in	
Second Hard Stocks	1	11	0	,, ,,	river
Mild Stocks	1	9	0	,, ,,	
Picked Stocks for Facings	2	5	0	,,	delivered at rly. stn.
Flettons	1	6	0	,, ,,	,,
Pressed Wire Cuts	1	18	0	,, ,,	,,
Red Wire Cuts	1	14	0	,, ,,	,,
Best Fareham Red	3	12	0	,, ,,	,,
Best Red Pressed Ruabon Facing	5	0	0	,, ,,	,,
Best Blue Pressed Staffordshire	3	15	0	,, ,,	,,
Ditto Bullnose	4	0	0	,, ,,	,,
Best Stourbridge Firebricks	3	14	0	,, ,,	,,
2½in. Best Red Accrington Plastic Facing Bricks	4	10	6	,,	Net, delivered in full truck loads in London.

Accrington Best Red Plastic Facing Bricks	per 1,000 £2 10 0
3⅜" ditto Second Best Plastic ditto	2 2 6
Ditto Ordinary Second Bricks	1 11 3
Ditto Plastic Engineering Bricks	1 17 6
Sewer Arch Brick not more than 3⅜" in thickest part	2 0 0
3⅜" Chimney Bricks fit for outside work	2 6 0
3⅜" ditto ditto through and through	3 0 0
3⅜" Beaded, Ovolo and Bevel Jambs; Octagons, 2¼ and 3 radius Bullnoses, Stock patterns	3 7 6
Accrington Air Bricks, 9" × 2 course deep, each	0 0 6
Ditto ditto 9" × 1 course	0 0 3

Accrington Camber Arches:—

3 course deep, 4½" soffit, per foot opening						0	1 3
4	ditto	4½	ditto	ditto	ditto	0	1 8
5	ditto	4½	ditto	ditto	ditto	0	2 1
6	ditto	4½	ditto	ditto	ditto	0	2 6
3	ditto	9"	ditto	ditto	ditto	0	2 1
4	ditto	9"	ditto	ditto	ditto	0	2 11
5	ditto	9"	ditto	ditto	ditto	0	3 9
6	ditto	9"	ditto	ditto	ditto	0	4 6

Net free on rail or free on boat at works

GLAZED BRICKS.

HARD GLAZES, (PER 1,000.)

	White, Ivory, and Salt Glazed. Best.	Buff, Cream, & Bronze. Best.	Other Colours. Seconds.	Second Colours.
Stretchers—	£12 7 6	£10 17 6	£13 17 6	£17 17 6	£12 7 6
Headers—	11 17 6	10 7 6	13 7 6	17 7 6	11 17 6
Quoins, Bullnose, and 4½in. Flats—	15 17 6	14 17 6	17 17 6	21 7 6	15 17 6
Double Stretchers—	17 17 6	16 7 6	20 17 6	24 7 6	17 17 6
Double Headers—	14 17 6	13 7 6	17 17 6	21 7 6	14 17 6
One side and two ends, square—	18 17 6	17 7 6	21 17 6	26 7 6	18 17 6
Two sides and one end, square—	19 17 6	18 7 6	22 17 6	26 17 6	19 17 6
Splays and Squints—	17 7 6	15 17 6	21 17 6	24 17 6	17 7

Plinth and Hollow Bricks. Stretchers and Headers—5d. each 4d. each 6d. each 6d. each 5d. each

Double Bullnose, Round Ends, Bullnose Stops—5d. each 4d. each 6d. each 6d. each 5d. each

Rounded Internal Angles—4d. each 3d. each 5d. each 5d. each 4d. each

MOULDED BRICKS.

Stretchers and Headers—8d. each 8d. each 8d. each 8d. each 8d. each

Internal and External Angles—1/2 each 1/2 each 1/2 each 1/2 each 1/2 each

Cill Bullnose, Stretchers and Headers—5d. each 4d. each 6d. each 6d. each 5d. each

Majolica or Soft Glazed Stretchers and Headers ..... Per 1,000 £22 17 6

" Quoins and Bullnose... 27 17 6

Compass bricks, circular and arch bricks of single radius £6 per 1,000 over above list for their respective kinds and colours ... Not exceeding 9in. by 4½in.

Camber arch bricks, any kind or colour, 1s. 2d. each ..... by 2½in.

Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.

* These prices are carriage paid in full truck loads to London Stations.

	s.	d.	
Thames Sand.....	7	6	per yard, delivered
Pit Sand	7	0	" "
Thames Ballast.....	6	0	" "

	s.	d.		s.	d.	Per ton,
Best Portland Cement	36	0	to	41	0	delivered
Ground Blue Lias Lime ...	21	0	per ton delivered.			

Exclusive of charge for sacks.

	s.	d.		s.	d.	Per yard,
Grey Stone Lime	13	6	to	14	0	delivered

Stourbridge Fireclay in sacks 27s. 0d. per ton at railway station.

TILES.

	s.	d.	Dlvrd. at
Plain red roofing tiles	42	0	per 1000 ry. stn
Hip and Valley tiles	3	7	per doz. " "
Broseley tiles	50	0	per 1000 " "
Ornamental tiles	52	6	" " "
Hip and Valley tiles	4	0	per doz. " "
Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000 " "
Ornamental do.	60	0	" " "
Hip tiles.....	4	0	per doz. " "
Valley tiles	3	0	" " "
Selected "Perfecta" roofing tiles :—Plain tiles (Peake's) ...	46	0	per 1000 " "
Ornamental do.	48	6	" " "
Hip tiles	3	10½	per doz. " "
Valley tiles	3	4½	" " "
"Rosemary" brand plain tiles	48	0	per 1000 " "
Ornamental tiles	50	0	" " "
Hip tiles.....	4	0	per doz. " "
Valley tiles	3	8	" " "
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 " "
Hand-made sand-faced	45	0	" " "
Hip tiles.....	4	0	per doz. " "
Valley tiles	3	6	" " "
Hartshill" brand plain tiles, sand-faced.....	50	0	per 1000 " "
Pressed	47	6	" " "
Ornamental do.	50	0	" " "
Hip tiles.....	4	0	per doz. " "
alley tiles	3	6	" "

OILS.

Rapeseed, English pale,	per tun	£28	15	0 to	£29	5 0
Do., brown	" ...	26	15	0 "	27	5 0
Cottonseed, refined	" ...	29	0	0 "	30	0 0
Olive, Spanish.....	" ...	39	10	0 "	40	0 0
Seal, pale	" ...	21	0	0 "	21	10 0
Cocoanut, Cochin	" ...	46	0	0 "	46	10 0
Do., Ceylon	" ...	42	10	0 "	43	0 0
Do., Mauritius	" ...	42	10	0 "	43	0 0
Palm, Lagos.....	" ...	32	5	0 "	33	5 0
Do. Nut Kernel	" ...	35	0	0 "	35	10 0
Oleine	" ...	17	5	0 "	19	5 0
Sperm	" ...	30	0	0 "	31	0 0
Lubricating U.S.	per gal	0	7	0 "	0	8 0
Petroleum refined.....	" ...	0	0	6¾ "	0	0 6¾
Tar, Stockholm.....	per barrel	1	6	0 "	1	10 0
Do., Archangel	" ...	0	19	6 "	1	0 0
Linseed Oil.....	per gal.	0	2	4 "		—
Baltic Oil	" ...	0	2	8 "		—
Turpentine	" ...	0	2	5½ "		—
Putty (Genuine Linseed Oil)	per cwt.	0	9	0 "		—
Pure Linseed Oil "Stority" Brand	"	0	10	0 "		—

GLASS (IN CRATES).

	15oz.	21oz.	26oz.	32oz.
English Sheet Glass :				
Fourths	2d. ...	3d. ...	3⅝d. ...	4⅝d.
Thirds.....	2½d. ...	3¼d. ...	4⅛d. ...	5⅛d.
Fluted Sheet	2⅝d. ...	3⅜d. ...	6½d. ...	7d.

Hartley's English Rolled Plate :	⅛in. 2½d.	3/16in. 2⅝d.	¼in. 3d.
Figured Rolled and Repoussine		White. 3½d. ...	Tinted 5d.

Trade News.

WAGES MOVEMENTS.

GLOUCESTER. The carpenters and bricklayers have hitherto been paid 8d. per hour, the masons 7d. and 7¾d., the plasterers 7¾d., and the labourers 5d. Each section asked for a penny per hour increase, on the ground of the all-round increase which has taken place in the cost of the necessaries of life, house rents, rates, etc. The referee has given the labourers an increase of ½d., and all other trades ¼d. per hour.

Darlaston Urban District Council have adopted a scheme prepared by Messrs. Dodd and Dodd, engineers, Birmingham, for new sewage-disposal works, estimated to cost £15,000.

The memorial to the late Captain Scott will take the forms of a memorial tablet in bronze, to be placed in St. Paul's Cathedral, and of a sculptured monument in bronze in a public place in London (probably the space immediately behind the railings in Hyde Park, fronting Lowther Lodge, the new home of the Royal Geographical Society) to contain the figures of the five dead men, by a sculptor of approved eminence to be hereafter selected.

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Please mention BUILDING NEWS

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OGILVIE & CO. Many years connected with the late firm of W. H. LASCELLES & CO., of Bunhill Row.

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FOR

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120, Bunhill Row, London, E.C.

TENDERS.

*** Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

BARNSLEY.—For erecting colliery rescue station, Eastgate. Messrs. Crawshaw and Wilkinson, 13, Regent-street, Barnsley, architects. Quantities by the architects :—

Excavator, mason, and bricklayer :—Mellor, G.
Carpenter and joiner :—Hey and Pashley.
Slaters :—Dawber, Townsley, and Co.
Plumber and glazier :—Free, H. H.
Plasterer and concretor :—Quidley, T.
Electricians :—Rushforth, S., and Son.
Painter :—Beaumont, G.
All of Barnsley.

BIDDULPH. — For the enlargement of the Central Council School, for the Staffordshire Education Committee :—

Godan, T., Hanley (accepted) .. £1,931 0 0

For extension of heating apparatus :—

Lowndes and Co., Leek (accepted) 87 10 0

BEXLEY, KENT.—For the erection at Bexley Asylum of the superstructure of a hospital villa for male patients, for the London County Council :—

Mills, W., & Sons, Blackheath ...	£5,119 6 10
Parker, G., and Sons, Peckham ...	5,072 0 0
Greenwood, J., Ltd., London Bridge	5,069 0 0
Smith, J., and Sons, Ltd., South Norwood	4,998 0 0
Lowe, R. A., and Co., Chislehurst	4,703 0 0
Bowyer, J. and C., Ltd., Upper Norwood	4,695 0 0
Blay, W. F., Ltd., Dartford ...	4,691 0 0
Groves, H., Greenwich	4,683 0 0
Wallis, G. E., and Sons, Ltd., Maidstone	4,625 0 0
Friday and Ling, Erith	4,623 5 10
Kent, H., Hither Green	4,459 0 0
Thomas and Edge, Woolwich ...	4,373 0 0
Appleby, J., and Sons, Southwark*	4,360 2 9

* Accepted.

BULWELL, BASHFORD.—For erecting nurses' home at workhouse, for the guardians. Mr. H. T. Sudbury, Lord Haddon-road, Ilkestone, architect. Quantities by Messrs. Barnes, Booth, and Richardson, Nottingham :—

Williamson, C., and Co.	£3,146 0 0
Ward, W.	3,045 0 0
Appleby, W.	3,025 0 0
Hutchinson, W. J., and Sons, Old Basford	3,017 0 0
Earnshaw, A., Ilkeston	2,939 0 8½
Bosworth and Lowe	2,931 0 0
Barker, T., & Sons, Loughborough	2,929 10 0
Dennett and Ingle, Ltd.	2,892 0 0
Wainer, G. W.	2,889 10 6
Simons, W. and J., West Bridgford	2,878 0 0
Lovett, G. T., West Bridgford ...	2,875 0 0
Hopewell, G., & Son, Old Basford	2,823 0 0
Suter, G. T.	2,811 0 0
Long, T., and Sons	2,770 10 0
Lewin, J., Netherfield	2,767 0 0
Bow, T.	2,728 10 0
Crane, W., Ltd.	2,716 0 0
Fish, T., and Sons	2,702 0 0
Barlow, T., and Co.*	2,863 10 0

Rest of Nottingham.

* Provisionally accepted.

BURBAGE.—For erection of handicraft centre, for the Leicestershire Education Committee. Mr. Ernest G. Fowler, Education Office, Leicester, architect. Quantities by the architect :—

Jeffcote, A., Hinckley	£604 0 0
Kellett, J. C., and Son, Leicester...	535 0 0
Fox, E., Leicester	528 0 0
Chamberlain, E., Burbage* ...	515 0 0

* Accepted.

CENTEAL FINSBURY.—For erecting in Vernon-square a new elementary school, for the London Education Committee :—

Johnson, W., & Co., Ltd., Wandsworth Common	£33,305 0 0
Appleby, J., and Sons, Southwark Park	32,496 0 0
Holloway, H. L., Deptford ...	32,249 0 0
Holliday and Greenwood, Ltd., Brixton	31,845 0 0
Bowyer, J. and C., Ltd., Upper Norwood	31,474 0 0
Rowley Bros., Wood Green ...	31,195 0 0
Smith, J., and Sons, Ltd., South Norwood	31,142 0 0
Patman and Fotheringham, Ltd., Liverpool-road*	30,943 0 0

* Accepted as reduced from revised plans at £28,554.

GREENWICH.—For the erection of handicraft centre at Sherrington-road central school, for the London Education Committee :—

Parker, G., and Sons, Peckham ...	£1,671 0 0
Mills, W., and Sons, Ltd., Blackheath	1,651 13 3½
Roberts, A., and Co., Ltd., Kensington	1,590 0 0
Mills, E., Blackheath	1,581 0 0
Bowyer, J. and C., Ltd., Upper Norwood	1,572 0 0
Marsland, J., and Sons, Walworth	1,563 0 0
Akers, W., and Co., Ltd., South Norwood	1,562 0 0
Groves, H., Greenwich	1,558 0 0
Harris, W., North Woolwich ...	1,488 0 0
Thomas and Edge, Woolwich ...	1,465 0 0
Holloway, H. L., Deptford	1,418 0 0
Appleby, J., and Sons, Southwark Park (accepted)	1,391 0 0

HALMER-END.—For the erection of a mixed council school, and alterations to exieting school at Halmer-End, for the Staffordshire Education Committee :—

Johnson, Elias, Audley (accepted)	£1,499 0 0

For the installation of heating apparatus :—

Manley, W. H., and Co., Wolverhampton (accepted)	£348 0 0

HAMPSTEAD, N.—For building a new infants' school, Kingsgate-road, for the London Education Committee :

Roberts, A., and Co., Ltd., Earl's Court-road	£7,645 0 0
Patman and Fotheringham, Ltd., Liverpool-road	7,493 0 0
McCormick and Sons, Ltd., Northampton-street	7,185 0 0
Ford and Walton, Ltd., Kilburn..	7,152 3 3
Chessum, J., and Son, South place	7,139 5 1
Bovis, Ltd., Upper Berkeley-street	7,130 0 0
Willmott, J., and Sons, Hornsey...	7,083 0 0
Appleby, J., and Sons, Southwark Park	7,063 0 0
Kearley, C. F., Ltd., Great Marlborough-street (accepted)...	7,000 0 0

HORNCASTLE.—For building bridges, for the rural district council. Mr. J. E. Chatterton, Council Offices, Horncastle, clerk. Accepted tenders :—

Hatton Bridge :—

Heaseman and Sons, Horncastle ...	£31 10 0

Salmonby Bridge :—

Sutton and Hoxton, Horncastle ...	66 0 0

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THE BUILDING NEWS

AND ENGINEERING JOURNAL.

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OUR ILLUSTRATIONS.

Church of St. Peter, Barnsley Mr. Temple Moore, F.R.I.B.A., Architect.

House at Burgh Heath, Surrey. Plans and elevations. Mr. Ernest Newton, A.R.A., Architect.

House at Hampstead. View, section, and plans. Mr. Henry Tanner, F.R.I.B.A., Architect.

House at Beckenham. View and plans. Mr. Henry Tanner, F.R.I.B.A., Architect.

New Building, Tavistock street, Covent Garden. View and plan. Mr. Lewen Stamp, Architect.

Design submitted for the New Arts Building, Manchester, by Mr. Paul Waterhouse, M.A., F.R.I.B.A. Architect.

Students' Hostel, Exeter. Sketch Plans of Selected and Second Premiated Design.

Plans of Workmen's Cottages.

St. Matthias' Church, Stoke Newington,

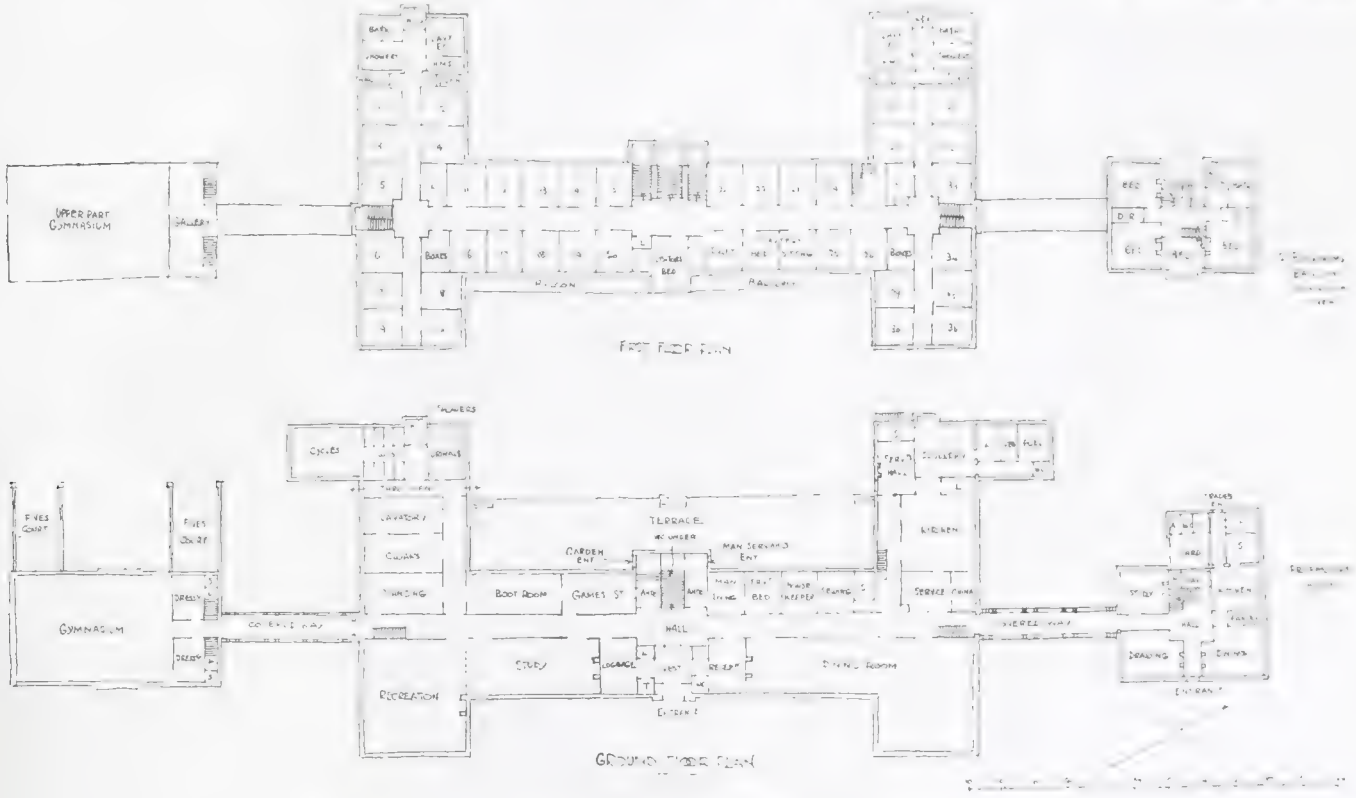
STUDENTS' HOSTEL, UNIVERSITY COLLEGE, EXETER.

The award of the Assessor, Mr. Edwin Cooper, F.R.I.B.A., in this competition, has been announced as follows:—1, Messrs. Edward Garratt and H. W. Simister, Norwich Union-chambers, Birmingham; 2, Messrs. Charles Gascoyne and George Nott, A.R.I.B.A., 6, Gray's Inn-square; 3, Mr. Arthur W. Kenyon, A.R.I.B.A., Caxton House, Westminster.

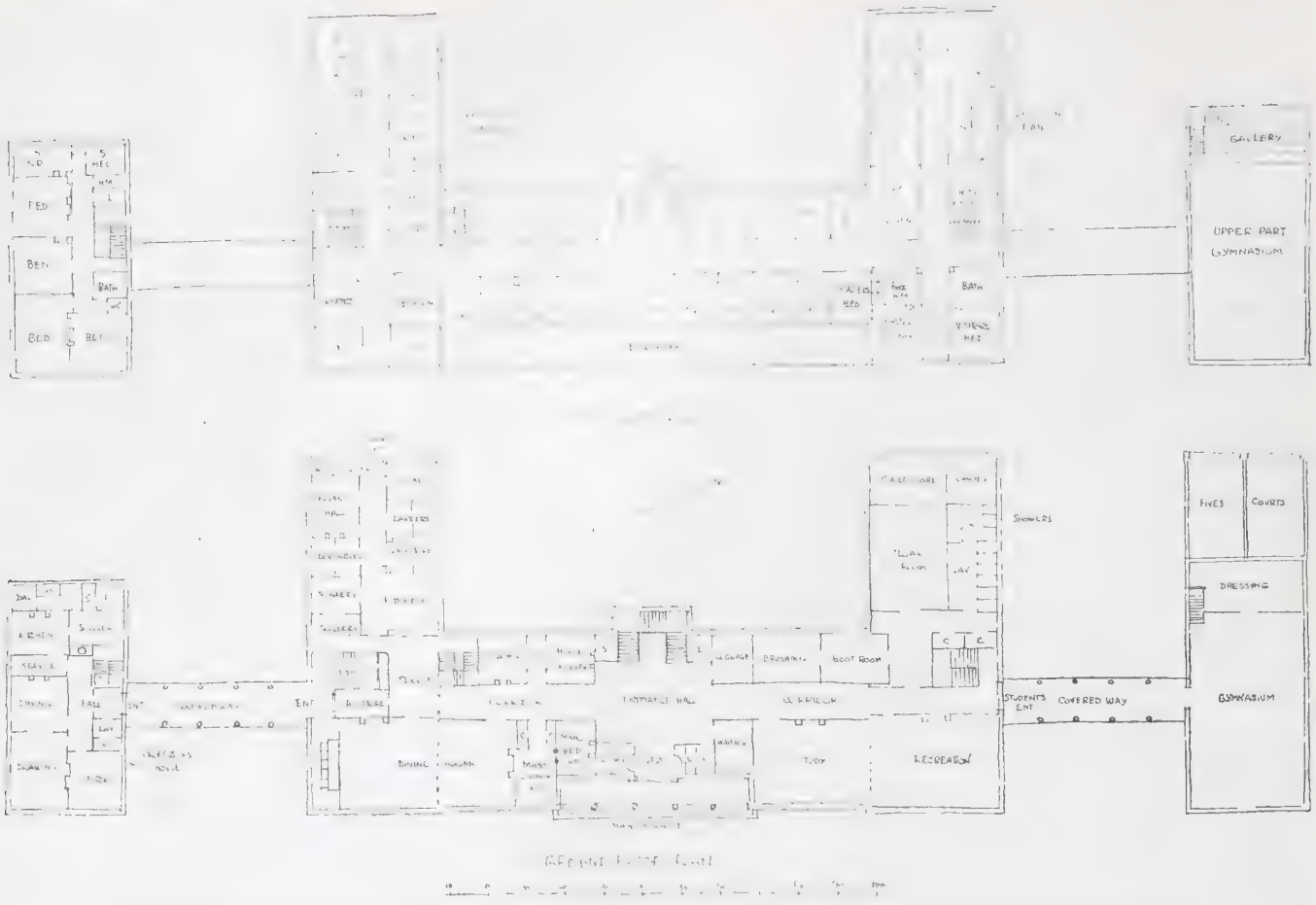
The site of the proposed buildings is about two and a-half miles from the heart of the city. Being already laid out as an excellent cricket-field, the College authorities were naturally anxious that as large a portion as possible should be retained as playing space, and the conditions suggested that the buildings should be placed close to the western boundary. This condition has been carefully adhered to by each of the premiated competitors.

Taken generally, the fifty designs submitted are not of a very high standard of excellence. Most are of a very ordinary character, and many are mediocre. The Assessor can have had no very great difficulty in making his selection, as the winning design gives on the whole an excellent interpretation of the problem. From the plans, it will be seen that there is a great similarity between the scheme placed first and the second; but various details most carefully worked out in the selected scheme doubtless influenced Mr. Edwin Cooper's award.

In the selected scheme, the building, running east and west, takes practically a symmetrical formation, while the gymnasium and professor's house are arranged as separate wings placed to the north and south, and connected with the hostel itself by covered ways. Some reasonable exception might perhaps be taken to the L-shaped study and recreation-room. The conditions stated that this was to be arranged for possible use as one large room, and if it is intended for the purpose of entertainments, it is obvious that a portion of the audience, at least, would be located rather out of touch with the proceedings. The dining-room is scarcely of the most desirable shape, and, as planned, it becomes necessary to cross the main corridor from the service-room, which is otherwise conveniently placed in relation to the kitchen. The corridors are none too adequately lighted, being dependent on windows at each end, and on borrowed lights. The covered ways, however, would greatly tend to overshadow these corridor end windows at the ground-floor level, while, again, the staircases taking up positions at the end of the passages would somewhat further hamper and diminish the light on the upper floors. Otherwise the plans are well and economically arranged. The Kitchen wing is well isolated, and the



STUDENTS' HOSTEL, EXETER: SKETCH PLANS OF SELECTED DESIGN.
Messrs. Edward Garratt and H. W. Simister, Architects.



STUDENTS' HOSTEL, EXETER: SKETCH PLANS OF THE SECOND PREMIATED DESIGN.

Messrs. Charles Gascoyne and George Nott, Architects.

lavatories in each case are disconnected from the rest of the building, and convenient as regards their arrangement. The students can obtain access to the gymnasium dressing-rooms, without having to traverse the apartment, and the professor's house is well and economically planned. It has not been forgotten that the study should be so placed that students and staff may interview the professor without having to traverse the entrance-hall, nor that a separate entrance for private visitors or members of the household is certainly necessary. The Hostel itself takes the form of a three-story block, the top-floor being practically identical with the one below, excepting that space is devoted to servants' rooms and sick quarters; both being well arranged in respect to their disconnection from the rest of the building. The elevations are designed in Georgian character, with brick walling and a wood cornice, and slated Mansard roof. They look entirely suitable, both for the locality as well as for the purposes of the building.

THE SECOND PREMIATED PLANS,

as before stated, bear a close resemblance to the selected scheme, both as regards the general lay-out of the arrangements, and also in regard to the character of the elevations. The latter are most pleasing, and might even be preferred to those of the selected design, by reason of their dignity and restraint. Again of Georgian character, with a wood cornice and mansard roof treatment between the two end pavilions, these latter are raised by a parapet above the general cornice level, and treated with steeply-hipped roofing. No attempt has been made to introduce a central feature, emphasis being given by the recessed loggia, nicely handled with Doric columns and an entablature. The chimneys have in every case been made dominant features of the sky-line, and the gymnasium façade practically balances with that of the professor's house.

The plan suffers somewhat in comparison with that of the selected design. The dining-room, and study, and recreation-room are certainly of a much better shape; but the service-room would be none too well lighted, and the luggage would have to be taken across the main entrance-hall to the lift or luggage store. The lavatories on the upper floors are neither as conveniently arranged or so completely disconnected. The professor's house would render it necessary for student and staff to traverse the main entrance-hall, and pass both the dining- and drawing-room doors on their way to the study. The lack of a private entrance for visitors and household is another drawback. The gymnasium would also have to be crossed in order to reach the dressing-room. Otherwise, the plan is simple, straightforward, and is capably handled; its authors have well earned the second place.

THE THIRD PREMIATED DESIGN

scarcely attains to the high standard of the two placed above it. Other schemes that have not obtained recognition must have run it very close indeed. Although the general lay-out is on similar lines, a material departure has been made in arranging the ground-floor with the corridor flanked only by rooms on its eastern side, thus allowing of its direct lighting by windows, and the building itself being consequently of less width. On the upper floors the corridor takes a central position, with rooms to the east and west flanking both sides of it. This treatment, of course, means that the walls or partitions do not follow up from those below. But, on the other hand, it avoids the necessity of setting back the eastern external wall for the greater part of its length, and the formation of balconies at the first-floor level, as in the case of both the other premiated designs. This treatment comes about in order to allow of the students' bedrooms being reduced in depth when compared with the reception-rooms under them, and must naturally tend to the introduction of heavy steel construction. Turning again to the third design, the service from the kitchen to the dining-room is not very satisfactory, and no attempt has been made to disconnect the lavatories. The planning of the professor's house seems to lack thought, and the arrangement of the study suffers, as in the case of the design placed second. The elevations would come out much more satisfactorily in execution than they do on paper, for they are very roughly delineated. The half-inch detail, however, shows more adequately the possibilities of the design, which is again of a simple Georgian treatment, very restrained in character.

The type of planning already described has been more or less followed by the bulk of the competitors, and especially by those who have probably been in the final running. Of these, we can only notice the following:—No. 46, James Barbour and Bowie, Dumfries; No. 26, Reginald Dixon, Birmingham; No. 21, Matthew J. Dawson, London; No. 22, S. N. Cooke and W. N. Twist, Birmingham; No. 4, Marshall, Robinson, Son, and Wheeler; No. 13, Vincent, Harris, and Moodie, London; and No. 18, A. Winter Rose, Birmingham. Messrs. Heywood and Buckland Farmer, and Messrs. Crouch, Butler, and Savage have also sent interesting solutions of the problem, though the latter's plan is scarcely as convincing as the one they submitted for the Hostel in connection with the Teachers' Training College at Hull, and won with. No. 4 comprises a very careful set of drawings and satisfactory elevations.

The plan is of interest by reason of its quadrangular formation, the main staircase and lavatories forming a central block, with the dining room placed under them on the ground floor. The courtyards, however, only being about 22ft. wide, the rooms lighted from them on the ground-floor, and particularly the kitchen and dining room, would be rather overshadowed. The gymnasium and professor's house are connected up by semi-circularly shaped covered ways, and the house suffers by reason of the extent of its hall and passages.

No. 16 gives excellently drawn elevations and a delicately-rendered half-inch detail. The hostel is placed diagonally across the corner of the site, and, with the addition of the gymnasium and the house, materially encroaches on the playing field. The plan does not attain to the standard of the façades, being cut up by four small light-wells, to say nothing of a further courtyard in the rear, enclosed on three sides.

No. 18 is another quadrangular design, the corridor having windows looking on to the quad on all of its four sides, thus giving excellent light and ventilation, but in an expensive manner of building. The elevations would be effective in execution, but the 1-16 scale drawings scarcely do the project justice.

No. 13 presents a dignified façade, though the ½in. detail has a tendency to get out of scale, and particularly in respect to the Ionic angle pilasters, when taken in conjunction with the Doric portico under. The masters' bedrooms are shown entirely disconnected from the hostel itself, which would mean turning out in the open every night, and, moreover, would scarcely tend to adequate supervision of the students.

The sick-rooms and servants' rooms being placed over these detached blocks, gives, however, satisfactory isolation to these quarters. The ground-floor corridor is neither adequately lit nor ventilated, and winders to the main staircase would not tend towards comfort.

No. 21 is a very attractive set of drawings, the plan taking the form of a single-banked corridor on the ground-floor, and double-banked above. The kitchen and scullery are not well placed, facing as they do the main entrance front. The lavatories again take up a prominent position at the head of the main staircase, and are not well lit or ventilated. The elevations are nicely rendered, as well as the half-inch detail of main entrance, although the treatment would be really more suitable for a public building than one of a semi-domestic character. The general site plan shows tennis-courts facing east and west—scarcely the most desirable aspects — and the beautiful cricket-field laid out as a Rugby football-ground!

No. 22 is another capital set of drawings, with a similar type of plan to that of No. 21; but the kitchen and lavatory blocks better handled, and not in such evidence. The Georgian elevations are much more elaborate than any of the premiated designs. No. 26 gives a most attractively-drawn half-inch detail.

Mr. Cooper, the Assessor, must be congratulated not only on his award, but also on having reduced the competitors' labours to an absolute minimum. One-sixteenth scale was adopted, and it has proved entirely adequate. No perspective was required, and a small portion of the façade to ½in. scale was the only "extra" asked for. Moreover, all the drawings could be in pencil. For once in a way, the bulk of the competitors have taken full advantage of the concessions offered, and elaborately-finished conceptions are generally conspicuous by their absence; many of the drawings, in fact, are futile, and of the roughest description.

OBSTRUCTION OF ANCIENT LIGHTS

In actions for obstruction of ancient lights, the practical point nowadays is generally as to whether there has been any real and substantial damage, which must be proved before the plaintiff can make out any claim. Evidence as to the existence of the right is usually obtainable in support of a 20 years' user, and the fact of the new building objected to, as an obstruction, speaks for itself. Under the older authorities, very little proof of a diminution in the light hitherto enjoyed was required, because they went upon the principle that the right to light carried with it a right to certain rays of light coming through a window in a certain definite direction. The whole of this old practice was finally changed by the decision of the House of Lords in 1904, in the well-known leading case of "Colls v. The Home and Colonial Stores, Ltd." (Law Reports, 1904, A.C. 179), which has been, and must be, followed by all lower tribunals ever since. The great practical rule there laid down is that, to constitute an actionable obstruction of ancient lights, it is not sufficient that the light is less than before. There must be a substantial privation of light, and which is enough to render the occupation of the house uncomfortable according to ordinary habits, and (in the case of business premises) to prevent the plaintiff carrying on his business as beneficially as before. This is the present law, and the rule is in accordance with fairness and common sense. It is clear that this broad principle is of universal application, and it is one of much interest and importance to both architects and builders.

In the recent case of "Davis v. Marrable," before Mr. Justice Joyce, June 23, 1913 (*Times* Law Reports, Vol. XXIX, page 617), the actual working out of this rule was exemplified in a very instructive manner. This was an action for damages for obstruction to ancient lights of a house and shop at Denmark-hill, London, and the hearing of the case lasted during four days. There was really no doubt as to the plaintiff's right of light arising by prescription from an uninterrupted user of over 20 years, and the point fought over was as to whether or not there had been any such obstruction by the defendant's building as would give the plaintiff a claim in an action for damages. The house was so situated that it got light from windows in both the east and the west walls. Previous to 1912, the plaintiff had received an uninterrupted access of light through a large window looking east, while the light coming to him from the west was greatly curtailed by the defendant's then buildings. In 1912 the defendant pulled down his old premises, and erected a picture-palace on their site. The result of this change was to cut off the access of light coming to the plaintiff's window from the east, but also to add greatly to the light which his premises received from the west. Upon this it was argued for the defence that there was no substantial damage upon which an action could be founded, as, in fact, the plaintiff got more light than he had enjoyed before, although it came in from the opposite side of his house. The plaintiff's case was that the defendant had no right to cut off the light he had hitherto received from the east, even if he gave him as good a light from the west. Altogether it was a very pretty point of law and practice in the way of building.

Mr. Justice Joyce, in his carefully considered judgment, went thoroughly into the whole question, and dealt fully with all the points involved. He referred to the leading case above quoted from the House of Lords in 1904, as showing that, since that decision, the owner of an ancient light had no right to have the same volume of light coming to the dominant tenement as has hitherto been used and enjoyed, if the light now comes in a different direction, and from an opposite point of the compass. The Judge, being satisfied upon the evidence that the light coming to the plaintiff's premises from the west, after the defendant's rebuilding, was as good as, and probably better than, he had before obtained from the east, held that there was no damage, and therefore no ground for the action, which he dismissed. It is, of course, possible that there may be an appeal, and if so, the result will be awaited with some interest in the building world.

There are one or two practical points worth noting about this curious case. It is obvious that the two opposing properties must have stood in a peculiar position to each other, to enable such a result to have been obtained. All the same, the case is suggestive of possibilities. We can imagine the architect and builder considering where they would be when they blocked the east window, which they doubtless knew was an ancient light, and casting about for some method which should bring in as good a light upon the other side of the premises. What was done so successfully in this case may be found practicable in others, when once the legal doctrine is fully apprehended. It may often be difficult to get the same amount of light into the same rooms in a building from some different aspect than that which it has hitherto enjoyed. On the other hand, there are sometimes ways of managing this which are now made lawful, but which, under the old rigid rule as to special rays and direction of light, would have been of no avail whatever.

There remains one important point to be mentioned, as arising out of the consideration of this curious decision. It seems to be clear that, in a case of this kind, the only light the Court had to consider was that which came over the defendant's premises from one side or the other. Any light coming from a different quarter apart from these buildings was not taken into account by the Judge's decision. He was dealing only with the question as to what amount of light the defendant had taken away by his rebuilding, and what fresh light he had given, as it were, in exchange at the same time. It was laid down by Lord Lindley, in the leading case above quoted, that light to which a right has not been acquired by grant or prescription, and of which the owner of the premises in question may at any time be deprived, ought not to be taken into account as between the parties to the action. It is, therefore, pretty plain that a defendant who obstructs an ancient light cannot [illegible] plaintiff such light from other sources, because these may at any period be blocked by different parties, against whom the plaintiff has [illegible] the question must always come back to the relative position of the buildings or obstruction concerned, and will not be affected by points as to light coming from other directions.

Shooter's Hill, from Mr. Dixon Butler's designs.

THE LONDON COUNTY COUNCIL.

At Tuesday's meeting of the Council, Viscount Peel, Chairman of the Improvements Committee, stated, in reply to Sir H. Parsons, that representatives of the Council and of the Government were still considering the question of the Admiralty Arch, and the Committee hoped to be in a position to report to the Council before the summer recess. He did not think that at the present moment it would be possible or advisable to inform the public through the Council of the precise state of affairs as regards the negotiations.

The Improvements Committee reported that, in view of the recent rejection of the Council's Lambeth Bridge Bill by a Select Committee of the House of Commons, and in order that adequate time might be afforded for a thorough reconsideration of the whole matter, they had decided not to recommend the Council to submit an application to Parliament in the ensuing session. The reception of this report gave rise to an animated discussion. Mr. Henry Ward complained that the result would be that at least seven years must pass before the bridge could be opened for traffic if a Bill were not pressed forward. Mr. Andrew T. Taylor, F.R.I.B.A., who was in charge of the report of the Improvements Committee, said that in his opinion—although he would not propose it—it would not be a great loss to London if the bridge were done away with altogether. He thought, however, that a bridge was required there, and all they asked for was a year in which to bring up another scheme. After further discussion the report was received, a hostile amendment having been defeated on a division by 61 votes to 42.

It was reported that the Local Government, Records, and Museums Committee have determined on further development of the annual volume of London statistics, it being proposed to incorporate in the volume a much larger number of maps and diagrams. For this work, which will be done in the department of the clerk of the Council, the services of an officer who has both statistical experience and capacity for drawing diagrams are required. It is recommended that Mr. A. G. Harding, assistant in the first class in the Estates and Valuation department, who with other officers was transferred in August, 1912, to that department on the discontinuance of the Local Government and Statistical department, be transferred to the department of the Clerk of the Council. To fill the vacancy which will thus be caused in the first class in the Estates and Valuation department, the promotion of Mr. F. Scothorne, assistant in the second class in that department, was proposed.

A WORKMAN'S COTTAGE FOR £150.

By Frank H. Heaven, F.R.I.B.A.

Much speculation is rife as to the possibility of building a cottage suitable for a working man and a moderate-sized family, for the modest sum of £150. Many words have been said for and against the possibility of doing so. I should like to add a few words as my opinion to the many which have gone before.

To accommodate a working man and his family, the house must be of a good size, and contain a large living-room, a place for washing up and doing the dirty household work, together with a place for storing the food of the family, a coal store, and a w.c. close to the house, and at least three bedrooms of a convenient size, and if possible a bathroom. All working men are not colliers, and cannot look forward to the future when baths will be provided for them at their work, so provision must be made for the ablutions of the man and his family at home.

Perhaps the three facts that weigh heaviest in counting the cost of a house are: the rate of interest at which money can be borrowed, for, usually, the working man has only a part of the purchase price at hand; the cost of the land, whether freehold or leasehold; and the cost of materials.

A cheaper rate of interest for the borrowing of money would go far to ameliorate the present overcrowding, so would a reduction in the cost of land, especially in ground rent, which is a permanent charge upon the house, even after the purchase price has been cleared.

Any change in these two latter, however, seems to be far distant, and can only be effected by the State or the municipal authorities subsidising the working man in the matter of lending money at a cheap rate for the purpose of building his house; or by the State of municipal bodies purchasing land and then leasing it at a reduced rental to prospective building owners, but both these methods are tainted with the principle of the community helping the individual, so the only way left into which we can look for any appreciable saving is the cost of the materials for the building of the house.

Many methods have been put forward towards this end, but none have been accepted in any general manner, and all are made by way of experiment.

One method I should like to call the attention of readers to is of recent invention, and is known as reinforced brickwork; that is, the walls are made of bricks of a special design, thin, but equally as weather-resisting as the ordinary brick, and reinforced to resist the stresses and strains brought upon the walls from the floors, roofs, and other superimposed weights, by means of iron rods placed in such positions as to best take and successfully resist these strains, and making such thin walls as strong as thicker bricks or stone walls, but at less than half the cost.

The author has prepared a design for a cottage, suitable for a working man and his family, containing, as he believes, all the accommodation necessary, as follows:—

A living-room, 14ft. 11in. by 13ft. 4in. to face of fire-breasts.

A kitchen, 13ft. 4in. by 6ft. 8in. to face of fire-breasts, and containing a fire-stove, copper, gas-stove, and sink.

A larder, 6ft. by 3ft. 9in.

A coal-shed and a w.c., each 4ft. 11in. by 2ft. 9in.

Front and back entrance lobbies on ground floor; and

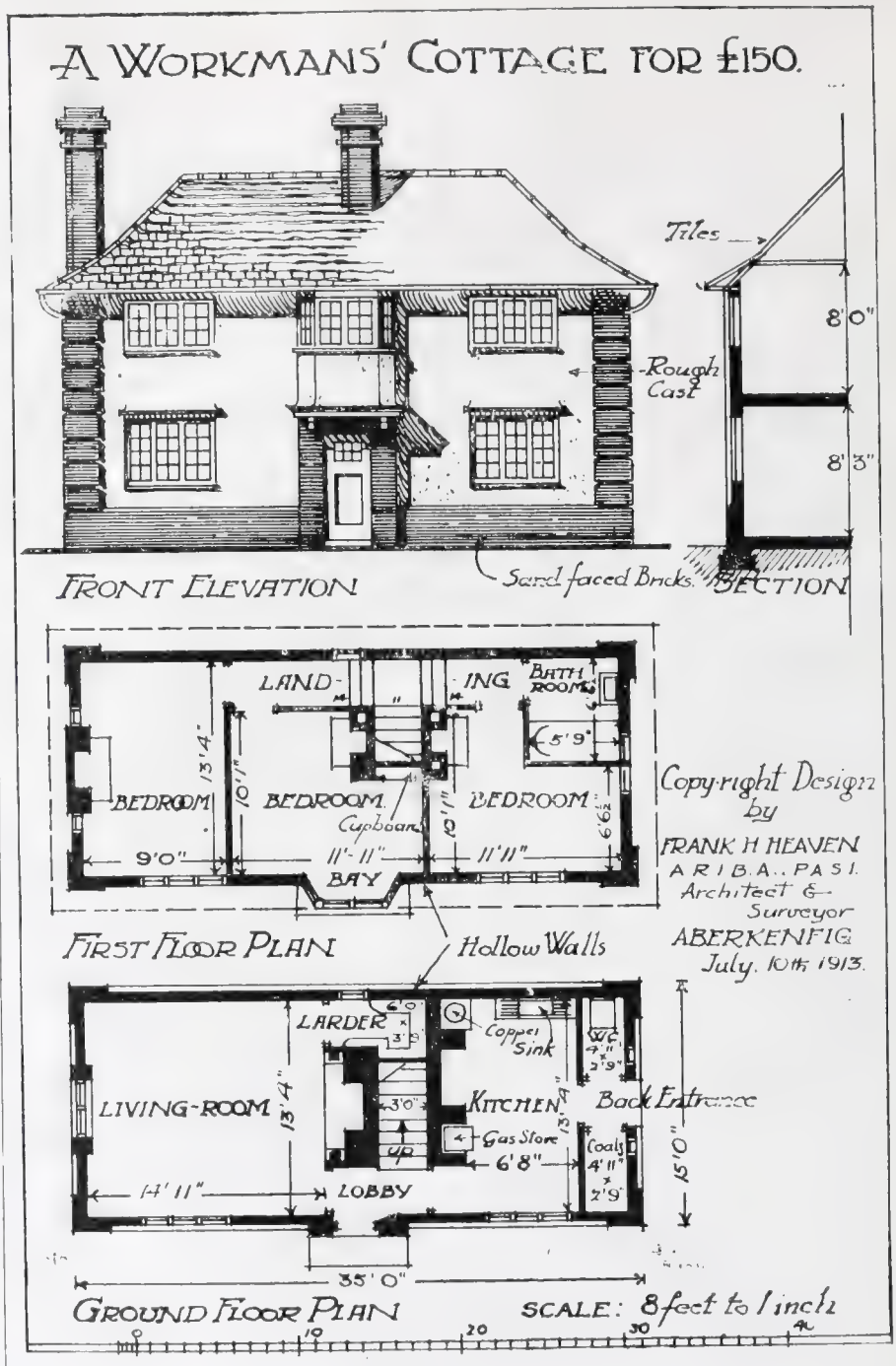
Three bedrooms, each with a fireplace, measuring 13ft. 4in. by 9ft., 10ft. 1in. by 11ft. 11in., and 10ft. 1in. by 11ft. 11in. respectively; and

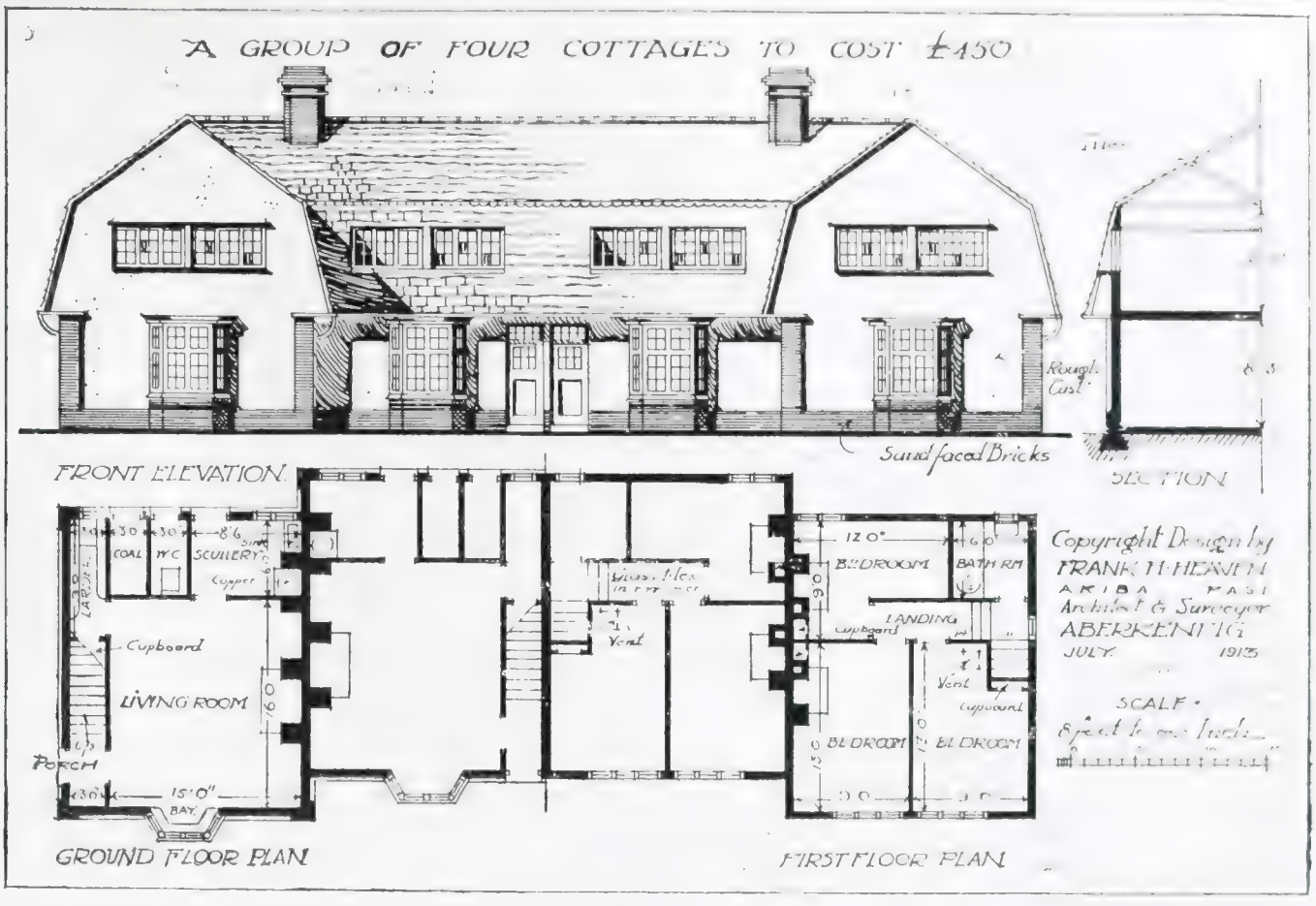
A bathroom, 6ft. 0½in. by 5ft. 9in., containing a full-sized bath and hand-basin.

All contained under one square roof.

The construction is sound and on economic but sanitary principles.

The floors are of 6in. cement concrete, with 1¼in. grooved and tongued floor-boards on pitch and tar in living-rooms, and 6in. by 6in. quarries in lobbies and kitchens, etc.;





the out offices have floated cement concrete floors. The upper floors have 1¼in. grooved and tongued boards on joists.

The walls are of hollow construction, faced with 4in. waterproofed roughcast externally, and cement plastered internally.

The roofs are tiled with patent weatherproof interlocking tiles and well overhung walls.

A house containing the above accommodation, and constructed as indicated, would be built for £147, a saving of 20 per cent. on the cost of 9in. brick walling, 4½in. brick partitions, and slate or tiled roofs.

Such a house could reasonably be let for 5s. per week, and secure a fair return on the money, as will be seen from the following particulars:

	£	s.	d.
Average cost per annum for interest and repayment of capital: interest on £150 at 5 per cent.; a sinking fund of £2 10 per annum invested at 5 per cent. for 60 years	5	6	8
Ground rent	1	10	0
Rates at 11s. in the £ on £5 15s. rateable value	3	3	3
Water rent	0	9	8
Fire insurance, £150 at 1s. 6d. per cent.	0	2	3
Repairs at 1¼ per cent. on £150	1	17	6
	£12	9	4
A rent of 5s. per week brings in.....	13	0	0

The author also sends a design for a block of four houses in hand, providing for a living-room 15ft. by 16ft., a scullery 8ft. 6in. by 6ft., a coals and a w.c. each 6ft. by 3ft., and a larder 9ft. by 3ft. on the ground floor, and three bedrooms measuring 12ft. by 9ft. each, and a bathroom 6ft. by 6ft. on the first floor, estimated to cost £450 for the four.

Additions and alterations to the isolation hospital in Vauxhall-lane, Tonbridge, were opened last week. The original building was erected in 1880, at a cost of £1,400, and was at the time quoted by the Local Government Board as a model hospital. The present extension has cost £2,600, and now provides 38 beds. The works have been carried out from plans by Mr Bradley, surveyor to the urban district council.

SQUALID LONDON AND THE INDIFFERENT LONDONER.

Under the auspices of the London Society, Mr. Somers Clarke, F.S.A., formerly surveyor to the Dean and Chapter of St. Paul's, contributed a paper entitled "Squalid London and the Indifferent Londoner: a Walk from Kensington Palace to Charing Cross," read at the rooms of the Royal Society of Arts in John-street, Adelphi, on Monday evening. Mr. Carmichael Thomas, chairman of executive of the London Society, occupied the chair, and there was a large audience, among those present being Lord Claud Hamilton and Sir Aston Webb, R.A., and Messrs. J. D. Crace, G. Corderoy, T. Raffles Davison, H. J. Leaning, C. H. Lohr, D. Barclay Niven, Herbert Oakley, Philip Tree, Raymond Unwin, Herbert Wiggleswick, William Woodward, and other well-known architects. The lecture, which was illustrated by numerous plans, drawings, and photographs, shown as lantern slides, was read, owing to the author's weakness of throat, by his friend the Rev. Canon Lewis Gilbertson, M.A., but now and then Mr. Somers Clarke interjected some pungent comments and explanations of the views as they were projected upon the screen.

The object of the address, said the author, is to call attention, not to some great and extensive schemes to some public improvement on a large scale for the advantage of traffic and the dignity of London, but to point out how in small matters opportunities are neglected, how works undertaken many years ago are left unfinished, ragged and raw, how, in consequence, much money is squandered. The Londoner tolerates squalor in an extraordinary way. No capital city in the civilised world can display such a collection of public buildings so blackened and smothered in dirty coal smoke, which eats and destroys the stonework without and the fabrics and decorations within, and yet the Londoners subscribe but a pittance towards the society which has for its object our liberation from the smoky outrage, and has already done a good deal towards improving matters. Let me point out how unobservant our public usually is. It cares not at all whether a building is finished or not. Let some new public office be built at a vast expense, its surroundings are left ragged and forlorn—perhaps for years—and yet how severely critical certain folk would justly be were the pictures in the public galleries left without adequate frames. The adequate frame is of enormous importance, whether to a picture or a building. To neglect the frame is to waste not a little of the public money, whether spent on a building or a picture. Few things are better than practical demonstration. I will therefore ask the audience to accompany me in imagination for a short walk from the west side of Kensington Palace to Charing Cross, and to keep its eyes open to those things I will venture to point out. There is much instruction to be gathered in such a walk; there are many opportunities of observing the slatternly neglect so characteristic, not only of the public authorities, but of the people in general. It unfortunately happens that in our projected promenade we come in contact for the most part with the Office of Works, but I do not wish to proclaim for a moment that this august body is more wicked than other people on whom the Tower of Siloam might do well to fall. The miserable squabble about the approach to the new Admiralty Arch is more than enough to indicate that other public bodies are equally short-sighted, and unprepared to seize an opportunity for the improvement of London. I venture to affirm that if the British public really cared about these subjects, such blunders as I will call to notice could not be made. These public bodies but reflect to a great extent the ignorance and indifference of us, the people. Let us not therefore think all will be well if we revile these public bodies. The public must show its interest and move in the matter. We will assemble on the west side of Kensington Palace, a most pleasant old-world piece of almost country scenery. We observe the quiet unpretending old building of the Palace itself with the greensward and trees, but how changed is the view from the aspect it presented but a short time since. The leafy avenue of Kensington Palace Gardens still runs from north to south, as it has done for many years, but opposite the Palace there was until lately a grassy meadow with trees a piece of rustic scenery in the [illegible]

worth preserving, and adding greatly to the amenities of the place. I was urged some years since by a wealthy client to approach the office in the care of which this pleasant spot was placed. My client offered an unlimited price. I was to build a suitable house. I was happy to say that the offer was absolutely declined. The leafy spot was sacred, I was told; it was always to be preserved. Now we see a row of houses in this very place. Its value, whether as an open space or as a set-off to the old palace, was altogether pushed aside. Filthy lucre prevailed. An irretrievable mistake has been made, and why? Just because town planning and the decency of things was in these later days a sealed book in that office. They had gone back, not forward. When we look to the south, what a hideous defacement we see in the flank view of the Royal Palace Hotel! Would such a monstrosity have been permitted in any other capital city? We pass through the doorway and enter Kensington Gardens. A few steps to the east bring us to the Broad Walk. The Broad Walk was not formerly open to the Kensington-road at its southern end. A solid brick wall inclosed this side of the gardens. The stately summer house which is now so strangely perched on the slope of a hill, smuggled away behind the pumps at the north end of the Serpentine, stood heretofore at the south end of the Broad Walk and closed the view. The wall was replaced by railings of the very common type we now see, a hole in these railings (one cannot compliment the gap by calling it a gateway) gives access from the Kensington-road to the avenue, but nothing more mean or shabby could be devised. The most stately avenue in London is approached by a hole in some mean railings. But a very little consideration of the subject would have enabled the gateway to have been placed at right angles to the long axis of the avenue; indeed, in any other capital city something adequate and dignified would have been expected by the public and have been set up. The Englishman walks through a scrubby hole in the railings and observes nothing. The second slide I show gives a suggestion for a rearrangement of the gate and railings which would, at a very little cost, much improve the entrance. On this plan we see that the gateway is set at right angles with the axis of the avenue. Large piers are proposed, of which the neighbourhood of Kensington Palace gives some excellent examples. The mean park railings are broken through, and a recess is formed with curved wings which would go a great way towards hiding the oblique line with which the avenue cuts the main road.

QUEEN'S GATE.

At Queen's Gate we may observe how a very little consideration and planning has produced such a good result. The line of park railings is broken by a setback. Very decent gate-posts are established. The whole composition faces down the fine roadway which we know as Queen's Gate. We might suggest that dignified gates make a good form of memorial, more especially when it is not to one person, but to a number (as for a regiment) that are to be commemorated. Motives for decoration suggest themselves enabling us to escape aimless cupids or scrolls, which are in nine cases out of ten without meaning. Although it is not in the line of our walk, I may call attention to the fact that the gates and railings at the north end of the Broad Walk are no better than those at the south, although they are less crooked. The neglect of an opportunity of doing things decently is manifest in each case. As we walk eastward we come to the Albert Memorial. It is at present the fashion to malign this work; everything in these days must be covered with pillars, "The Orders," as they are called, but I venture to think we should, if the modern critics had their way, be no better off than we are now. They are pleased to call a place covered with pillars "classic," but, in fact, it is no more real Classic than is the Albert Memorial real "Gothic." Both are shams. However, we must not enter on a battle of the styles, but I would ask permission to point out that this Memorial is, I believe, the only monument in London that [illegible] on a grand scale, is really complete. From the railings at the bottom to the cross at the top nothing is left unfinished. No empty niches, no yawning gaps are seen. How different is this memorial in its completeness; whether we fancy the style of it or not, from, for example, the archway at Constitution Hill, very commonly called the Wellington Arch, which has, however, nothing to do with the Duke of Wellington. This structure has stood for 70 or 80 years unfinished, and so it remains. Rough stonework may still be seen behind the coupled columns, intended, as we know, to be carved into trophies of arms. We must, however, come to this later on.

THE ALBERT HALL.

But whilst the Albert Memorial is itself complete, let us observe the extraordinary lack of arrangement in the relationship, both of the Memorial and of the Albert Hall, to the Kensington-road, which passes between them. Whilst no little trouble was taken to get the Albert Hall, the Albert Memorial, and the avenue to the north of it in alignment, none whatever was taken to arrange the existing main road in relation with its surroundings, nor the least effort made even to reduce its two sides to a parallel, or so to adjust the park railings that some sense of design and intention should be conveyed to the spectator. The desire to give dignity to the two monuments seems to have been abandoned as soon as arrangements had been made to secure an axis north and south. The principal approach by the public road was entirely neglected. The pavement on the south side of the Kensington-road bears no relation to the great building of the Albert Hall. On the north side of the road we find a mean and scrubby railing pierced by three poor little gates. The railing itself is not even straight, but is set on a bulging curve, probably that of the old brick wall which formerly inclosed Kensington Gardens, shutting them off from the country road. Then, passing through one of these before named gates and going towards the Memorial, into what a melancholy desolation of gravel we enter. The railings, the steps, all out of parallel with one another. We may ask why this space should be dusty gravel. A very little rearrangement would soon produce some excellent results. An increase of width in the roadway in front of the Albert Hall would make an advantageous place for carriages to stand. By making the park railings parallel with the lowest range of steps of the Memorial this space would be gained, and at no inconvenience to foot-passengers. A little readjustment of the pavement on the same side as the hall would be in itself but a trifling piece of work, and yet how much the effect of the whole group would be improved, yet no one would be inconvenienced. Such is the care taken by the public, such is the interest shown by the authorities, that a period of more than 40 years has elapsed from the inauguration of the Albert Hall, and yet only last year were the roads round it and giving acces to it properly made. Even to this day the necessary gateways to control the various exits and entrances have never been supplied. Funny little wooden wickets and primitive five-barred gates, within which one might expect the cows to be shut at milking time, are still made use of, their constant movement knocking off the angles of the masonry. If we go round to the back of the hall, wooden gates of a still meaner aspect close the south porch. Would any private owner put up with such things? Why, then, should the public?

LAMP POST ON THE SERPENTINE BRIDGE.

This very graceful bridge, so restrained, quiet, and refined in its lines, was designed by John Rennie, who also designed London Bridge. It had not originally, built as it was in 1826, any preparation for gas lighting. It so happens that over each arch the balustrade is divided into five spaces by small solid piers. A solid pier does not come over the crown of the arch. "Never mind that; stick the gas standard on the nearest pier you can find." So now we see the centre of the arch marked by its keystone, but the lamp standard on one side. The balustrade has been for some time in process of reconstruction. Nothing could have been more easy during that work than to make a solid pier over the keystone and set the lamp standard on that. Why, we may ask, is not the effect of the bridge from the water to be considered? It so happens that the end of the wide grassy avenue which leads away from the front of the Palace comes down upon the bank of the Serpentine in full view of the bridge, which, indeed, forms a very pretty object in the landscape. Quantities of chairs with abundance of occupants are always in this place. It cannot therefore be said that this shabby treatment of the bridge, to which I have referred, is of no consequence. Leaving the bridge, we pass eastward and come upon poor Lord Byron, who has been sitting, caged in behind the railings for many long years, and seems to be perched alone and forgotten on a damp stone. Be the statue good or bad, it is at least wise to make the best of it. Why not give it that frame, that appearance of being provided for, which we so generally neglect? By a slight rearrangement of the bushes behind, placing them as a trained hedge in a small semicircle, and thus forming a background, the extremely ignominious effect of the statue would be much reduced.

APSLEY HOUSE.

As we walk eastward by the side of Rotten Row, the vista is closed by the side view of Apsley House. In this case, in private hands, we see exactly the same toleration of shabby neglect as we have already lamented from the hands of the public authorities. The top of the house is surmounted by a row of the most hideous ventilators—something of the form of button mushrooms. It is true that the design of the façade is of no great beauty; but it might be as well to make the best of it. Furthermore, no façade—especially in London, where the stonework is so quickly discoloured—is other than ruined by the common white calico lodging-house roller blinds with which the windows are provided. The cold, raw white, ending at the bottom in a hard horizontal line, altogether destroys the lights and shades on the building. The housemaids, too, have a particular joy in pulling down these ugly blinds all to the same level on a long frontispiece. This is carried to the extremest degree on the front of Buckingham Palace, and will ruin the effect of the new façade as it does of the old. Blinds may be had of a soft colour—"écru"—and with sufficient indentation at the bottom edge to take off the ill-effects to which I have referred. Look now at the

SCREEN AT THE ENTRANCE OF HYDE PARK.

I do not think that any private owner would, at the entrance-gates of his park, tolerate some common and dilapidated little ladders padlocked to the protecting railings; but here we see these grubby little adjuncts, and have seen them for years. The screen itself is a very graceful and pleasant composition. Why, then, not respect it and make the best of it? Why introduce the odds-and-ends of a backyard into this most public place? A structure of the nature of this gateway was clearly set up with an eye to the adornment of that part of London. It cost many thousands of pounds. Why, then, not make the most of that on which public money has been spent? Why deface it with hideous and staring white-enamel plates marked IN and OUT, and still more hideous placards of warning to the motor-drivers. The notices are necessary, and they must be legible; but they need not be so hideous as to deface the monument to which they are fixed. But that is our way—spend £15,000 or £20,000, or it may be half a million, and then leave the structure to be neglected and defaced by vestrymen and tinkers of all sorts. Of late years, since enamel plates came into vogue, we have had all our street-corners defaced by these hideous dabs of white. On the gate leading to the Broad Walk before mentioned, there is quite an irruption. These are defaced by sundry ugly white tablets which indicate a somewhat childish rivalry between two districts which are never tired of proclaiming themselves—one "The City of Westminster," the other "The Royal Borough of Kensington." It seems that at this point the districts meet.

On the east side of the gate we are accordingly offended with a placard telling us that this is "The Broad Walk. The City of Westminster." On the west side is a more ugly affair, also telling us this is "The Broad Walk—Royal Borough of Kensington." It is to no purpose, if a carefully-designed gateway or other structure be set up, that it be placed at the mercy of vestries, local boards (or, for that matter, the Office of Works), to be thus thoughtlessly defaced. Call to mind the hideous advertisement boards placed in front of the Albert Hall, with still more hideous advertisements printed in letters two feet high. There are four of these things on either side of the central entrance; but none of them ranges with the other. Some are big, some are small, some stick up above their neighbours; but a charming artistic touch has been attempted by some little trimmings along the top. This growth of blatant vulgarity might at least be controlled on a public building -for such the Albert Hall is. One advertiser tries to outdo the others simply by the monstrous vulgarity of his lettering. Where is this to end? Legibility is essential; but a letter less than one foot high is quite legible across the width of a road. Not long since, the authorities of the Albert Hall pasted on the red brickwork of the walls great advertisements of direction. There they remained for some time. At last they were scraped off; but the walls of the building bore for many years the shabby stains made by the medium with which the advertisements were stuck on. At last the universal coat of smuts and dirt, so dear to the heart of the British race, has reduced the whole surface to a monotony of shabbiness. With regard to the accumulation of this coat of dirt, why is it that if I take a house on lease with a painted exterior, I must, by the terms of my lease, repaint it every three years, but if it be of stone it may for evermore be neglected? It used to be the case in Paris, and probably is so still, that most of the public buildings were washed down every few years. We let our stone buildings go on for an unlimited time, and then, in a spasm of despair, attack the unfortunate edifice with steam-jets and other terrible engines. But the evil is too great to be thus dealt with. The smuts have eaten into the very soul of the poor stones, and I fear the ferocity of the attack removes the surface of the stone, or at least disintegrates it to some extent. Stafford House underwent the drastic treatment but four or five years since. It already presents a smeary, grimy aspect—not as black as it once was, but, I think, more squalid—more like the streaky countenance of a gutter child who has been weeping. After standing some thirty years, the Albert Memorial was, at great cost, washed down, cleaned, and brushed up. In about five years' time after the operation, very much of it, especially of the gilding, looked positively more black, smeary, and woebegone than it did before; and so it stands to-day. I do not think that anyone now looking at it could suppose that the whole structure was clean and glittering six or seven years since. But to return to Hyde Park Corner. Was ever such a hash of odd corners, buildings here and there and anywhere, to be seen out of England? It presents to us chaos evolved out of order—the reverse of the usual process we hear about. The screen enclosing the gates into Hyde Park were designed by Decimus Burton, and set up in 1828.

TRIUMPHAL ARCH, HYDE PARK CORNER.

Opposite to this screen, parallel with it, and with its arch on the same axis as the central arch of the screen, Decimus Burton designed and erected the triumphal arch which has been already referred to. Hyde Park Corner was at the time looked upon as the western entrance to London. The main road passed between the screen on the north and the arch on the south, the arch giving access to Buckingham Palace. It will be observed that on the entablature standing over each column was to be placed a figure, for which, of course, we look in vain; that on the pedestal which, placed above the entablature, was to receive a group in bronze, was to be sculptured a frieze of figures in low relief which are not there. The pedestal itself was to bear a chariot drawn by horses, and containing the figure of Britannia Triumphans—something totally different from the display of wild animals we now see. Then, on the piers which flank the archway, and placed behind the detached columns, were to be carved trophies of arms. The rough stonework has been standing for the last eighty years, waiting for the stone-carvers to finish this piece of work. Is it unreasonable to ask why the arch has never been completed? The original designs exist. What would the architect, Decimus Burton, say if he could see his arch where it now is, and surmounted by the lady driving furious horses?—a group which we plainly see is entirely foreign to his intentions, and is equally foreign to the accepted treatment for sculpture in such a position. Personally, the only comfort I can find in looking at the unsteady lady in the chariot is that when she topples over backwards and falls to the ground, as she must surely do, "first aid" can readily be obtained from the neighbouring hospital. I have ventured to call attention to the neglect in small things—in the surroundings and finishings—from which our monuments suffer. This arch gives us an example in the shape of certain mean area railings which enclose part of it at the back—contemptible things to attach to a building of this nature; and, to make the matter worse, these have been closed in with the commonest planks, painted green—very well suited to enclose a backyard. The side-gates are adorned with the cheap enamel tablets, IN and OUT, above referred to.

THE WELLINGTON STATUE.

Whilst we are at Hyde Park Corner, I may refer to the equestrian statue of the Duke of Wellington, which presents us with another example of the cheap and indifferent way in which we do things. Boehm, the sculptor, told me himself it had never been his intention that the four figures at the corners of the pedestal should stand detached, as they do, "like mantelpiece ornaments." He had designed to have wreaths of bronze foliage on the sides of the pedestal, linking the whole thing together; but these were cut out, and the monument defaced for all time. "And then," as he justly asked, "where are the railings? To gain the pyramidal effect so much desired, to gain that look of protection and dignity which sculpture demands, railings are essential, unless the monument be on a vast scale." But for our statues we adopt the smallest scale possible; we set up images, not statues. The result, however, of these cheeseparings has been that the monument, already too insignificant for its position, is not even rendered as imposing or dignified as it might be.

THE VICTORIA MEMORIAL.

We now find ourselves in the Green Park, and make our way towards the fine "lay-out" which gives dignity to the Memorial to Queen Victoria. Here we are in the presence of something which has set out to be as complete in its parts as the Albert Memorial; but we are induced to ask how many years we are to wait for the figures which are to surmount the fountains, and the pedestals which flank the flights of steps. A good many years have now passed, and there is no sign of them. Then we inquire about the gates. Where are they? The Canada gates, the fine range on the north side, are, and have been for long, in position. But why is poor Australia to be left out in the cold? Is it a more unworthy colony? To complete the effect of balance and dignity, these gates are particularly essential. It is time the memorial committee bestirred itself and treated both the memory of the great Queen and the contributions of the Colonies with due respect. At the other end of the Mall we observe just the same neglect. The Admiralty Arch remains unfinished, keeping company with the portico of the British Museum, the unfinished top of the Home and Colonial Office, the Marble Arch, or the arch already referred to at Hyde Park Corner. We have already made mention of the groups of sculpture which should surmount the Admiralty Arch, and which are so very essential to its effect. If I remember right, an answer was given to a question in the House, not long since, that the Government did not intend to trouble itself further on this matter. A characteristic British answer, on the lines of squalor and incompleteness. Let us return to the Victoria Memorial, enter the Green Park, and walk towards Stafford House and St. James's Palace.

ST. JAMES'S PALACE.

we shall indeed see several things to make us feel proud. We make for the little gateway which leads into what is known as "the Stable Yard." The uninitiated would certainly suppose that Stafford House must be the Palace. It is of stone, and is on a scale of some dignity. Not at all. A filthy brown brick wall, with four stories of mean sash-windows, stands in front of the spectator. A little doorway, far inferior to the back-door of a tolerable country house, bears upon it the name of the Lord Chamberlain's Office. It is sheltered by a tumbledown wooden portico. It is impossible to believe it, were we not persuaded of the fact by reading the names on certain little brass plates, but we are actually gazing upon a part of the Palace. The Kensington Workhouse is a far more monumental building. We look up a street to the left, and here surely we see a part of the Palace. Not at all. This is Bridgewater House. The Palace is a [illegible] brown-brick wall, with square holes in it for windows. What lies behind this wall? Not some back-rooms, not a mere side adjunct to the Palace, but "the place we [illegible] distinguished [illegible] This squalid place is Yard. House. A fine [illegible] truly; but, on [illegible], a more doleful place could hardly be found in London.

YORK HOUSE.

is entered from Ambassadors' Court. This also has [illegible] backward it is! Brown brick walls [illegible] by smuts, are pierced by square sash-windows. Sheets [illegible] which one might expect to see carriages being washed, protect the entrances to the state-rooms of the Palace. There is not symmetry, there is not picturesque irregularity; there is merely squalor, indifference, and ugliness, such as no well-to-do man would tolerate about his country house. The north side of this redoubtable Ambassadors' Court is formed by York House. A common little enclosed porch, not unlike a shelter for passengers on an exposed railway platform, covers the door. We enter the door, and find ourselves in a poor little hall, with a very small, but a pleasant, old stair rising on our left: the Escalier d'honneur. We go forward, and by a gloomy passage gain access to the chief rooms on the ground floor. These delectable apartments have the level of their floor below the level of Cleveland-row, into which their windows look. They face dead north. The sun never enters. The ordinary dining-room of a London residence, especially of the old school, is immensely superior to these poor, low-pitched, commonly-finished rooms. The same dreary arrangement of rooms, facing north, is repeated above. But one or two insignificant rooms face the south. We will now extricate ourselves from the gloom of York House and make our way via the Ambassadors'-court to Cleveland-row. As we move eastwards towards Pall Mall, we find the north wall of the Palace to increase somewhat in picturesqueness. There is a carriage gateway through the tower, with a flat, pointed arch; but what is wrong with the doors? Either the ground has been lowered or the arch has been raised. In any case, the archway is taller than it once was; but the doors which close it have not been altered, although they seem to be of the same date as the tower. Pointed are these doors at the top, and pointed is the arch [illegible] them. When the doors are closed, the effect is ludicrous; when they are open, shabby. Then, what can we say about Clarence House? a stuccoed [illegible] tion to the Palace; a cousin, but much lower in degree, of the Lord Warden Hotel, Dover. This place was vamped up as we now see it but a few years since. Across the road lies Stafford House, up the street we see Bridgewater House both of them of stone, and with architectural pretensions; but the build-

ings of the Palace are no better than back premises—melancholy, dirty, and squalid. The old part of the Palace is undoubtedly picturesque and worthy of respect; but of the more modern parts we must say, "The more recent, the less decent." At last we are in sight of Charing Cross—the end of our walk. But as we pass the opening where Waterloo-place opens out on Pall Mall—the place where, looking to our right, we see the Duke of York's Column standing up against the sky—we may find much food for reflection. With the Athenæum Club on the west, the United Service Club on the east, the general parallelism and uniformity of the lay-out, we might reasonably suppose that those who have the control in these matters would see that statues, of which there are several, would be set up in such a relation to each other, both in scale, in design, and in their surrounding, that the "place" should have an effect duly monumental. Far be it from these gentlemen to waste their time over such trifles as that. The auctioneer might aptly describe the statues as "a job lot." Clearly, a well-conceived design for the whole place, with dignified railing to enclose the gardens, and suitable recesses in them to receive the statues, might have produced a pleasing result—a result which would have shown that, thinking this or that man who had served his country to be worthy of commemoration, we desired also to treat his statue with respect. What is actually the result? In the midst we find the equestrian statue of Lord Napier of Magdala on a very commonplace pedestal—the whole thing done "on the cheap." To show their respect for the hero, we often see that the authorities have heaped a pile of flints close against the pedestal, and within a species of tank or metal box, usually encrusted with dirt, they keep a store of gravel to throw over the roadway on slippery days. Truly ornamental adjuncts to a work of art! The sculptor may think himself lucky if even more unworthy things are not congregated about his work. As we look towards the south we see a bronze statue of Sir John Franklin. Those who are students of how things should be done will at once admire the amount of design and thought shown in the relation of the granite base of the statue and the mean iron railings. There is no adequate preparation made. A hole has been chopped through the railings, the base is thrust into the hole, and there is an end of the matter. At the south angle of these railings we find a very inadequate little image of Field-Marshal Sir John Fox Burgoyne. The pedestal stands in a hole cut through the corner of the railings. In the case of Sir John Franklin, the plinth of the pedestal projects a little, so that the main die of the pedestal is flush with the railings. In the case of Burgoyne, the railings actually stick out in front of the face of the die of the pedestal. If we cross the road to the east side, we find, facing Burgoyne, the statue of Lord Lawrence pushed into a hole in the railings in the same way as already described, and shoved into another hole is the group surmounted by a statue of Colin Campbell Lord Clyde. Could any churchyard mason do the thing worse? The British public neither observes nor cares; and yet, what have not these men, so indifferently commemorated, done for their country and for us? Is it unreasonable to ask why this place, which would lend itself so well to some adequate treatment, which might be made so suitable a receptacle for a certain number of statues (some of which (a heterogeneous company, alas!) are now there—why it should not now, even at the eleventh hour, be redeemed from its slatternly degradation? What silly criticisms were made about the Guards' Memorial, which is, none the less, one of the best groups in London; and, to illustrate what the artist has to endure at the hands of a committee, whether of officials or private persons, it may be stated that this memorial was originally designed by Bell, the sculptor, not to stand out in the open, as it does, but with a wall behind it.

CHARING CROSS

Passing on from this melancholy example of how not to do it, we find ourselves at Charing Cross—a strange medley of things, a place offering many possibilities, most of which have been thrown away. However, my province is not to show, even were I able to do so, how Trafalgar-square might have been arranged, but to call attention to sundry of the gaucherie which have been perpetrated of late years. These criminalities more especially centre about the statue of Charles I., by Le Sœur, with its picturesque pedestal, attributed to Grinling Gibbons. In referring to what has been done to this monument, we must also take into consideration the thoughtless way in which similar monuments have been treated. The photograph, which I have been permitted to take from the Pennant collection in the British Museum, shows the statue and pedestal of Charles I. as they stood until, perhaps, some thirty years since. I believe the position of the statue was never changed; but at the time I mention, and clearly for no adequate reason, the surrounding railings seen on the slide were swept away. It should be borne in mind that the railings round the pedestal of a statue exposed in a public place are nearly as essential to effect as is the frame to a picture. To refer to the words of Sir E. Boehm, the pyramidal outline so important to an effect of stability is thus secured. No form of statue on a pedestal needs this adjunct so much as an equestrian group, which, whilst of considerable bulk as seen from the side, is, from the nature of things, quite narrow as seen from the front. The statue of King Charles as it now appears is a conspicuous example of the defect, but, as long as it was framed and given its proper extent of base by the railings, did not suggest any deficiency. One fine day it was discovered by the wise men who control these things that there was not room on the island, or the refuge, for people to stand in safety. Without further thought, the railings were condemned and pulled down. At the same time the order was given to pull down the railings which encompassed Wyatt's statue of George III. in Cockspur-street—a performance absolutely unnecessary, as here the road is wide, space is abundant, and the traffic keeps far away. However, all the foxes must have their tails cut off. But a very short time after the railings were so ruthlessly removed from around King Charles I., some new arrangement of islands was made, with an idea of guiding the traffic in the way it should go. Forthwith two sets of railings made their appearance, laid out without the least regard to their effect on the surroundings, and there they stand to this day. Since the railings were removed from the base of the statue, I have, on occasion of processions or other times of crowds assembling, seen the statue and its base festooned with boys, some clambering up by aid of the carved work on the pedestal, and others established round about the legs of the horse. A nice risk for a work of art! But the outrages upon good taste by no means ended here. The powers which control these matters started to set up some tasteful lamp-posts—prodigious affairs, with three arms, carrying enormous spherical lanterns. Possibly there was some special enmity against the unhappy King, for, except when his head was cut off, never was he more completely extinguished. Each of the huge globes of glass are at least five times bigger than the head of the statue, and the lamp-posts are so placed as to be thoroughly out of composition with all the surroundings. But we need not go far to observe the same hopeless want of taste and want of thought in the setting-up of other lamp posts. In front of the National Gallery some tall posts were not long since planted in an uncomely row. We can see very well how the matter was taken in hand. A large-scale map was consulted, and orders given to plant the lamp-posts at intervals of so many feet or yards from one to the other, quite regardless of any public buildings which may line the street. By a very little consideration and adjustment—by moving a lamp-post, perhaps, three or four yards one way or another—it may be made to stand in some relation of symmetry to the portico or tower of the building before which it stands; but in the British islands the City Fathers do not think of these things. In the case of the row of trees planted in front of the National Gallery, one stands exactly in the middle of the front, whereas it is obvious to any educated person that the central line of the building should be free, and the trees ranged on either hand. But no one looks after these things in the British Isles. We are even as our blue-painted ancestors. But to what purpose is it that care be taken, as sometimes it is taken, that a building shall in all respects be well finished, if such outrages on good taste are permitted as I show on slide 10? This view is taken at Charing Cross, from the front of the railway-station. At no small costs and charges to the shareholders, large stone pillars and imposing iron railings were set up to enclose the station forecourt. To what purpose is this expense, when the tenant of a small shop for exchange is permitted to plaster upon the surfaces of these stone pillars and iron railings a perfect eruption of advertisements? Such excesses are not even economical, as the original outlay on the part of the company is entirely thrown away. Now that we have come to the end of our wanderings, do we not find much food for reflection, and not a little for shame? We may ask ourselves, "How does it all come about? How much we spend! How ill we spend it, for, out of what is done, how much is wasted!" It is always profitable to look around and see what other people are doing. If they do better in France, as they certainly do, what is it that is done? Our important buildings, be they ancient or modern, are, after completion, handed over to the tender mercies of a resident clerk of the works—a man usually well acquainted with the cost of paint, with the qualities of a brick, but absolutely untrained in archæology or architecture. Such a man was, but a few years since, let loose in Hampton Court Palace. The cloisters in some of the quadrangles were being replastered. He, however, went one better than his predecessors, as he lined-out all his new plastering with sham stone joints. Then it was found by some investigators that there still remained in a blocked window of the Palace Chapel the original tracery. So the round-headed window-openings, that had, I may presume, been put in under Wren's influence, were "restored away"; new stonework to imitate the old was put in; but the subtle curves of the old section of mullions were a sealed book to a clerk of works: his stonework is not like the old. So in most of our public buildings you find the same ignorance or clumsiness at work. How do they deal with the great buildings in France? Each building is placed under the care of a man who has won the greatest distinction in the Art of Architecture that can be conferred upon him—the Grand Prix de Rome—and under him an adequate staff. This is policy of the best. When a man has won this prize the Government keeps its eye on him. He gets promotion. But not only is the Government by this means reaping something for the money expended at the Beaux Arts, but it has defended itself against criticism from without. The monument is placed under the care of a man who has already proved his knowledge by gaining the prize. Their answer to the critics is easy: "We have put in charge the best-equipped man we can find." What answer have our people to give? I observe that on June 24, "On the motion of Earl Beauchamp, a new clause in the Ancient Monuments Bill was inserted, empowering the Commissioner of Works to give advice with reference to the treatment of, and to superintend any work in connection with, any ancient monument placed under their protection." Those who have kindly followed what I have had to say this evening will, I am sure, be greatly comforted at this information.

Mr. T. Raffles Davison supplemented the lecture by descriptions and lantern views of Le Sœur's equestrian statue at Charing Cross of the rightly-named "Martyr King," as it appeared enclosed by railings and surrounded by houses of moderate size 150 years ago, and as it is in the midst of incongruous environments at the present day. Mr. Somers Clarke's paper had been of great value, as it would demonstrate to the public that the mission of the London Society was to suggest

and carry out minor reforms and even works of "tidying up," so as to make the Metropolis more attractive, as well as to outline and stimulate the execution of vast and doubtless expensive reforms and improvements. A committee of the R.I.B.A. was now endeavouring to evolve a scheme for the uniform and pleasant lettering of all London streets.

Sir Aston Webb, R.A., proposed a vote of thanks to Mr. Somers Clarke, who was able, after spending six months of each year in Egypt, to return and view with a fresh and impartial eye the incongruities and incompletenesses of the architecture and monuments of London. He would candidly admit that he could not agree with every remark made by Mr. Somers Clarke. The lecturer would be interested to hear that Sir Thomas Brock had in hand the subsidiary groups needed for the completion of the Queen Victoria Memorial in the Mall. They were, indeed, at present being cast in bronze, and before long would be fixed in position, when he believed the appearance of the monument would be greatly enhanced, and the effect would be pronounced extremely fine. During the past week the temporary lamp-posts in the Mall had been replaced by the permanent ones specially designed and cast in bronze; the result was, he considered, a manifest improvement. Figures were now being added to the Admiralty Archway. The question as to whether or not a group of figures should be placed upon the summit of the arch had been the subject of much anxious thought and consideration, and it had been deliberately decided to leave the long horizontal line without any additions of statuary, in consequence of the restless character of the skyline when looking towards Charing Cross. He could not agree with the lecturer's strictures upon St. James's Palace; it was a delightful fragment of the Later Mediæval London; he loved every part of its façade, and would on no account have so charming a relic of the past interfered with. Apart from these points, the paper was one of great value, and bore the marks of much labour, thought, and careful weighing of words and consideration. In the vote of thanks he would include the name of Canon Gilbertson, who had so excellently read Mr. Clarke's paper.

Mr. Moor-Radford seconded the vote of thanks, which was supported by Mr. D. B. Niven and others.

Mr. William Woodward said for the last quarter of a century he had been advocating various London improvements and feared that, like himself, Mr. Somers Clarke was but as the voice of one crying in the wilderness. In view of the penurious policy of the Government, the county and borough councils, and the citizens, it seemed not the slightest use to try and improve the Metropolis. They were indebted to Mr. Somers Clarke for drawing attention to various matters which might seem to the uninitiated and ill-informed mere trivialities, but which those who had studied the subject knew that, if rectified, they would add greatly to the amenities of London. As a member of the City Council of Westminster, he had every hope that a satisfactory amendment would soon be made as to the anomalous approach to the Admiralty Archway into the Mall. But it was a difficult matter to rouse public opinion in the Metropolis. He would give two out of many modern instances of what they might expect from those who had the opportunity of improving London. The first was the action of a learned and cultured body, the Royal Geographical Society, who recently purchased for residential purposes Lowther Lodge, one of the masterpieces of the late Norman Shaw, R.A. They were altering the mansion, were building offices on part of its delightful gardens, and were endeavouring to dispose of the rest of the charming grounds to any speculative builder who might see his way to covering the site with houses that would yield a commercial return. The second instance was that of the Governors of Westminster Hospital, who were about to remove from that picturesque brick building, which would be demolished, and sought to obtain from the authorities leave to make a new building line to the margin of the projecting porch. If this were sanctioned the entire site to Limits beyond the present institution would be covered with offices carried to the full statutory height of 80ft. He hoped the paper read that evening would help to educate public opinion and would bring additional support to the London Society.

Mr. Sparling Hadwyn thought the lecturer quite misunderstood the problem of London incongruities. The Metropolis was so vast that every open space and every building had to be considered as a separate problem. The incongruities of lay-out were picturesque and added to the charm of London, and brought provincials and foreigners on visits of inspection. He entirely disagreed with the tenour of the paper.

Mr. Raymond Unwin said such papers as Mr. Somers Clarke's suggested to the general public some idea of what decency and harmony in our street buildings really required. The aim should be, however, to strive to provide greater amenities in the houses and surroundings of the whole of the people living in the Metropolis. When their own dwellings were made more home-like, people would exert themselves to remove minor and comparatively trivial squalities such as the signs on Charing Cross gateways.

Mr. Oswald Barron referred to the way in which the borough council of Hammersmith was thwarting the endeavour to preserve St. Peter's-square in that parish. The required sum of £1,750 had been raised by subscription to insure the square being kept open, and now the borough council has retracted the undertaking to accept it from the committee, on the paltry ground that no provision had been made for maintenance.

Mr. H. J. Leaning, who had been called to the chair, said there were many who twitted the London Society with creating extravagant ideas in the minds of the public, but who did nothing themselves to benefit the Metropolis. In time he believed they would do much to educate the public taste, but they have to proceed warily and discreetly.

Mr. Somers Clarke briefly replied to the vote of thanks.

A PLEA FOR A BETTER SYSTEM OF ESTIMATING AMONG BUILDING CONTRACTORS.*

By G. Alexander Wright, Architect.

Those of us who know something of the unsatisfactory conditions under which bidders are often obliged to figure, time after time without result, have realised that hundreds of thousands of dollars of time and money are taken from the contractors' pockets every year, simply because they do not so far limit competition between themselves to the matter of "price." They go on competing, and I fear, "gambling with each other," as to the quantity of material a building will take, whereas I contend that that is a question of "fact," and that competition in the "quantities" between contractors never can, and never will, in any way change the fact that a certain fixed quantity of material and labour is necessary to do every job. There can be no legitimate competition in taking off "quantities" of materials, except that unfortunate competition which bidders make themselves, when they take off "too much," or, as too often happens, "too little."

The legitimate competition can only come in where one man can handle a job better than another, or one man may have some advantage over another in buying, and so forth. All this kind of competition is legitimate enough; but it must be obvious that no amount of figuring can reduce the real quantity of material which a building will take, and so, my contention is that it would be proper and fair to start all bidders figuring upon the same basis, by furnishing each with a schedule, or bill of quantities, showing accurately and clearly the different quantities and kinds of materials which the bidder is invited to figure upon, and even then there would be plenty of competition left, in placing profitable prices against each item.

Our present method (or rather, want of method) in estimating, and the rapid strides being made in construction [illegible] more every year, an increasing waste of time and money in figuring out "quantities." This senseless waste and competition cannot go on forever. It has already brought men to bankruptcy all over the country, and has often prevented the making of a proper and legitimate profit among those who do succeed in keeping their heads above water.

This is a live question, and it deserves the earnest consideration of all contractors' associations and architectural societies from the Atlantic to the Pacific Coasts. No new or untried principle is involved. It is simply that of a definite quantity of work for a definite amount of money- in substance the owner says, I want this specified work done. The drawings and specifications show you how this quantity of work is to be assembled or put together. Now, tell me, how much money will this cost? I want you to do the quantity of work called for no more —no less." At present the successful bidder often says, in effect, to an owner, "I will erect your building according to plans and specifications," but—mentally—he says, "I do not figure that it will take as much flooring, concrete, plastering, or painting as my competitors think it will." Let me ask is this proper or fair competition? There is only one individual who stands to gain anything under such imperfect methods - viz., the owner. It may be stated that the quantity system is equally applicable to engineering works, such as railroad work, sewage disposal schemes, canals, pumping stations, etc. Before proceeding to a further consideration of this subject, I may be pardoned perhaps for expressing the opinion after having had over twenty years' intimate experience with the workings of the quantity system of estimating, and another twenty years in San Francisco (without any such system), that I know of nothing in connection with the work of the contractor that would be more beneficial than the adoption of some recognised method of estimating upon bills of quantities, and these would be equally valuable, whether sub-contracts were eventually let or not. It is not the idea that we accept the methods of any particular country; the author hopes he is too much of an American citizen to suggest that, but where contractors in older communities favour a certain system to the exclusion of the very method we practise here, then, I suggest, we might well stop for a moment, and take notice of what is being done. For example, in the year 1909 a conference was held in Great Britain between the National Federation of Building Trade Employers, the Institute of Builders, and the London Master Builders' Association, and a resolution was adopted recommending contractors who were members of these powerful organisations to decline to bid in competition against each other, unless bills of quantities were supplied for their use at the owner's expense. A deputation from these contractors' organisations afterwards attended before the principal body of architects, who promised to further the aims of the contractors as far as was within their power, and to-day the quantity system is in full operation, not only in the case of private owners, but in all building work for government and municipal authorities, and upon the "principle" that it is impossible to obtain bids without accurate quantities.

There must be some good reason for all this, and I suggest that it is worth consideration by any body of men who are trying to elevate the building business to the honourable position which it is entitled to occupy, and to bring about such conditions as will cause owners to hold the competent contractor in higher esteem, and not regard him, as is too often the case now, with suspicion.

Now let us consider for a moment a few of the disadvantages of existing methods:—

First—The time usually given for figuring is far "too short" for the accurate taking off of quantities, in addition to the pricing and figuring out of the many items. A bidder usually has contract work in progress, and other matters to be attended to during the daytime; other plans are to be figured by a certain time, and but little can be accomplished in the eight-hour working day, and

* An address given before the General Contractors' Association of San Francisco

so advantage must be taken of the night hours, sometimes all night, and even Sundays (I regret to say) and any other time. Only those who have worked under these conditions and over blue prints at night, hour after hour, taking off items, can appreciate the many difficulties, pitfalls, and liability to error through figuring against time, after the real work of the business day is over. But the plans must be returned first thing in the morning, or the bid must be in by a certain hour the next day. Nothing but hurry—hurry—hurry—in not a few cases more information is necessary; something is not quite clear! The plans and specifications do not agree on some point—which is right? There is no time to find out; the only person who can enlighten you is asleep, perhaps, while the careful estimator is burning the midnight oil and wrestling with problems which can be entirely eliminated under a more modern system of estimating. Again, the careful bidder who honestly tries to get in all the items, and figures to do the work as called for, is frequently beaten by a less competent bidder, who forgets something, or who, maybe, is willing to take a chance anyway in order to get the job. True, omissions in lists of materials are sometimes unavoidable, under existing methods, which unfortunately aim at "speed" rather than accuracy. It is, to say the least, disappointing to a careful bidder on a large job to find his bid just above the lowest, and after the low man has signed up the contract, it develops that the "painting" or some such item was left out. This, however, could not occur with the quantity system. This is no overdrawn picture, as I know from experience. The competent bidder who gets in all his items to-day is usually under a "disadvantage," unless he happens to be figuring against men of his own stamp. Meanwhile it would appear that the chances are in favour of the owner most of the time, and it seems to be a case of "Heads I win—tails you lose." Surely there must be some remedy! The existence of present conditions, whilst much to be regretted, is due to a blind continuance of early custom. It is in no way up to date, or conducive to progress, or to that business success to which a bona-fide contractor is entitled. It is entirely unsuited to modern construction and modern methods. The tallow candle years ago was a great invention, but how many of us would light our homes to-day by this method, and yet our estimating methods of to-day date from the same identical period as the "tallow candle." Other countries have long ago graduated from such primitive methods, and we are, in this respect, away behind the times. It seems to be almost inconceivable that shrewd business men are still willing to spend their time, all going over the same ground, figuring against each other on quantities, knowing all the time that they are all, save one (and sometimes even that one), simply wasting their time. By the adoption of some sensible system all this quantity taking could be done by one person.

The great difference we find in bids arises, in my opinion, not so much in the prices or money values placed against the quantities, as it does from errors in the "quantities" themselves, the accurate preparation of which calls for special training and continuous concentration of mind, which the busy contractor of to-day can seldom find time to acquire. Now we will investigate a bill of quantities, such as we are considering—what is it?—and how is it used?

First of all, it is a document, handed free of expense to each bidder, lithographed or similarly duplicated, in order that each bidder's copy may be exactly alike. It will contain everything which it is essential for a contractor to know when making up a figure, with a separate section for each trade, such as Excavation, Concrete, Brickwork, and so forth. A general summary is provided at the end of the bill, in which is entered the "net" cost of each trade—this summary is footed up, the profit the bidder expects to make is added, plus the cost of the quantities, the result being, of course, the amount of the bid.

The methods of measurement must conform to the standards used by each individual trade, and through the bill the greatest care is taken to have everything systematised. All cubic, square feet, lineal feet, and numbers of items will be found all together under their respective heads. In this way immediate reference may be made to any item required, even though the entire bill may contain hundreds of items, and so every item has its proper place—nothing is left to chance. Detail sketches also appear in the margins whenever necessary, and show a bidder at a glance what is required. These, as we know, are of more value to an estimator than long written descriptions one sometimes finds in specifications. The keynote of the quantity surveyor is "accuracy." In going through the drawings and specifications he has come across all those doubtful questions which always crop up when figuring under present methods. He will have taken them all up with the architect, and adjusted them, before the quantities are handed to bidders, so that everything is all plane-sailing Nothing is "near enough" for a quantity surveyor—he scrutinises every part of the work closely, clears up any doubts, or anything capable of a double interpretation, and his work leaves no loopholes for either the owner, the contractor, or the architect to take advantage of. The result is that it is seldom necessary for a bidder to ask questions of the architect when making up a figure. If he should wish to do so, probably he would be referred to the surveyor, who is familiar with every minute detail of the work. Further—and right here lies one of the greatest advantages of the quantity system—it is not necessary, except in a general way, for a bidder to study the drawings and specifications at all, and he certainly does not have to figure them. He simply prices the bill of "quantities," and, in these days of hurry and bustle, this is as much as a contractor can be expected to do, for nothing. This enables the competent contractor (the one who has unit prices at his finger-ends) to make up a bid for, say, a 100,000dol. building, in a few hours, and he has the satisfaction of knowing, when the unit price is placed against each item, that nothing has been forgotten—in other words, he only contracts to furnish so much material and labour—and surely this is absolutely right in principle. Good reasons exist why the general contractor should have faith in his own judgement and accustom himself to price items in every trade which goes to make up the building business. It is the only consistent method of estimating for anyone who claims to be a general contractor. Experience has taught most competent men that it "pays to do it." The mere getting together of figures from sub-bidders, and footing up the totals of the lowest, is not estimating at all. That is mere schoolboy work. However, I am led to believe that this is now the exception among general contractors in San Francisco rather than the rule. The ideal contractor is the one who makes up his own estimates, and not he who is dependent, for any reason, upon sub-contractors, who thus become the real estimators. If every general contractor would keep a prime-cost book of all trades, and quantities were supplied to him, he would soon be in a position to give a fairly close figure upon any sized structure, without first taking sub-bids, and this, I suggest, is the most consistent, satisfactory, and profitable method to pursue when bidding upon work as a whole; but, of course, it requires care and experience.

Further, one of the greatest arguments in favour of letting contracts as a whole is, of course, the fact that a general contractor has the ability to figure all trades in his own office, and that he knows how to, and will, supervise the work of sub-contractors, if any. If architects can be assured of this there will be much less segregation in the future. In general practice I believe the accuracy of the bill of "quantities" should be guaranteed. Such a document might well be made the basis of the contract, equally with the drawings and specifications; if this were done the chief cause of disputes between owner and contractor would be removed. This, I submit, is entirely logical and right. A certain "quantity" of work for a certain sum of "money," the owner to determine the former and the contractor to fix the latter—surely this is morally just and equitable. It may be said—where are these competent surveyors to be found? and it would be a very natural inquiry, as it is no part of the duty of architects to prepare such quantities. In fact, the relation of the architect to the contractor should preclude him from having anything to do with furnishing quantities. This should be attended to by a disinterested specialist—the "quantity surveyor." In older countries young men of education are now apprenticed to practising surveyors, and it has become a recognised profession. Years ago these quantity surveyors frequently came from the ranks of the architects, others possessing the necessary education were possibly contractors, building superintendents, or estimators. I have known contractors' representatives who commenced life in the workshop (who, after securing the advantages of special training), made experienced and very competent quantity surveyors. There must be a beginning to everything, and doubtless there are many men in this country who, after some little training in the technique of this work, should make reliable quantity surveyors. The principal qualifications are—honesty of purpose, a knowledge of architecture and construction. The surveyor should be a neat draughtsman, and have actual experience in conducting building operations. He should possess the ability to readily detect discrepancies or conditions which might give rise to misunderstandings during construction, and last, but not least, the necessary mentality to act disinterestedly. He must do what is "right" in measuring, as between the contractor and the owner. The usual custom is for the architect to furnish the quantity surveyor with a set of the drawings and a draft specification, and the latter then commences work in his own offices. During this period the architect and surveyor are in frequent consultation, to the end that all uncertainties are cleared up and adjusted upon the drawings and specifications; in short, no effort is spared to obtain perfect clearness and accuracy before bidders commence to figure. Such uncertainties are bound to crop up; they are unavoidable. They, nevertheless, perplex the contractor when he is figuring, and his foreman on the job, and create unnecessary trouble, and sometimes bitter disputes, and then, in such cases, "one of the parties" to the contract is usually a loser.

Now that we have briefly considered the qualifications of a quantity surveyor, let us take note of what the preparation of a bill of quantities involves. During the last forty years it may well be said that it has been brought to a mathematical science, and yet it is really surprising what a vague idea exists concerning the methods, objects, and uses of the "quantity system." The fact remains, however, that where the system has been adopted responsible contractors refuse to figure without it. Some day that will be the attitude of contractors in this country—when they fully realise the folly of wasting their time and money in competing against each other on "quantities," as well as on prices. But to return—three distinct processes are involved, and each process calls for different operations.

First—"Taking off" and entering every item (or "dimension," as it is called) upon the dimension sheets. This is always done in exactly the same order; in every building no dimension, however small, is omitted—no guesswork of any kind is permitted. The exact location in the building of every dimension taken is carefully noted, and every figure or note taken is carefully preserved for future reference. It is impossible to illustrate here the work in detail involved in taking off each trade; but the following may serve to show the general idea. Let us follow a surveyor for a moment in taking off his dimensions for a few items of—we will say—common brickwork. He always commences taking dimensions at the same point on each floor plan, every length of wall from one angle to the next is measured separately, and the dimensions entered in "waste," as it is termed; we will assume it takes, say, fourteen dimensions to go clear around a building—these fourteen dimensions and their locations are permanently recorded, footed up, and the

total lineal feet is then placed immediately below this, and a line drawn across the column to separate it from the next item. The dimension is squared—i.e., the number of square feet these figures represent is figured out, and opposite to the total we find a description thus: for example, 21in. wall of standard common brickwork laid up with lime, mortar, and Portland cement gauged three to one, pointed with flat joints one side for whitewash and raked out the other side for cementing. In good practice it might be best to give the number of square feet superficial of wall, and give the thickness. The same method is adopted with each story, with its varying thicknesses of walls, every dimension being entered in precisely the same order, with its particular location noted. Then we come to deduction of openings, those with inside and outside reveals (as in the case of box-frame windows) are taken separately, door openings the same, those of one size, and thickness of wall, are "timesed," as we say, and entered in the dimension column, so DDt. 9 3ft. 9in. by 7ft. 9in. 13in. outside wall "fifth floor." Then should follow an item, "extra labour" to so many 8in. common brick segment arches in, say, three half-brick rowlocks to 4ft. 6in. openings, with 3in. rise in 8in. wall; include for cutting skewbacks, etc., and for wood-turning piece and setting and striking. In case richer mortar was specified for arches it would be so stated, and the proportions.

When rough cutting to brickwork is required every square foot of it would be measured. Brickwork in footings or foundations or walls below ground, or at unusual heights, should be all segregated and given separately with full descriptions. Such items as the following are then taken by the square yard or square foot—viz., selected common brick facing. If joints are struck and cut (as face work) it is taken as a separate item, as should be the case with any portions that are to be pointed with special or coloured mortar. Cementing by the square yard, if on ordinary plain surfaces, but if in widths of 12in. or under, this is separated and taken by the lineal foot; should this work occur on circular surfaces it would be so described, kept separate, and the radius given. Lineal dimensions are taken of all rough splays and chamfers, flues, pointing to flashings, projecting courses, with the number of mitres, splays, or stops in same, brick sills, with the returns are numbered, if any. The labour of forming quoins, square or splayed, and (in certain cases) the lineal feet of plumbing angles and reveals might be taken, also levelling up for joists, bond-iron, and the like. The foregoing applies to common brickwork, as before stated. Now, where "face" bricks are used the entire surface of such facing is measured by the square foot, including reveals and soffits (but openings deducted), the kind of mortar and the labour of pointing being given. Here would be taken such items as face arches. Fair cutting by the square foot on same principle as mentioned for common brickwork. Then come lineal feet of each course, of which figures sketches should appear. Raking mouldings or belts separate, then follow the number of external, internal, raking, skew, or other mitres, also square ends, etc. (if any). All other lineal feet items follow in their proper order, and then, in a similar way, concluding with "numbered" items, which would be described and (if necessary) sketched in the margin. I am aware that this is but a very elementary illustration of the detailed method of taking off; but the principle applies throughout every department, in every trade, from the Excavator to the Painter; but it would be too great an undertaking to go fully into details here in each case. Surveyors' quantities are usually measured "net," and is so stated in the preamble of the bill, upon the understanding that the unit price for each item is to be made by the contractor, to cover trade customs, etc., which differ in each locality. The before-mentioned dimension sheets are usually checked over with the drawings by a second person, and then all totals are "abstracted"—that is to say, they are transferred to abstract sheets under separate headings. In this way many similar items of the same value are collected together and footed up and checked. This reduces the number of items which appear eventually in the finished bill, which is written direct from those abstract sheets, and any further sketches or descriptions necessary for the bidder to thoroughly understand what is required, are then finally added. When completed, a sufficient number of copies of these bills are lithographed or similarly duplicated, and a copy is sent by the surveyor to the list of prospective bidders, whose names and addresses have been previously furnished him by the architect.

Some of the advantages of the quantity system of estimating to the contractor are as follows—viz.:

1. Saving of time and money.
2. Greater precision in measuring.
3. No uncertainty as to interpretation of plans or specifications (the quantities should govern).
4. No visits to the architect's office when figuring, for explanations or otherwise.
5. No other work is contracted for except the "quantity" set forth in the quantities.
6. The contractor, if he so desires, can check up the quantities before signing a contract. In an American system of estimating the quantities should, I think, form part of the contract.
7. No bidder can inadvertently leave out anything, and so in this way arrive at too low a figure.
8. Not having to spend time taking out his "quantities," the contractor has time to attend to more profitable business.
9. Systematically arranged bills of quantities duly priced (whether work has been secured or not) form excellent data for making future estimates.

Before any universal American system could be put into operation it would be necessary:

First: That a committee of representative contractors from each trade be selected to standardise a method of measurement to be universally followed by all mechanics, contractors, and architects.

Second: That competent men, mutually satisfactory to contractors and architects, be retained in such numbers as the volume of work may demand. These men, or "quantity surveyors," could be placed under bond covering their competency and integrity until same have been assured. Such appointments to be permanent, except for cause. The compensation of these surveyors to be fixed at a certain percentage upon the total of each estimate. Each bidder, of course, adding this amount to his bid.

Third: I suggest, also, that a law be passed that a bill of quantities be furnished (free of expense to bidders) upon all State and public buildings. I advocated this as far back as the year 1893, and it may interest you to know that such a law is actually in effect in the State of Pennsylvania, and has been since 1895. It does not, however, go quite far enough, as the quantities furnished have no guarantee as to their accuracy. Quantity question is attracting much attention at the present moment among contractors in Boston, New York, and other cities, and I may mention, perhaps, that I am now formulating a programme to bring this quantity question to the attention of every building contractors' association and every architects' society in this country.

Fourth: In connection with the quantity system I still advocate (as I did in a brochure on arbitration which I published in 1894) the creation of a "technical" tribunal, or court of arbitration, where nothing but building suits and disputes should be determined and adjusted. Such court to be presided over by a specially-selected judge and at least two other men of practical experience in the actual construction of buildings, in estimating the value of builders' work, and familiar with trade methods, terms, processes, and customs. I maintain that such technical matters as building construction, values, etc., should not be decided solely by technical law or by laymen alone, however skilled in other ways, and notwithstanding the custom of calling expert witnesses before them. I consider that it would be an advantage to disputants if the bench had a first hand practical knowledge of building construction and methods, such as I have indicated, and where technical disputes might be determined in a few days once and for all, and without delays which only tire the contractor out and thereby bring him to a settlement more or less unjust, from a "practical" standpoint.

I am hoping to shortly see a committee appointed in every building employer organisation in this country to take up and seriously consider such matters as I have touched upon. Nothing, in my judgment, will tend to elevate the building business, and to promote a feeling of mutual confidence and respect between the contractor and owner, more than the quantity system of estimating, and which, as I think I have shown, aims at absolutely square dealing between the man who pays for the structure and the man who builds it.

OLYMPIA COMMERCIAL MOTOR SHOW.

The Great Commercial Vehicle Exhibition that opens at Olympia to-day is really by far the most important of the year, for sober though its title may be, and prosaic its scope, the show represents the high-water mark of a means of transport, a stage of commercial possibilities and an unprecedented era of locomotion of world-wide application, the like of which was neither thought feasible a few years ago nor can to-day be adequately appreciated, save by careful study.

That modern motor vehicles are now regarded as indispensable in commerce and industry is clear from the heavy demand there is for them. Seventy-four firms are exhibiting complete vehicles and coach work, while sixty-three display various component parts and accessories now in such request. Tire and wheel manufacturers exhibiting are also numerous, and they and other incidental stall-holders bring the total number of exhibitors up to approximately two hundred.

The motor vehicle has been welcomed by every class of trader. No matter how large the firm, what the nature of the goods, the automobile is fast displacing the horse. It does so because it is more economical, it is untiring, it is cleaner, it is a real time-saver. Moreover, it appeals to everyone, and the small trader, by judicious selection, can be benefited quite as much by his hundred-guinea machine as the firm whose output is a hundred tons or more daily.

Its use, however, in connection with the building and allied trades has not become very general yet, and a large and lucrative field is open to those firms who, through the columns of our own and kindred journals, call attention to the all-round advantages to be derived from the adoption of motor traction and their own special vehicles.

Space prevents us, even if any good could be served, from illustrating any particular types of chassis or bodies; but we recommend all who can to pay Olympia a visit, and get the latest catalogues of the firms exhibiting, who have a wide range of cars suitable for use in connection with the building trades.

A firm to whose exhibit we have particular pleasure in calling attention at Stand 135 is Messrs. Drummond Bros., Ltd., Read Hill, Guildford, whose specialities in lathes are so well known to readers of our other journal, the *English Mechanic*. There are many of our readers to whom these lathes would be found of infinite use, and the cost of installing one saved over and over again.

ST. MATTHIAS' CHURCH, STOKE NEWINGTON.

The interesting story of sixty-five years' work in the church of St. Matthias, Stoke Newington, is briefly told by Mr. T. Francis Bumpus, the well-known writer on the cathedrals of Europe, church music, and stained glass, in a cloth bound volume of ninety pages, illustrated by sixteen reproductions of photographs and drawings. Mr. Bumpus has spent his life in the parish, has long been a member of the choir, and has served as one of the churchwardens since 1904, so that he approaches his subject with the intimate knowledge and the enthusiasm that insure the reader's sympathetic



ST. MATTHIAS, STOKE NEWINGTON: FROM THE WEST.

attention. The well-known church was erected by Myers in 1851-3 at a cost of £7,000, and owes its origin to one of the Early Tractarians, Robert Brett, a surgeon who practised in Stoke Newington. It is one of the earlier and most original edifices built from the designs of William Butterfield, its distinctive features being the lofty and narrow clerestoried nave, with lean-to aisles, the gabled saddle-backed tower rising above the chancel, and the short, square-ended sanctuary with one-storied sacristy adjoining its north side. From 1868 till 1879 the office of parish warden was held by the late James Brooks, F.R.I.B.A., who designed the very simple rood-screen, and from whose plans the parish church of St. Mary, Haggerston, was remodelled, and the neighbouring churches of St. Michael (Shoreditch), St. Chad, and St. Columba (Haggerston) were built. Among the comparatively recent embellishments of St. Matthias are the frescoes and mural decorations executed by Mr. Daniel Bell. A chapter of Mr. Bumpus' book is devoted to the choral worship, which has ever been a notable feature of the services at St. Matthias, thanks to the long association with it as organist and precentor of the late William Henry Monk and Spenser Nottingham. In a closing chapter, the present vicar, the Rev. Ernest Driver, points out that when St. Matthias was built, Butterfield's beautiful fabric was the church of the City merchants and men of business, who lived in what was then a pleasant suburb, but that now there is neither wealth in the church nor in the parish, which is gradually but surely becoming a poor East-end district.



ST. MATTHIAS, STOKE NEWINGTON: IN THE NAVE, LOOKING EAST.

OBITUARY.

We regret to announce the death of Mr. Owen W. Davis, architect, many years ago a valued contributor to these pages. One series in particular, on "Art and Work," will doubtless be remembered by older appreciative readers.

Mr. W. Chasen Ralph, F.R.I.B.A., of King-street, Wigan, a well-known Lancashire architect, died at his residence in Wigan on Thursday in last week with painful suddenness. The deceased was formerly associated with Chester. He was one of the founders of the Holmes Lodge of Freemasonry and a popular provincial officer. He joined the Royal Institute of British Architects as a Fellow in 1903.

The death occurred on Tuesday, July 15, at Weymouth, of Mr. F. J. Barnes, the chairman of the Southern Sea Fisheries Committee, and a leading member of the Dorset County Council. Mr. Barnes was a marine biologist of some eminence, and was especially interested in the crustacea. He was the principal quarry-owner at Portland, and from his quarries most of the stone for the refacing of Buckingham Palace is being produced and worked.

PROFESSIONAL AND TRADE SOCIETIES.

UNIVERSITY OF SHEFFIELD: DEPARTMENT OF ARCHITECTURE.—The next session will begin on October 1. The lecturer will be present at the University on September 29 and 30, from 9.30 to 12.30, and on October 1 from 6.30 to 8.30 p.m., to see intending students. The department provides: (1) A five years' course leading to the degree of Bachelor of Arts with Honours in Architecture (three years day, and two years part day and part evening). (2) A three years' certificate course (two years day and one year part day and part evening). (3) A two years' diploma course (a part day and part evening course, following the certificate course). (4) Special evening courses: (a) Architectural Drawing (Wednesdays, 6.30—8.30, fee 10s. 6d.); (b) English Architecture (Wednesdays, 5.30—6.30, fee 10s. 6d.); (c) tutorial class for December R.I.B.A. Final (hour to be arranged, fee £1 1s. 0d.). (5) Courses in Surveying. A preliminary year course has been arranged to meet the requirements of the R.I.B.A. Preliminary and the Matriculation Examinations.

Tenders are invited for important alterations and additions to Carlow Cathedral, in accordance with the designs of Mr. Anthony Scott, M.S.A., of Upper Sackville-street, Dublin.

Foundation-stones of a new Free Church at New Duston, Northampton, were laid last week. The architect is Mr. F. H. Allen, of Glasgow-street, St. James's, Northampton, and the builder Mr. J. W. Lack, Greenwood-road, in the same town.

The Derbyshire County Council have completed the purchase of the Thornhill Estate, in the Valley of Hope, on which to erect a new lunatic asylum for the county. The sum paid for the site itself is about £12,000. The new institution is to be on the open-hospital-villa system.

Currente Calamo.

We owe half an apology to Mr. James Douglas, on whose inquiry, "Why not an Architect Laureate?" in the *Daily News* of June 2, we commented, on this page, in our issue of June 6. Mr. Douglas evidently knew more than we did. Mr. Asquith has not adopted his suggestion, but he has surely borne it in mind, and done a still better thing. The better-half of the new Poet Laureate has the best of all possible connections with architecture, and has doubtless inspired Dr. Robert Bridges with the charm she inherited from her distinguished father, Alfred Waterhouse, the most gracious personality of his generation of our order, and whose right to be regarded as its greatest member then living was acclaimed unhesitatingly by a plebiscite of our readers in our issue of July 8, 1887. Of no man could his poet son-in-law have sung more truly:

> I love all beauteous things,
> I seek and adore them
> God hath no better praise,
> And man in his hasty days
> Is honoured for them.

Round no two—poet and artist—in the days to come will more reverent and happy memories blend of the noble quest of fame so well achieved and splendidly crowned by the affection of daughter and wife.

The London County Council has finally acquiesced in the recommendation of the Improvements Committee not to move further next Session in regard to the reconstruction of Lambeth Bridge. We rather regret it. The statement by the Select Committee of the House of Commons, that it had rejected the scheme on the ground that "the bridge, as submitted, is rather too large for the present requirements if they remain as they are, but if that route was developed by street-improvements it was not large enough," reminds many people of the reason given by the Caliph Omar for burning the Alexandrian Library—viz., that if the books agreed with the Koran they were useless, and if they did not they were pernicious. Everybody knows, of course, that the rejection is a mere piece of spite perpetrated at the expense of the Moderate majority on the L.C.C. by the Radical majority in the House of Commons. Neither the needs for the bridge nor the goodness or badness of the design were seriously considered for a moment. As regards the last point, we will illustrate the design next week, and the public can judge for themselves of its merits.

The discussion on Mr. Somers Clarke's clever paper on "Squalid London," which we give elsewhere, was poor. The one remedy was indicated in his own concluding sentences. Voluntary societies may do something to stir up public opinion, and our own organisations may in some measure influence right judgement in regard to some of the things that concern the beauty of our cities and the safety of our ancient monuments. But till a Ministry of Fine Arts is charged with the work that is so well done in France, things are pretty hopeless. The man-in-the-street will doubtless tell you that if the First Commissioner of Works is given the job, as Earl Beauchamp suggests, everything will be all right! We wish Mr. Somers Clarke would join hands with Mr. Wynford Dewhurst, whose book we reviewed a fortnight ago, and peg away till the Philistines are smitten hip and thigh throughout the land. Till national recognition of the wickedness and folly of ugliness is followed by the conviction that it is a national duty of the supremest moment to seek and preserve beauty, squalor will rage like a pestilence, and indifference will endure the contagion which eats out the artistic health of the citizen. May all who know it lose no opportunity of seconding the assaults of those whose eyes are open to the baleful consequences!

Sir Roger Parkington, speaking at the meeting of the Automobile Association and Motor Union at the Hotel Cecil the other day, said that the amount spent on the roads by the Road Board from the taxes on motorists was a scandal. They were literally sitting on millions. A resolution asked the executive committee to make an inquiry into the policy of the Board, its annual income and expenditure, and the manner in which the funds are administered. This inquiry is certainly needed, and we trust it will be made forthwith, and the full details published as widely as possible. As things are going, it really seems to be the policy of the Board to accumulate a fund sufficient to pay off the National Debt somewhere about the time when universal aviation has rendered roads needless!

"Mr. Lloyd George's Confessional" figures in a Blue-book issued last Friday containing evidence given before the Committee of Public Accounts. On consideration of the report on the Houses of Parliament Buildings Vote, Mr. Leif Jones drew the attention of Sir Henry Gibson, K.C.B., to the item, "Alterations to private room of the Chancellor of the Exchequer to facilitate transaction of confidential business," which appeared under the heading "Urgent and Unforeseen Works." Mr. Leif Jones asked what was the nature of that alteration.—Sir H. Gibson replied that he thought it was in the nature of a partition in providing a room in which confidential business might be carried out.—Sir Clement Hill: A confessional.—Mr. Leif Jones: A torture chamber?—Mr. Earle: Was it not for the removal of the private secretary?—Mr. Leif Jones: Was it a boarding off?—Mr. Buchanan: Yes.—Mr. Leif Jones: Surely that has not cost £193?—Witness: That is the estimated cost of the alteration.—Mr. Leif Jones: Merely to put up a division wall?—Witness: I could not say exactly what the nature of the work was.—Mr. Leif Jones: Why was it proceeded with without putting it on the Estimates; it is hardly a sudden requirement?—Witness: It probably was not asked for until after the Estimates were settled; it was one of those points that cropped up during the course of the year.—Mr. Leif Jones: Could it not have waited? I find works put down in large numbers, and money not spent on the purposes intended, and then under the heading of "Works of an Unforeseen Character" you get quite a considerable sum spent which has not been put upon the Estimates, though it might very well have been there.

It is not in the least likely that Mr. Alfred Frampton's proposals to the London County Council in regard to the re-naming of London streets will be adopted. His principal desire is that all main thoroughfares should be called by one name throughout their length—that, for instance, the main street from Cheapside to Shepherd's Bush should all be called Oxford-street. Only a fortnight since we pointed out on this page the difficulties that would result. An address in Newgate-street, Holborn, Oxford-street, or Notting Hill Gate at once locates the destination of the comparative stranger. And most of us are "strangers" in many parts of London, even if we have been Londoners all our lives.

Even in the United States it is beginning to be recognised that unregulated architectural competitions are unfair to the architect and ruinous to the ratepayer. In the last issue of the *American School Board Journal*, an ably conducted monthly published at Milwaukee, New York, and Chicago, it is deplored that this destructive principle of competition has been further applied in the selection of architects for schoolhouse plans. While it is supposed that architectural competitions are intended to find the best plans, it is a fact that in the smaller cities the real contest is one of price-cutting, and the work goes to the architect who will work for the smallest commission. In Minnesota recently a law requiring competition has been interpreted generally to mean that the plans of the architects must be selected on the basis of the lowest cost, and until an opinion of the attorney-general was rendered, it has been not unusual to find in the newspapers of that State advertisements asking for bids on the privilege of submitting schoolhouse plans.

There is, of course, as our contemporary remarks, no possible device for injuring more the progress of school architecture than permitting, or even compelling, competition among architects in the price to be paid them for their services. It is a well established fact, proved again and again by figures collected by the American Institute of Architects, that no architect can prepare adequate studies and plans for buildings like schoolhouses at a commission of less than 6 per cent. of the total cost. The architect who sells his services at a lower figure than this must slight his work somewhere. He must either neglect to furnish complete plans or the task of preparing them must be done by inferior draughtsmen and engineers. Or the architect may even receive bonuses from favoured contractors. It is inevitable, anyhow, that a school board will not get the plans to which it is entitled, or which the public has a right to demand for its school buildings. "We know," says the *School Board Journal*, "of dozens of cases where schoolhouses were 'botched,' and where the ultimate reason of the failure was the school board's desire to get a 'cheap' architect."

A curious situation has arisen in New York as to what duty should be payable upon a stained-glass window made in London for the sanctuary of the Episcopal Cathedral of St. John the Divine in New York. The Customs authorities, who are no respecters of art for religious purposes, wish to tax the window at the rate of 45 per cent., the present tariff duty, and as the window cost £2,000 the duty would be £900. The Underwood Tariff Bill, however, which is nearing its enactment in Congress, taxes such works of art only to the extent of 15 per cent., so that under the new Bill the cathedral officials would pay only £300. Consequently, the cathedral people refuse to take the window out of Customs, though the opening in the Cathedral wall has been ready for the window nearly a month. They propose to wait until the Underwood Bill passes and

The problem that confronts the Customs authorities is whether this action can be allowed, and, if so, what charge should be made for storing the window until it is accepted. The window depicts Holman Hunt's "Light of the World."

It is officially stated that the work of rebuilding the façade of Buckingham Palace will be begun immediately after the August Bank Holiday. Their Majesties will leave London on or about July 29 to visit the Duke of Richmond at Goodwood Park, and at the end of the Goodwood week will proceed direct to Cowes. A number of shooting visits in the Midlands will follow, the King eventually going to Scotland, while Queen Mary, with Princess Mary and Prince John, will spend a few weeks at York Cottage, Sandringham, before joining his Majesty at Balmoral. The work at Buckingham Palace, it is expected, will occupy about two months.

Asked during his public examination at Ipswich Bankruptcy Court last Friday what system of bookkeeping he adopted in his business, Sidney Ernest Cook, a carpenter, of Hitcham, Suffolk, answered, "I used to write the amounts on a board, and when they paid planed them out." "Very economical," said the Registrar. But dangerous, he might have added, bearing in mind the Exchequer "tallies," which when the system of wooden accounts was given up had accumulated in such numbers that they were used as fuel, and through the overheating of the stoves the Houses of Parliament were burnt down in 1834.

Engineering Notes.

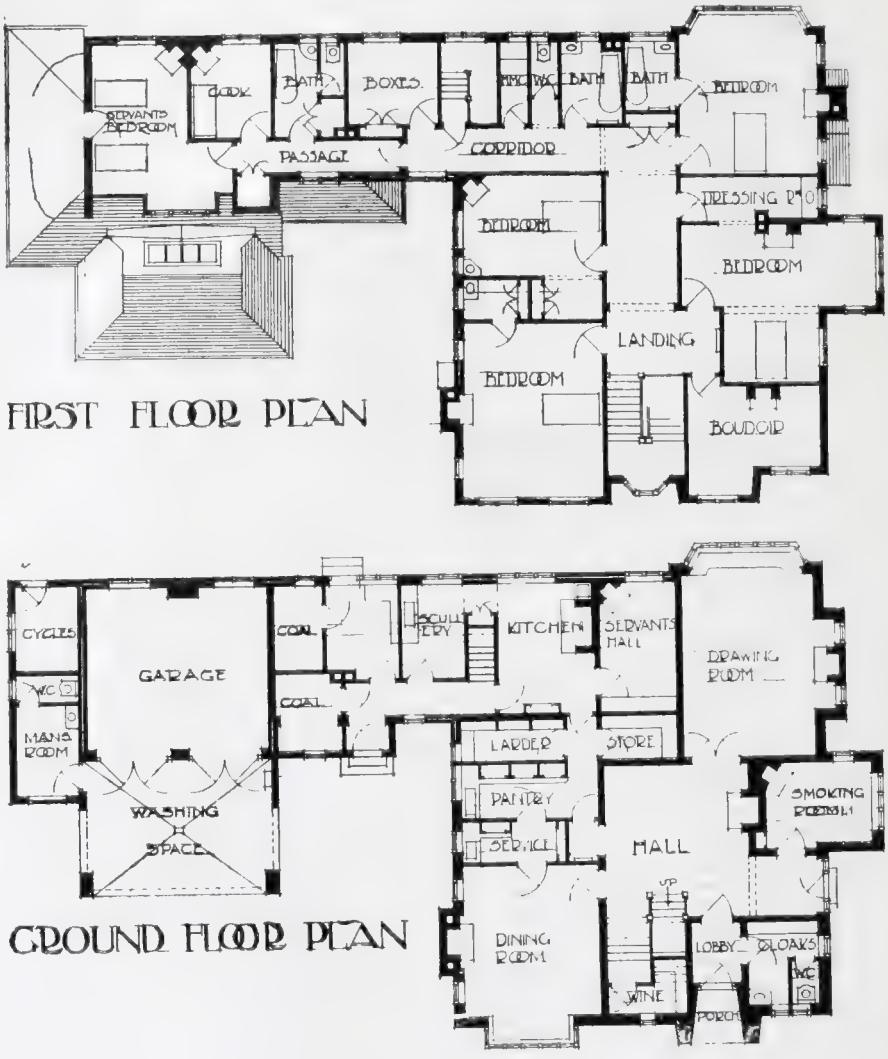
BOSTON.—The Town Bridge, Boston, Lincoln, was some time back found to be in a very dangerous state, and upon the advice of Mr. John J. Webster, M.Inst.C.E., of Westminster, the structure was condemned, and a new one was desgined by him. The new bridge, which is to be opened to-day, consists of six parabolic steel ribs hinged at the springing and at the crown, with a versed sine of 6ft. 6in., the width of the road and footways being increased by means of canti levers on the south side, from 35ft. to 43ft. between the inside of the parapets. The ribs are of box section constructed of angles and plates, the angles being 6 by 6 by ¾ average, with top and bottom flange plates 24in. wide, varying from ½in. to 1¼in. in thickness. The double web is constructed of plates ⅜in. thick average, stiffened with diaphragms at intervals. The ribs are 1ft. 9in. deep at the centre, tapering to 1ft. 3in. at the pins, the latter being 6in. in diameter, with cast-iron bearings. The spandrel verticals, fixed on the top of the ribs, and to the longitudinal girders, are of H-section rolled joists 10 by 5; the flooring consists of corrugated steel plates 9in. by ⅜in., with additional plate top and bottom ½in. thick under the roadway, and 3 by ⅜ under the footway, the former being paved with wood blocks, and the latter with concrete slabs. A handsome cast-iron cornice and parapet surmount the outer rib on the north side, and the cantilevers on the others. The old brick and stonework abutments were in splendid condition, and have been retained, with suitable modifications, for the new design. The contractors for the work are Messrs. Goddard, Massey, and Warner, Ltd., of Nottingham, the resident engineer being Mr. H. F. Richards, Assoc.M.Inst.C.E.

The partnership heretofore existing between J. B. Gripper and E. G. Stevenson, carrying on business as architects and surveyors, at Cannon-street, under the style of Gripper and Stevenson, has been dissolved.

Our Illustrations.

CHURCH OF ST. PETER, BARNSLEY.

This drawing, showing the interior of St. Peter's Church, Barnsley, is now on view at the Royal Academy Exhibition. A plan of the building appeared in our issue for April 5, 1912, when we gave an exterior and other views, showing different parts of the church to that now represented. The very long site has a considerable fall towards the sanctuary end. The Lady-chapel extends further eastward, as the land runs out to an acute angle, and this space is ingeniously utilised in this manner. The chancel is of three bays in length, opening up on the south side into this chapel, as seen in the perspective, and the organ is situated in the first bay of the nave, in a gallery. A processional path on both sides of the church is provided, and a feature is made of the groined narthex at the west end. The length of the nave is 91ft. and in width measures 49ft. The reredos, both in the chancel and to the chapel, are of 17th-century date, and came from Switzerland. The builders were Messrs. J. T. Wright and Co., of Leeds. Mr. Thomas Fisher was the clerk of works, and the architect is Mr. Temple Moore, F.R.I.B.A., of Bedford-row, W. Local brick was used externally, with interspersings of thin bricks to impart a sense of scale to the work. The 14th-century period of English architecture furnished the style, which is adapted to modern needs in this building.



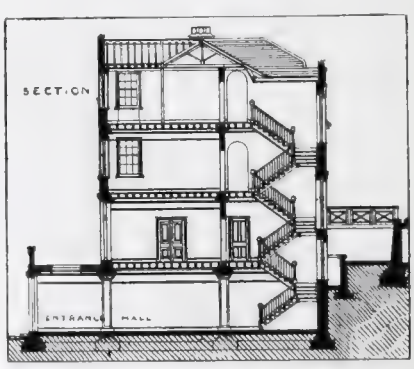
HOUSE AT BECKENHAM.—Mr. Henry Tanner, F.R.I.B.A., Architect.

HOUSE AT BECKENHAM.

The exterior treatment of this residence aims at a quiet and simple effect, with tile roof and tile-hanging to first floor and brick below. The roof is covered with a dark tile, the hanging tiles are of a brighter tone, and the bricks below of a broken colour; the chimney-stacks of purple Crowborough bricks. The windows have wooden frames and metal casements. Internally the central hall, with the double doors to drawing-room, is the chief feature, panelled in English oak, and with old oak doors used for the various rooms. The hot-water supply is obtained from a boiler apart from the range, as every bedroom has a separate lavatory basin. The arrangements of the house generally are shown on the plans. Mr. Henry Tanner, F.R.I.B.A., is the architect.

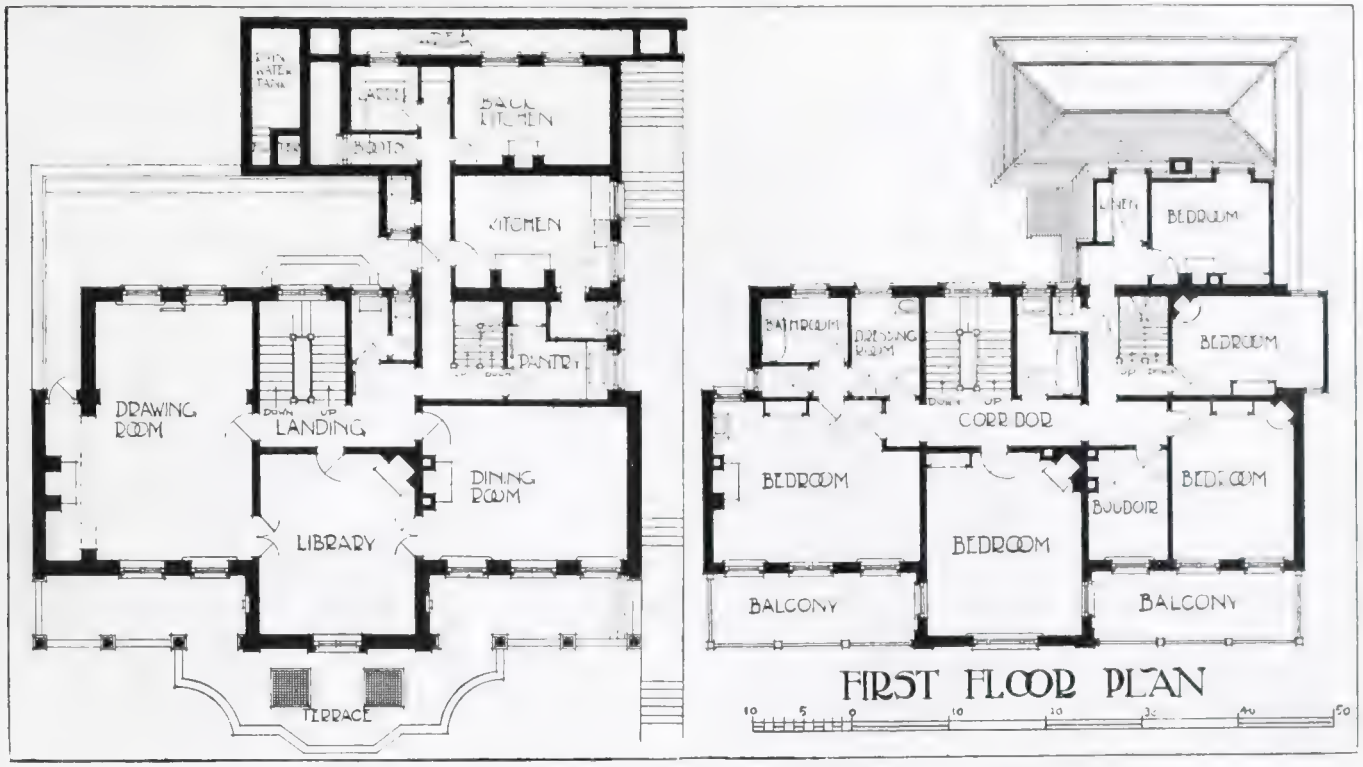
HOUSE AT HAMPSTEAD.

The chief difficulty to overcome in designing this house was due to the very considerable slope of the land. It was decided to avoid a large number of outside steps exposed to the weather, and forming the approach to the front door. To obviate this



HOUSE AT HAMPSTEAD.

Section Showing Entrance.



HOUSE AT HAMPSTEAD. Mr. HENRY TANNER, F.R.I.B.A., Architect.

the expedient was adopted of entering at the basement level, and so approaching the ground floor inside. The plans with the sections shown explain how this was managed. Particular care has been taken to avoid any dampness in the house, and agricultural pipes have been laid all round the foundations. The roofs are covered with green Westmorland slates, the walls are rendered in white roughcast, with Doulting stone quoins and trimmings generally. An important feature of the exterior is the terrace at the main floor levels above the entrance. Mr. Henry Tanner, F.R.I.B.A., is the architect.

HOUSE AT BURGH HEATH, SURREY.

This house is flint-faced. Most of the flints were found on the site. The roof is of thick Westmorland green slates, and the dressings of stone. The contractors are Messrs. Benfield and Loxley, of Oxford. The architect is Mr. Ernest Newton, A.R.A., whose drawings here published are now on view at the Exhibition of the Royal Academy.

NEW BUILDING, TAVISTOCK STREET, COVENT GARDEN.

This building has recently been erected on the site of Nos. 2, 3, and 4, Tavistock-street, and 4, 5, 6, and 7, Exeter-street, Covent Garden. It has been designed for the wholesale flower business of Messrs. George Monro, Ltd., of Covent Garden, and it is probably the largest building for the sale of flowers by any private firm in the country. A small part of the ground floor and basement is occupied by a shop for Messrs. Rochford, of Turnford Hall Nurseries; otherwise the sub-basement, basement, ground and first floors are used entirely by Messrs. Monro for salerooms, while the upper floors are planned for offices and messrooms for their staff. The building is of fireproof construction, and there are three electric lifts. The fronts are of Portland stone and bricks, a portion of the old shop-front to Tavistock-street being reconstructed in iron. Messrs. Patman and Fotheringham were the builders, Mr. F. Walker acting as clerk of works, and the architect is Mr. Lewen Sharp.

DESIGN SUBMITTED FOR THE NEW ARTS BUILDING, MANCHESTER.

This drawing, now on view at the Exhibition of the Royal Academy, illustrates the design of Mr. Paul Waterhouse, M.A., F.R.I.B.A., as submitted in the recent limited competition for the New Arts Building in Manchester University. The perspective explains itself, leaving little to add beyond saying that the successful design in this competition was by Mr. Percy S. Worthington, of Manchester, and it also is illustrated in the same exhibition this year.

Building Intelligence.

HURST GREEN, SURREY.—The Bishop of Southwark consecrated the Church of St. John the Evangelist, at Hurst Green, Oxted, on Saturday. The church is the last work of the late Mr. John Oldrid Scott, F.R.I.B.A., who lived at Oxted for many years, and had been churchwarden at the parish church. The church occupied a commanding site, and, owing to the peculiar position, has the pinnacled tower placed at the east end. The style is 14th-century Gothic, in flint with stone dressings. The roofing is gabled and in red tiling, with woodwork ceiling. Only the tower, the chancel, and a portion of the nave have been completed at present. The finished portion cost £6,500. In his address the Bishop said that every Bishop of that diocese would always honour and revere the name of John Oldrid Scott for the way in which he used his great gifts for the restoration of their cathedral church.

HURST PARK.—An opportunity was given on Monday at Hurst Park Racecourse to inspect the arrangements made for the meeting on the 25th inst. A month ago the members' and other stands were burned down by two militant Suffragettes. The new stands are being built in ferro-concrete. They measure 164ft. by 39ft., and on the ground floor are a luncheon-room, together with a grill-room for members, and also a grill room for Tattersall's, while the first floor is utilised for kitchens and cloakrooms. On the second floor are drawing-rooms, with sliding casements overlooking the course, and double-hung sashes to the back, overlooking the Paddock. The roof is non-inflammable and covers the whole structure, and the absence of columns keeps the view clear.

PERSHORE ABBEY.—Mr. Harold Brakspear, F.S.A., of Corsham, the architect for the repairs now being carried on to the west end of Pershore Abbey Church, received instructions last week from the Reparation Committee to examine the condition of the vaulting of the church east of the tower. This was necessitated by the supposition that the stability of the roof was not assured. A careful examination has proved that the suspicion was not unfounded, and that both the vaulting and the roof above require extensive alterations and repairs to render the building secure. Meanwhile the church is closed, and services on Sunday were held in St. Andrew's Church.

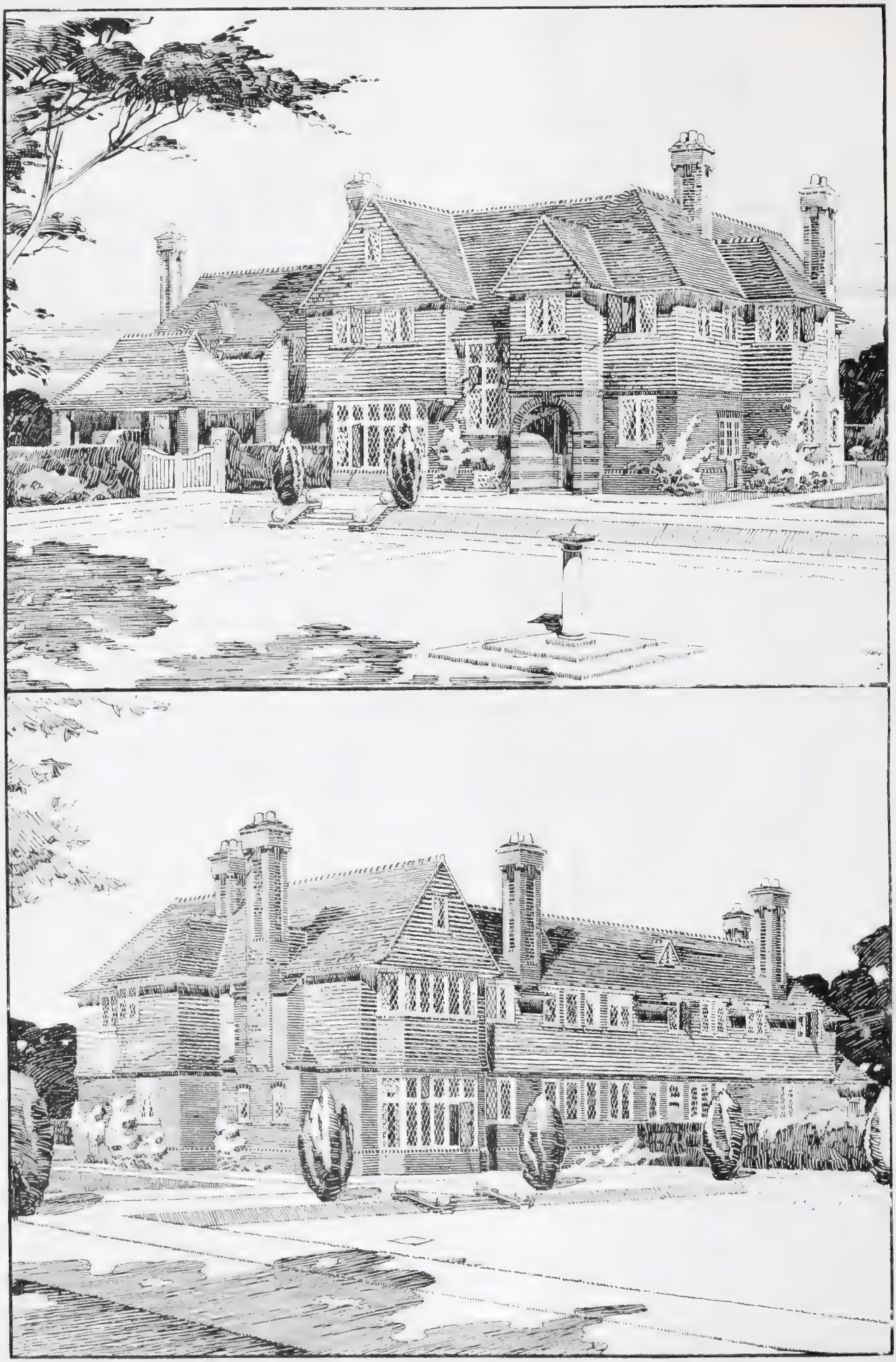
COMPETITIONS.

SAN FRANCISCO.—The Board of Library Trustees has invited the following named architects to submit plans for the new library building, which is to be built in the civic centre, at the corner of Larkin and McAllister Ests.: George W. Kelham, Albert Pissis, Willis Polk and Co., Reid Bros., Ward and Blohme, Edgar A. Mathews.

TOIEN, CHRISTIANIA.—Swedish and foreign architects and engineers are invited to enter a public competition for proposals for a regulation and subdivision plan of the property at Toien, belonging to the University at Christiania. The sum of 5,000 kroner has been granted for prizes, which the jury will divide into three; no prize, however, to be less than 1,000 kroner. The jury, moreover, reserves the right to buy plans, which have not been awarded a prize, at 500 kroner each. Programmes may be had by applying to the Secretary of the University, Christiania. For a programme with maps competitors must deposit 20 kroner, which will be refunded against a receipt proving that a plan has been sent in. The competition plans must be sent to the University Secretary, Christiania, not later than November 15, 1913.

A building to be known as the Park-lane Hotel is about to be erected upon a site abutting upon the northern side of Piccadilly and the southern side of Brick-street, with projecting columns and a balcony next to Piccadilly, for Sir Richard Sutton Bart. The architect is Mr. Charles W. Stephens of Hans-road, Chelsea.

The text has been issued of a Government Bill to amend the Finance Act, 1908, by authorising the application of £145,000, out of the £600,000 provided for by that Act for public offices at Westminster towards defraying any expenses incurred by the Commissioner of Works in providing buildings and executing other works in connection with the Home Office Industrial Museum (£25,000), Admiralty, additional accommodation (£55,000), and College of Art, South Kensington (£65,000).



HOUSE AT BECKENHAM FOR MRS. JACKS. Mr. Henry Tanner, F.R.I.B.A. Architect.



Mr. Temple Moo



F.R.I.B.A., Architect.



SOUTH ELEVATION



FIRST FLOOR PLAN

Ernest Newton R.I.
Architect.
9 Raymond Buildings
Gray's Inn.



NORTH ELEVATION



GROUND FLOOR PLAN



HOUSE AT HAMPSTEAD FOR MR. FRANK MATHIESON.—Mr. Henry Tanner, F.R.I.B.A., Architect.



DESIGN SUBMITTED FOR THE NEW ARTS BUILDING, MANCHESTER.—By Mr. Paul Waterhouse, M.A., F.R.I.B.A., Architect.



NEW BUILDING, TAVISTOCK STREET, COVENT GARDEN.—Mr. Lewis Solomon, Architect.

Correspondence.

QUANTITY SURVEYORS AND TENDERS.

To the Editor of the Building News.

Sir,—We notice, to our astonishment, after very many years in practice, that the Metropolitan (?) Borough of Lambeth are actually advertising in some of the building trades journals tenders for the preparation of certain bills of quantities for the new depot premises at Rommany-road, West Norwood, and that an objectionable guinea deposit is required for the very small particulars, which can only state the amount of the approximate cost and a very brief description (if any) of the nature of the building proposed to be erected.

The proposed tenderers, on receiving these small particulars, should send in, as the advertisement says, "not later than" twelve o'clock noon on Thursday, July 24, 1913.

In view of this advertisement—which is, no doubt, most insulting to the quantity-surveying profession, we particularly appeal to all quantity surveyors to give the Metropolitan Borough of Lambeth, and all other public authorities venturing on these lines, a very wide berth.

Perhaps the Quantity Surveyors' Association will take this matter up in the interest of its own rules and members, and to the benefit of the profession at large.—We are, etc., R. E. Carpenter and Son.

112, St. Peter's-road, Leicester,
July 15, 1913.

BITS AND SCRAPS.

Sir,—Anglo-Saxon architecture followed the Roman and preceded the Norman in this country. It endures chiefly in the imagination of the propounders of theories and other unpractical magnates, and it is remarkable for the number of examples that should exist but do not, rather than for those actually found. Its cult is maintained by fairy-tales from Matthew Paris, Bede, and other venerable authorities who wrote on building to amuse the uninitiated. Norman architecture originated in Normandy, where, in the beginning of the 11th century, it made its first appearance. The Normans invaded England in 1066; but their architecture preceded them, for Edward the Confessor built the choir and transepts of Westminster Abbey in that style, and his building was consecrated in 1065. Almost every Saxon cathedral was rebuilt from the foundations by Norman bishops, and to-day fifteen out of twenty-two of these buildings bear testimony to the thoroughness of their work. Parish churches, too, are found all over England, in which there are Norman doorways, windows, piers, and arches. Norman barons kept pace with Norman bishops, and in fifteen years they built eleven hundred and fifteen castles, covering the land with them. Norman architecture may be called "Norman Romanesque," even as other varieties are called "Lombardo Romanesque," "German Romanesque," and "French Romanesque of the central and southern provinces," but nothing is gained by adopting a nomenclature of this kind. The expressions "Anglo-Saxon Romanesque" and "Celtic Romanesque" are pedantic and misleading, for England and Ireland copied Norman work, and did not go direct to Romanesque buildings for their inspiration, as the Normans did. It must be remembered that when Anglo-Saxon cathedrals and churches are spoken of, these buildings were of wattles and plaster, or of boards, the roofs being thatch or reeds, so that churches pulled down by the Normans had nothing in common with the stone buildings they put up. We are informed by chroniclers of the time that when the Anglo-Saxons wanted to build a stone church they had to import foreign workmen to do the work. There is no word in Anglo-Saxon for building in stone. "Getembrian" is to build with wood. So that when they spoke of building a church with stone, they expressed themselves thus, "We will build a wooden church of stone." To me architecture is not a question of drawing and designing; it is essentially a practical art, and true exponents of it work and invent, while mere professors talk and give us all that a moderate amount of collegiate architectural culture, with an unwarranted proportion of sciolism, can afford. True architecture has grown gradually, and by development; consequently, it has no place for the cataclysmic scenic arrangements and arbitrary acrobatic feats in composition much favoured by "eminent" architects of the present day. Our colleges of science and other public buildings are now made up of bits and scraps from Italian palaces, which buildings look well enough in their original unmangled condition; but when they are vulgarised by botchers, they disgust men of sense, though they may captivate the ignorant gaping multitude. Will anyone say why the architecture of Central Italy in the 15th century should be that of London in the 20th century? The Five Orders, and their possible disorders, may be of interest to the archæologist and the antiquarian; but when an architect falls back on them, with their sham columns and entablatures, to decorate his building, then he is desiccated and sapless, mistaking for taste a caprice that is more evanescent even than fashion in women's dress. That artifice should supplant art is a sign that we, who are satisfied with it, are architectural barbarians, and that such professors of architecture, as an outward and visible sign of the decadence of their art, should not be recognised as shams, showing that we are as yet not half-civilised.—I am, etc., W. E. M.

PARLIAMENTARY NOTES.

REGENT-STREET QUADRANT.—In answer to Mr Boyton, on Monday, Mr Runciman said: A design was submitted a short time ago by architects acting for lessees of premises in the Quadrant, but it was not considered by the Commissioner of Woods to be satisfactory, and the matter is receiving further consideration. No architect has been entrusted by the Commissioner of Woods with the design, and no special instructions have been issued, but the recommendations of the recent committee on the subject of the completion of the Quadrant are known to the architects who submitted the design above-mentioned Mr Boyton: Will the right hon. gentleman say whether or not an architect or architects have been appointed to carry out the findings of the committee?—Mr Runciman: No architect or architects have been appointed for that purpose.—Mr. Boyton: When the appointment is made, will the design include the County Fire Office and the block of buildings facing Piccadilly-circus and Piccadilly, and will the design be prepared in accordance generally with the committee's report?—Mr. Runciman asked for notice of this question.—Mr. Fell: Can we have an assurance that nothing will be done till the subject has been debated in the House?—Mr. Runciman: If the hon. gentleman means that no appointment of an architect will be made, I could not give him that promise. Nothing drastic will be done.

The Ven. Archdeacon Madden dedicated at St. Philip's Church, Southport, on Friday, the new choir-stalls and prayer-desks. The work has been designed by Mr. Goodwin S. Packer, M.S.A., architect, Southport, and has been executed in Austrian oak by Messrs. Harry Hems and Sons, of Exeter.

At Rainford Parish Church, on Sunday, the Bishop of Liverpool dedicated a window which has been put in the chancel as a memorial of the late vicar, the Rev. Canon Bridger. The window represents four great preachers, St. Aidan, Ven. Bede, St. Wilfrid, and St. Thomas of Canterbury, bearing their respective emblems.

Mr. J. H. Farrar, who, as a student of the Architectural Department of the Leeds School of Art, gained a National Scholarship, has recently been awarded a Travelling Scholarship for Architecture at the Royal College of Art, and has also just been appointed head of the Architectural Section at the Cambridge School of Arts and Crafts.

The parish church of St. Andrew, Loxton, Somerset, was reopened last week after restoration from plans by Mr. G. E. S. Streatfeild, of London, the entire cost being borne by Messrs. H. and F. Tiarhe. The canopied reredos, panelling of eastern wall, choir-stalls, and clergy-desks have been executed by Messrs. Harry Hems and Sons, of Exeter, who also repaired and restored the ancient screen.

LEGAL INTELLIGENCE.

TAMWORTH ARBITRATION AWARD.—At the meeting of the Tamworth Rural District Council, on Saturday, the surveyor (Mr. H. J. Clarson) presented a report on the recent arbitration proceedings with regard to a claim for damages by sewerage operations, made by Mr. Felix Hamel. Mr. Clarson stated that Mr. Bigwood, of Birmingham, had made his award, under which he directed the council to pay to Mr. Hamel £291 10s., and also ordering certain work to be done to put the premises in good order. The amount of compensation awarded seemed to him (the surveyor) to be very excessive. It would be necessary to apply to the Local Government Board for sanction to borrow a further sum of £2,000, made up as follows:—Monies already expended, in excess of loan, £850; amount to be paid to Mr. Hamel, £291 10s.; cost of completing the work, £100; costs of umpire and arbitrators, £232 7s. 7d.; costs of arbitration, £500.—Mr. F. Alldritt said he was afraid it was a very bitter pill.—The Rev. J. O'Toole suggested that a suitable epitaph for that unfortunate affair would be: "Someone has blundered." It was resolved to make application to the Local Government Board for sanction to borrow a further sum of £2,000, to cover the cost of work in excess of the estimate and the cost of the arbitration.

LAND VALUES ARBITRATION.—Successful Birmingham Appeal.—Mr. Daniel Watney, who acted as Official Referee, under the Land Valuation Act, has given his decision in the appeal by Mr. W. R. Davis and Mr. A. A. Rollason (executors of the late Mr. William Davis) against the estimate by the commissioner as to the value of some property in Edgbaston-street, Birmingham. The contention of the appellants was that the site was worth at least double as much as the Inland Revenue valued it at (£800), being, in their judgment, worth £8 per square yard. It was stated that Mr. Davis entered negotiations to secure the land on a building lease, and was prepared to pay 8s. per yard ground rent, but ultimately purchased the property for £2,050. The high value of the land was due largely to its accessibility to the markets. The decision of the referee has been communicated to Mr. Rollason in the following terms:—"Item No. 2 should be £1,170 instead of £1,750, as stated in the amended provisional valuation, and the assessable site value should be £1,330 instead of £750, as stated in the amended provisional valuation. I also decide that the costs of the reference shall be paid by the Commissioners of Inland Revenue."

WHAT IS WHITE-LEAD?—In the King's Bench Division, on 8th inst., before Mr. Justice Avory, a settlement was announced in the case of Thomas Raban and Son, of Baldock, Herts. v. Thomas Merry and Co., Ltd., of Suffolk-street, Birmingham. For the plaintiffs, Mr. C. C. Hutchinson, K.C., and Mr. G. C. Hutchinson, instructed by Messrs. White and Leonard. For the defendants, Mr. T. Terrell, K.C., and Mr. Maddocks, instructed by Messrs. Jaques and Co.—Mr. C. C. Hutchinson, K.C., for the plaintiffs, said the parties had come to terms. It was desired to submit the terms of settlement. The terms were as follows:—The defendants admit that, as alleged in the statement of claim, on a sale of goods by and under the description of white-lead, or any of the descriptions aforesaid, it is a condition to be implied according to the usage and custom of the trade that the substance to be sold and delivered should be the substance commonly known as white-lead, otherwise hydrated oxy-carbonate of lead, and also admit that they supplied to the plaintiffs a pigment which was of a different description and composition, being composed not of hydrated oxy-carbonate of lead, but of sulphate of lead. The plaintiffs admit that the defendants did not make any representations intentionally or fraudulently, so as to induce the plaintiffs to enter the said contract. And plaintiffs and defendants, in consideration of the respective admissions, have mutually agreed to settle the said action upon the terms and conditions hereinafter contained, so as to put an end to the action. The defendants hereby undertake that at all times hereafter they will not offer for sale, or sell and deliver in the course of their business, any substance or pigment under the name of "white-lead," other than the substance or pigment commonly known as white-lead—viz., hydrated oxy-carbonate of lead. Mr. T. Terrell, on behalf of the defendants, agreed to these terms.

ARCHITECT AND SURVEYOR SUES CANON FOR LIBEL.—Smith v. Streatfeild.—The defendant, Canon Streatfeild, whose cross-examination was in progress when we went to press last week, further said he did not regard Mr. Brown as a fraudulent person.—Is not the

real fact that the Fenney Compton surveyor had certified for £260, and the Goddington surveyor certified for £10 only to be spent, and the matter you very angry.—Defendant: I was not angry until I found that I would have to spend £150. He admitted that the matter was still rankling in his mind when he published the pamphlet.—Mr. Stallwood (the surveyor who made the second survey at Goddington, and ordered the work upon which the canon claimed to have spent about £150) also gave evidence. He expressed the view that in regard to drainage, a diocesan surveyor should make himself reasonably sure of the condition being satisfactory. He would probably pass over such conspicuous as had been described. Everything that was contained in his report was, in his judgment, required to be done, and they represented repairs that should be done as between the outgoing and the incoming rector. He denied that he went to the Goddington Glebe with the intention of finding fault. It was his duty, after ordering work to pay a final visit of inspection, to see it was carried out. It was not correct to describe the work that he ordered as being in the nature of "improvements," instead of repairs, and he did not think that the views expressed by the plaintiff in regard to this point accord with those of most diocesan surveyors.—Mr. Rawlinson, diocesan surveyor at Rochester and Southwark, said that, in his view, the work ordered by Mr. Stallwood represented repairs that might reasonably be executed. It was his custom also to pay a visit of inspection, to see that work ordered was carried out.—Is that the general practice among diocesan surveyors?—To the best of my knowledge.—Mr. Ed. Mansell, architect, of Birmingham, and diocesan surveyor for the Warwick section of the diocese of Worcester and for the diocese of Birmingham, said he considered matters set out in the report of Mr. Stallwood were the proper subject of dilapidations, and were not improvements. He always considered it to be his duty to make a final inspection. After considerable other evidence as to the nature of the work executed at Goddington, the case for the defence concluded. Subsequently counsel on each side addressed the jury, and Mr. Justice Bankes summed up. In the course of an elaborate summing-up, his Lordship said that it was a most serious thing to charge a professional man like the plaintiff with not having taken proper care in connection with a survey of this sort, where he had practically to act as an arbitrator; but it was even far more serious to say that having been found out in alleged neglect of duty, he had been guilty of gross and deliberate misrepresentation, to cover up what he had done. The jury had to decide what the pamphlet really imputed against the plaintiff, and whether the imputations were true. The jury, after an hour's retirement, found that the words complained of by the plaintiff were not true, that the defendant canon was actuated by malice, that the defendant printers were not actuated by malice, and they awarded £50 damages to the plaintiff. At the request of the Judge, they divided the damages, awarding 20s. of the amount against the printers. Judgment was deferred by Mr. Justice Bankes until to-morrow (Saturday), when the legal point will be raised by counsel.

Mr. G. J. Roderick, surveyor to the urban district council of Llandilo, has been elected surveyor and sanitary inspector to the rural district council of Llansilin, in succession to the late Mr. E. Vaughan Edmunds.

The Pulteney Hotel, at Bath, is about to be enlarged by the incorporation of the three houses in Pulteney-street that adjoin the present building. The tender of Messrs. Jacob Long and Sons, of Bath, has been accepted at £4,980, and operations were begun this week.

Prince Henry of Battenberg opened at Herne Bay, on Friday, the King Edward VII. Memorial Hall on the East Cliff, and unveiled a white marble medallion to the late King, by M. Emile Fuchs, M.V.O., in the vestibule. The building combines a concert-hall, with seating accommodation for 1,500 persons, with a roof garden capable of seating another 1,100. It was constructed from the plans of Mr. F. W. J. Palmer, engineer to the urban district council.

At the monthly meeting of the Weston-super-Mare Urban District Council, the works committee reported that the surveyor (Mr. H. A. Brown) had laid before them plans and estimates for the drainage of the eastern portion of the district, and of Meadow-street and neighbourhood, and, having approved thereof, they recommended that application be made to the Local Government Board for sanction to a loan of £10,920 for the carrying out of the works. The recommendation was adopted.

STATUES, MEMORIALS, &c.

CALCUTTA.—The bronze statue of Lord Kitchener, which has been executed by the Brothers March, is now completed, and will shortly be shipped to Calcutta to be placed in position on the Maidan. Mr. Sydney March modelled the statue, and work of casting and finishing the bronze has been carried out by Messrs. March at their foundry at Farnborough from the cannon sent from India. The statue represents Lord Kitchener in Field-Marshal's uniform, seated on his favourite horse, Dongola. A replica of the statue, made of old cannon taken from Omdurman, is to be erected at Khartoum.

WATER SUPPLY AND SANITARY MATTERS.

MILTON SEWERAGE AND SEWAGE DISPOSAL.—The Brampton Rural District Council have instructed Messrs. Taylor and Wallin, of Newcastle-upon-Tyne and Birmingham, to prepare a scheme of sewerage and sewage disposal for the parish of Milton. This is the fourth scheme which this council have entrusted to Messrs. Taylor and Wallin.

SEWAGE DISPOSAL WORKS AT SURBITON.—The new sewage-disposal and dust-destructor works at Surbiton were formally inaugurated on Saturday during a visit from the Institute of Cleansing Superintendents. Since the dissolution some twenty-seven years ago of the Lower Thames Valley Main Sewerage Board, which was to deal with the sewage problem of twenty or more riparian bodies from Staines down to Mortlake, and which spent over £60,000 in unsuccessful attempts to find a solution, the various local authorities have undertaken the work of sewage disposal independently. Surbiton was the first to construct its own sewage-disposal works, which have been in operation for the past twenty-six years. The new Surbiton works are in the Lower Marsh-lane, and the scheme has cost the urban district council something like £80,000, provision being made for double the present population.

A new town hall and constitutional club, built from plans by Mr. Walter H. Brierley, F.S.A., of York, was opened at Thirsk last week.

At Weston Favell, on Saturday, the foundation-stone of new church schools was laid by the Lady Knightley of Fawsley. The buildings will cost £1,600. Messrs. Law and Harris are the architects, and the contractor is Mr. W. Heap.

We are informed that the Royal Academy Exhibition will remain open a fortnight longer than usual this year, and instead of closing on the first Monday in August, will continue open till the third Monday, the 18th prox.

It was announced at a meeting of the National Trust on Friday that a gentleman, whose name was not disclosed, had offered to purchase Box Hill entirely at his own cost, with a view to handing it over to the trust, or some other public body.

The Cock Tavern, 22, Fleet-street, E.C., is about to be set back and rebuilt in connection with the widening of that thoroughfare. The architects for the reconstruction are Messrs. Gilbert and Constanduros, of 43, Finsbury-square.

At the last meeting of the West Riding County Council, at Wakefield, Mr. Percy O. Platts, second son of the late Mr. S. C. Platts, chartered accountant, Leeds, was appointed West Riding architect at a salary of £500 a year, in succession to the late Mr. J. Vickers Edwards.

The plans of Messrs. Wylson and Long for the reconstruction of the Tivoli Music-hall, necessitated by the proposed widening of the Strand, have been conditionally approved by the theatres and music-halls committee of the London County Council. The new hall will have accommodation for about 2,050 persons.

A special ward for cases of puerperal fever was opened on Friday at the Birmingham and Midland Hospital at Sparkhill. It is a self-contained structure, providing twenty-five beds, and has cost £6,000. One of its chief features is a sheltered verandah with six beds on the southerly side for open-air treatment.

At the last meeting of the City Corporation, a letter was read from Earl Beauchamp, the First Commissioner of Works, offering to the corporation, on the part of a donor, who wished to be anonymous, a statue of Elizabeth Fry, by Mr. Alfred Drury, A.R.A., for erection in the neighbourhood of old Newgate Prison—the scene of her labours—or at the new Central Criminal Court. The communication was referred to the City Lands Committee.

Our Office Table.

The new building for the Schools of Architecture, Painting, and Sculpture at University College, Gower-street, W.C., [illegible] from plans by Professor F. M. Simpson, F.R.I.B.A., will be ready for the opening of the [illegible] session in October. It will provide accommodation for a hundred students. [illegible] rooms at an early date for a Department of Town Planning. The new building will house the Slade School of Fine Art, and new modelling studios are about to be erected so that the three arts of painting, sculpture, and architecture will be housed side by side. The Senate of the University and the University College Committee will have the assistance of a special Architectural Education Committee in managing the school. This committee includes Professor S. D. Adshead, Mr. Reginald Blomfield, A.R.A., P.R.I.B.A., Mr. Ernest Newton, Mr. John Slater, Mr. Andrew [illegible], and Mr. [illegible]. The Director of the school is Professor F. M. Simpson, who will be assisted by Professor R. Elsey Smith, Dr. J. J. Burnet (Special Visitor for Academic Design), Mr. Leslie Wilkinson, and Mr. Arthur Stratton.

At a meeting of the Derbyshire County Council at Derby on Friday, Councillor C. F. White asked whether it was true that in certain contracts by the council, especially for the Education Committee, a clause was inserted making it imperative for contractors to use materials manufactured by a firm of directors and shareholders of which were members of the council. The answer was in the affirmative, and the architect said that the work of those firms was better and cheaper than [illegible]. The chairman, Alderman James Oakes, said that if his firm were alluded to, he wished to state that he had [illegible] and now, from the chair, he told him he must not make any such conditions, but buy from other firms, even if he had to pay more.

In the Gresham Hotel, Dublin, last week, Mr. James Beckett, past president of the Dublin Master Builders' Association, was honoured by a gift from the members of the association, and entertained to dinner by the new president, Mr. John Good, J.P. The chairman (Mr. Good) said Mr. Beckett helped to bring about, in 1895, the revival of that association. From 1895 till 1900 he was annually elected vice-president, and in that year he became president. He had taken an active part in arranging the present excellent form of building contract in Dublin. Mr. H. M'Laughlin, hon. secretary of the association, read the terms of the illuminated address, signed by the officers and all the members of the Dublin Master Builders' Association, and the chairman then presented the address, with a large silver loving cup, to Mr. James Beckett. Mr. Beckett expressed his acknowledgments of the gift in feeling terms. He added that during the more than fifty years that had elapsed since he took up the work of a builder in Dublin he had been extremely fortunate in that he had had the good will and confidence of a very large number of his fellow-citizens, and that he should have the warm friendship of his fellow-builders was a higher honour and a greater treasure than the gifts themselves. Mr. R. Deane Bolton, Sir Maurice Dockerell, Mr. Howard McGarvey, and Mr. James Connolly also spoke during the evening.

A town-planning inquiry was held at the town hall, Sheffield, on Tuesday, by Mr. Thomas Adams, Local Government Board Inspector. It concerned the corporation's application for authority under the Housing and Town Planning Act, 1909, to prepare a town-planning scheme with reference to a large area situated near Ecclesall, Abbeydale, and Norton Woodseats, comprising about 1,700 acres of a very attractive character. Evidence for the scheme was given by Mr. E. B. Gibson, deputy town clerk; Mr. C. F. Wike, the city engineer; Col. H. K. Stephenson, chairman of the town-planning sub-committee of the city council, and others. The inquiry was closely limited to argument and evidence as regards the extent of the area, and all discussion of

any tentative schemes of the corporation was ruled out of order at that stage. Various interested parties were represented, and in each case the definition of the area to be scheduled was opposed, the main opposition coming from those who appeared in connection with the portion of Earl Fitzwilliam's estate included in the application. It was held that the estate was self-contained, and was being developed on right and proper lines, and this was admitted; but the corporation contented that the estate's development could not be carried forward without relationship to adjoining property. Opposition was to some extent lessened by an announcement by Mr. Adams, the inspector, that no property could be taken without the payment of compensation, in the event of a scheme being sanctioned.

Three town-planning schemes are contemplated by the Huddersfield Corporation in the more thickly-populated parts of the borough, and a conference was held at the town-hall on Monday with the object of securing the co-operation of the landowners concerned. One of the schemes, which is to cover 317 acres, comprises three areas, partly in the Lindley, Marsh, and Birkby wards; and another scheme, to cover 1,082 acres, embraces four tracts of property on the eastern boundary of the borough, extending from Bradley by way of Leeds-road to Mold Green. The mayor, who presided, explained the objects of the conference. The various property-owners stated the conditions in regard to their properties, and several applications were made that certain areas should be excluded. The mayor undertook that the borough engineer and other officials should confer with the owners as to details, and stated that other conferences would take place before the schemes were finally decided upon.

During the months of April, May, and June of this year the Road Board have made advances amounting to £205,262 from the Road Improvement Fund to county councils and other highway authorities as follows: For road-crust improvements, £160,973; for road-widenings and improvement of curves and corners, £30,628; for road diversions, £4,076; for reconstruction and improvement of bridges, £9,085; for construction of new roads and bridges, £500. The total grants up to June 30 are as follows: For road-crust improvements, £1,073,037; for road-widenings and improvement of curves and corners, £118,636; for road diversions, £28,335; for reconstruction and improvement of bridges, £53,562; for construction of new roads and bridges, £61,078. Advances by way of loan have also been arranged to the sum of £229,643. In addition, further advances amounting to about £1 870.942 have been indicated to highway authorities towards works of road construction and improvement. The total amount paid into the Road Improvement Fund from the constitution of the Board up to June 30 amounted to £3 556 995. The total advances made and promised up to June 30 were £3,304,233, and the balance now available for grants and loans is £121,762.

The Water Department of Houston, Texas, after experimenting for several years with service pipes in an effort to reduce as far as possible the destruction by electrolytic action which had been going on, as a last resort determined to try lead-lined pipe. Previous to this, galvanised pipe which had been used had to be replaced in a large percentage of the services throughout a certain section of the city—in some instances twice a year. The superintendent states, in his latest annual report, that "the use of lead lined pipe has proved so effectual, after a thorough trial, that it is not probable we will experience any trouble of this nature after the old pipes have been removed in the electrolysis districts."

The new General Hospital for Toronto, built at a cost of 3 500,000d[illegible] has just been opened by Sir John Gibson, Lieut.-General of Ontario.

Mr William Brown, principal of the firm of Messrs. William Brown and Sons, builders and contractors, of Salford, has died in Liverpool, in his sixty-second year.

MEETINGS FOR THE ENSUING WEEK.

Saturday (To-morrow).—St. Paul's Ecclesiological Society. Visit to Elsenham and Thaxted. Train from Liverpool-street Station, 2.15 p.m.

Trade News.

WAGES MOVEMENTS.

LABOUR AND WAGES IN JUNE. It is reported by the Labour Exchanges that there was during June a continuance of the demand for workmen of all classes in the shipbuilding, engineering, and building trades. The upward movement in wages continued. Compared with the high level of a year ago, employment generally showed an improvement, especially in the building, pig-iron, and shipbuilding trades. The tinplate trade, however, was much worse, and the iron and steel and glass trade showed some decrease.

DARWEN. Over 100 of the joiners of Darwen came out on strike on Saturday. Six months ago they notified their employers of their intention to leave work, and the notices expired on Saturday. The men are in receipt of 9d. per hour, and their demand is for an advance of 1d. This the employers have refused to concede.

LANCASHIRE JOINERS. The strike of joiners in Rochdale, Heywood, Bury, Ramsbottom, and Radcliffe was settled on Friday at a meeting of the Northern Centre Conciliation Board, held in Manchester. The men left work on the evening of April 30, so that the strike has lasted just over ten weeks. The men applied for an immediate increase in their wages to 10d. an hour over the whole district. Before the strike the men's wages in the different districts were:—Rochdale, 9¼d.; Bury and Radcliffe 9½d.; Heywood, 9d.; Littleborough and Ramsbottom, 8½d. The terms of settlement agreed on are:—Rochdale: An immediate advance to 9¾d., and a further advance of ¼d. on May 1, 1914. Littleborough and Ramsbottom: An advance to 9¾d., and a further halfpenny on May 1, 1914. Heywood: An advance of ¾d., and a further ¾d. on May 1, 1914. Bury and Radcliffe: An immediate advance to 10d. The rules for all districts are to be the same; but the employers and men of each district have signed the rules separately. A number of alterations have been made in the present working rules, and agreed on by both sides. The new rules are to remain in force until 1916.

Herr Walter Kyllmann, a well-known architect in Berlin, died on Wednesday week, aged seventy-six.

The salary of Mr. A. E. Joyce, surveyor to the Westmeath County Council, has been increased by £150 per annum.

Mr. John Oldrid Scott, F.S.A., F.R.I.B.A., of Ridgeway House, Oxted, Surrey, who died on May 30, has left £56,259 gross and £30,998 net.

We regret to learn that the London Architectural Association had to abandon its proposed week-end visit to Dublin, which was to have taken place from Friday till Monday last.

The late Mr. Frank Simon Smith, of Glenton, Whitaker-road, Derby, of the firm of Messrs. John Smith and Son, clockmakers, of Queen-street, Derby, left £43,342, with net personalty £34,625.

The North-Eastern Railway Company have completed the Little Callerton line, extending from Ponteland Station to Darras Hall, a suburb of Newcastle-on-Tyne. The line is for the present a single track, principally carried on embankments.

The Roman Catholic Bishop of Shrewsbury (Dr. Singleton) laid the foundation-stone, on Sunday, of St. Edmund's Orphanage and Certified Poor-law School for Boys at Bebington. The institution will provide accommodation for about sixty boys, and has been designed by Messrs. Edmund Kirby and Sons, of Liverpool, and will cost £7,635.

Since the inclusion of the borough of Batley in the Oakwell Joint Hospital area, which previously comprised the districts of Birstall, Gomersal, Birkenshaw, Gildersome, and Drighlington, considerable extensions have been necessary. In the infectious hospital, accommodation is now provided for sixty beds, and the total expenditure on the buildings and furnishings since 1896 has been about £20,000, of which nearly £7,000 has been expended on recent extensions. The formal opening of the extensions took place on the 9th inst. Mr. J. W. Burrows is the architect.

LATEST PRICES.

IRON.

Steel Joists, Belgian and German (ex steamer, London)	per ton	£6	2	6	to	£6	5 0
Steel Joists, English		7	10	0	,,	7	12 6
Wrought-Iron Girder Plates		7	0	0	,,	7	5 0
Steel Girder Plates		7	2	6	,,	8	2 6
Bar Iron, good Staffs		6	5	0	,,	8	10 0
Do., Lowmoor, Flat, Round, or Square		20	0	0	,,	0	0 0
Do., Welsh		5	15	0	,,	5	17 0
Boiler Plates, Iron—							
South Staffs		8	0	0	,,	8	15 0
Best Snedshill		9	0	0	,,	9	10 0

Angles 10s., Tees 20s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £8 15s to £9.
Ditto galvanised, £14 to £15 10s. per ton.

Galvanised Corrugated Sheet Iron—	No. 18 to 20. Per ton.	No. 22 to 24 Per ton.
6ft. to 8ft. long, inclusive gauge	£13 0 0 ...	£13 10 0
Best ditto	13 0 0 ...	14 0 0

Wire Nails (Points de Paris)—

3 to 7	8	9	10	11	12	13	14	15	B.W.G.
8/3	8/9	9/3	9/9	10/3	11/-	11/9	12/6	13/6	per cwt.

	Per ton.					Per ton	
Cast-Iron Columns	£7	10	0	to	£9	0	0
Cast-Iron Stanchions	7	10	0	,,	9	0	0
Rolled-Iron Fencing Wire	8	5	0	,,	8	10	0
Rolled-Steel Fencing Wire	7	5	0	,,	7	10	0
,, ,, ,, Galvanised	8	15	0	,,	9	5	0
Cast-Iron Sash Weights	5	0	0	,,	5	5	0
Cut Floor Brads	9	15	0	,,	—		
Corrugated Iron, 24 gauge	16	0	0	,,	—		
Galvanised Wire Strand, 7 ply, 14 B.W.G.	14	5	0	,,	—		

B.B. Drawn Telegraph Wire, Galvanised—

0 to 8	9	10	11	12	B.W.G.
£10 10s.	£10 15s.	£11 0s.	£11 5s.	£11 15s.	per ton.

Cast-Iron Socket Pipes—							
3in. diameter	£6	2	6	to	£6	7	0
4in. to 6in.	6	0	0	,,	6	5	0
7in. to 24in. (all sizes)	5	7	6	,,	6	0	0

[Coated with composition, 5s. 0d. per ton extra, turned and bored joints, 5s. 0d. per ton extra.]

Pig Iron—	Per ton.		
Cold Blast, Lilleshall	110s. 0d.	to	117s. 6d.
Hot Blast, ditto	70s. 0d.	,,	75s. 0d.

Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—	
Gas-Tubes	75 p.c.
Water-Tubes	72½ ,,
Steam-Tubes	67½ ,,
Galvanised Gas-Tubes	65 ,,
Galvanised Water-Tubes	62½ ,,
Galvanised Steam-Tubes	57½ ,,

OTHER METALS.

Spelter, Silesian	per ton	£20	7	6	to	£20	12 6
Lead Water Pipe, Town		24	2	6	,,	—	
,, ,, ,, Country		24	17	6	,,	—	
Lead Barrel Pipe, Town		25	2	6	,,	—	
,, ,, ,, Country		25	17	6	,,	—	
Lead Pipe, Tinned inside, Town		26	2	6	,,	—	
,, ,, ,, ,, Country		26	17	6	,,	—	
Lead Pipe, Tinned inside and outside ... Town		28	12	6	,,	—	
,, ,, ,, ,, Country		29	7	6	,,	—	
Composition Gas-Pipe, Town		27	2	6	,,	—	
,, ,, ,, Country		27	17	6	,,	—	
Lead Soil-pipe (up to 4½in.) Town		27	2	6	,,	—	
,, ,, ,, Country		27	17	6	,,	—	
[Over 4½in. £1 per ton extra.]							
Lead Shot, in 28lb. bags		24	15	0	,,	—	
Copper Sheets, sheathing & rods		80	0	0	,,	80	10 0
Copper, British Cake and Ingot		68	10	0	,,	69	0 0
Tin, English Ingots		184	10	0	,,	185	10 0
Do., Bars		185	10	0	,,	186	10 0
Pig Lead, in 1cwt. pigs (Town)		21	2	6	,,	—	
Sheet Lead, Town		23	12	6	,,	—	
,, ,, Country		24	7	6	,,	—	
Genuine White Lead		29	15	0	,,	—	
Refined Red Lead		24	10	0	,,	—	
Sheet Zinc		30	0	0	,,	—	
Old Lead, against account		18	12	6	,,	—	
Tin ...	per cwt.	11	0	0	,,	—	
Cut nails (per cwt. basis, ordinary brand		0	11	6	,,	—	

TIMBER.

CONSTRUCTIONAL.

Yellow Pine Deals, Quebec, per standard:— 1st quality		£38	0	0	to	£45	0 0
,, ,, ,, 2nd ,,		26	0	0	,,	32	0 0
,, ,, ,, 3rd ,,		16	0	0	,,	18	10 0
Spruce Deals: St. Johns		10	0	0	,,	11	10 0
,, ,, Miramichi		9	10	0	,,	10	10 0
,, Boards: Swag		11	0	0	,,	12	0 0
Red Deals: Archangel 1st quality		21	0	0	,,	24	0 0
,, ,, ,, 2nd ,,		16	0	0	,,	19	0 0
,, ,, ,, 3rd ,,		12	0	0	,,	14	0 0
,, ,, St. Petersburg—							
,, ,, ,, 1st quality		16	10	0	,,	18	0 0
,, ,, ,, 2nd ,,		14	10	0	,,	15	10 0
,, ,, Wyburg & Uleaborg		12	10	0	,,	15	0 0
,, Gefle, Gothenburg, and Stockholm		12	10	0	,,	17	0 0
White Deals: Crown		14	0	0	,,	15	10 0
,, ,, Seconds		11	10	0	,,	13	0 0
Flooring: White and Planed—							
1st and 2nd quality mixed		10	15	0	,,	11	15 0
1st, 2nd, & 3rd quality mixed		10	5	0	,,	11	0 0
Red Planed, 1st quality		14	10	0	,,	17	0 0
Pitch Pine: Prime Deals and Boards		18	0	0	,,	23	0 0
Lignum Vitæ	Per ton	7	0	0	,,	14	0 0

	Per cubic foot.						
Yellow Pine Logs (waney board)	0	5	0	,,	0	5	6
Pitch Pine Logs	0	2	0	,,	0	2	6
Birch: Quebec Logs	0	2	3	,,	0	2	9
Oak: Austrian Wainscot	0	7	0	,,	0	8	0
Mahogany: Gaboon	0	2	0	,,	0	2	3

FURNITURE AND HARDWOODS.

Teak: Burmese, per load, 50ft.	£20	0	0	to	£25	0	0
Teak: Java, per load, 50ft.	16	0	0	,,	21	0	0
	Per cubic foot.						
Oak Planks: U.S.A., imported	0	1	9	to	0	2	6
,, Boards ,, ,, Prm.	0	3	0	,,	0	3	6
,, ,, ,, Mdm.	0	2	6	,,	0	2	9
Sequoia (Californian Redwood)	0	2	4	,,	0	3	6
Birch: Quebec logs	0	2	3	,,	0	3	9
,, ,, sawn planks	0	1	3	,,	0	2	0
Oak: Austrian Wainscot	0	7	0	,,	0	8	0
Walnut: Prime boards and planks	0	6	0	,,	0	6	6
Walnut: Mdm. ,, ,,	0	3	6	,,	0	4	6
Greenheart: Hewn logs	0	3	3	,,	0	4	0
Cedar: Cigar box	0	4	9	,,	0	5	6
Satin Walnut: Imp. sawn boards, prime	0	2	4	,,	0	2	9
Orham: Imp. sawn boards, prime	0	2	0	,,	0	2	3
Mahogany: St. Domingo, Cuba, and Honduras	0	6	0	,,	0	9	0
,, African, Assinee, &c.	0	5	0	,,	0	6	6
,, Lagos and Benin	0	4	6	,,	0	6	0
,, Sekondi and Cape Lopez	0	3	0	,,	0	4	0
,, Gaboon	0	2	0	,,	0	2	3
Satinwood: West Indian	0	10	0	,,	0	14	0
Rosewood Per ton	8	0	0	,,	12	0	0
Lignum Vitæ ,,	7	0	0	,,	14	0	0

STONE.*

Red Mansfield, in blocks per foot cube	£0	2	4
Darley Dale, ditto ,,	0	2	3
Red Corsehill, ditto ,,	0	2	2
Closeburn Red Freestone, ditto ,,	0	2	0
Ancaster, ditto ,,	0	1	10
Greenshill, ditto ,,	0	1	10
Chilmark, ditto (in truck at Nine Elms) ,,	0	1	10½
Hard York, ditto ,,	0	2	10
Ditto ditto 6in. sawn both sides, landings, random sizes per foot sup.	0	2	8
Ditto ditto 3in. slab sawn two sides, random sizes ,,		1	3

* All F.O.R. London.

Bath Stone, delivered on road waggons, Paddington Depot per foot cube	0	1	7½
Ditto, ditto, Nine Elms Depot ,,	0	1	9½
Beer Stone, delivered on rail at Seaton Station ,,	0	1	0
Ditto, delivered at Nine Elms Station ,,	0	1	6

Portland Stone, in random blocks of 20ft. average:—

	Brown Whit Bed. Per foot cube.	White Base Bed
Delivered on road waggons at Paddington Depot, Nine Elms Depot, or Pimlico Wharf	... £0 2 3	... £0 2

SLATES.

	in.	in.	£	s.	d.	per 1,000 of 1,200 at r.stn
Blue Portmadoc ...	20 × 10	...	12	12	6	,, ,,
,, ,, ...	16 × 8	...	6	12	6	,, ,,
Blue Bangor	20 × 10	...	13	2	6	,, ,,
,, ,, ...	20 × 12	...	13	17	6	,, ,,
First quality	20 × 10	...	13	0	0	,, ,,
,, ,, ...	20 × 12	...	13	15	0	,, ,,
,, ,, ...	16 × 8	...	7	5	0	,, ,,
Eureka unfading green	20 × 10	...	15	17	6	,, ,,
,, ,, ...	20 × 12	...	18	7	6	,, ,,
,, ,, ...	18 × 10	...	13	5	0	,, ,,
,, ,, ...	16 × 8	...	10	5	0	,, ,,
Permanent green ...	20 × 10	...	11	12	6	,, ,,
,, ,, ...	18 × 10	...	9	12	6	,, ,,
,, ,, ...	16 × 8	...	6	12	6	,,

BRICKS.

(All prices net.)

First Hard Stocks ...	£1	15	0	per 1,000 alongside, in
Second Hard Stocks	1	11	0	,, ,, (river
Mild Stocks	1	9	0	,, ,, ,,
Picked Stocks for Facings	2	5	0	,, livered at rly. stn.
Flettons	1	6	0	,, ,, ,,
Pressed Wire Cuts...	1	18	0	,, ,, ,,
Red Wire Cuts.....	1	14	0	,, ,, ,,
Best Fareham Red	3	12	0	,, ,,
Best Red Pressed Ruabon Facing ...	5	0	0	,, ,, ,,
Best Blue Pressed Staffordshire	3	15	0	,, ,, ,,
Ditto Bullnose	4	0	0	,, ,, ,,
Best Stourbridge Firebricks.....	3	14	0	,, ,, ,,
2½in. Best Red Accrington Plastic Facing Bricks	4	10	6	,, Net, delivered in full truck loads in London.

" Accrington Best Red Plastic Facing per 1,000 Bricks	£2 10 0
3⅜" ditto Second Best Plastic ditto	2 2 6
Ditto Ordinary Second Bricks	1 11 3
Ditto Plastic Engineering Bricks	1 17 6
Sewer Arch Brick not more than 3⅜" in thickest part	2 0 0
3⅜" Chimney Bricks fit for outside work	2 6 0
3⅜" ditto ditto through and through	2 0 0
3⅜" Beaded, Ovolo and Bevel Jambs; Octagons; 2½" and ½" radius Bullnoses; Stock patterns	3 7 6
Accrington Air Bricks, 9" × 2 course deep, each	0 0 6
Ditto ditto 9" × 1 course ,,	0 0 3

Accrington Camber Arches:—

3 course deep, 4½" soffit, per foot opening ...	0	1	3
4 ditto 4½" ditto ditto ditto ...	0	1	8
5 ditto 4½" ditto ditto ditto ...	0	2	1
6 ditto 4½" ditto ditto ditto ...	0	2	6
3 ditto 9" ditto ditto ditto ...	0	2	1
4 ditto 9" ditto ditto ditto ...	0	2	11
5 ditto 9" ditto ditto ditto ...	0	3	9
6 ditto 9" ditto ditto ditto ...	0	4	6

Net free on rail or free on boat at works.

GLAZED BRICKS.

HARD GLAZES, (PER 1,000.)

White, Ivory, and Salt Glazed. Best.	Best. Seconds.	Buff, Cream, & Bronze.	Other Colours.	Second Colours.
Stretchers—				
£12 7 6	£10 17 6	£13 17 6	£17 17 6	£12 7 6
Headers—				
11 17 6	10 7 6	13 7 6	17 7 6	11 17 6
Quoins, Bullnose, and 4½in. Flats—				
15 17 6	14 17 6	17 17 6	21 7 6	15 17 6
Double Stretchers—				
17 17 6	16 7 6	20 17 6	24 7 6	17 17 6
Double Headers—				
14 17 6	13 7 6	17 17 6	21 7 6	14 17 6
One side and two ends, square—				
18 17 6	17 7 6	21 17 6	26 7 6	18 17 6
Two sides and one end, square—				
19 17 6	18 7 6	22 17 6	26 17 6	19 17 6
Splays and Squints—				
17 7 6	15 17 6	21 17 6	24 17 6	17 7

Plinth and Hollow Bricks. Stretchers and Headers—
5d. each 4d. each 6d. each 6d. each 5d. each

Double Bullnose, Round Ends, Bullnose Stops—
5d. each 4d. each 6d. each 6d. each 5d. each

Rounded Internal Angles—
4d. each 3d. each 5d. each 5d. each 4d. each

MOULDED BRICKS.

Stretchers and Headers—
8d. each 8d. each 8d. each 8d. each 8d. each

Internal and External Angles—
1/2 each 1/2 each 1/2 each 1/2 each 1/2 each

Cill Bullnose, Stretchers and Headers—
5d. each 4d. each 6d. each 6d. each 5d. each

Majolica or Soft Glazed Stretchers and Headers ,, Quoins and Bullnose...	Per 1,000 £22 17 6 27 17 6
Compass bricks, circular and arch bricks of single radius £6 per 1,000 over above list for their respective kinds and colours	Not exceeding 9in.
Camber arch bricks, any kind or colour, 1s. 2d. each	by 1½in. by 2¾in.

Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.

* These prices are carriage paid in full truck loads to London Stations.

	s.	d.	
Thames Sand	7	6	per yard, delivered
Pit Sand	7	0	,, ,,
Thames Ballast	6	0	,, ,,

	s.	d.		Per ton,
Best Portland Cement	36	0	to 41	0 delivered
Ground Blue Lias Lime	21	0	per ton delivered.	

Exclusive of charge for sacks.

	s.	d.		s.	d.	Per yard,
Grey Stone Lime	13	6	to	14	0	delivered

Stourbridge Fireclay in sacks 27s. 0d. per ton at railway station.

TILES.

	s.	d.	Dlvrd. at
Plain red roofing tiles	42	0	per 1000 ry. stn.
Hip and Valley tiles	3	7	per doz. ,, ,,
Broseley tiles	50	0	per 1000 ,, ,,
Ornamental tiles	52	6	,, ,, ,,
Hip and Valley tiles	4	0	per doz. ,, ,,
Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000 ,, ,,
Ornamental do.	60	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	0	,, ,, ,,
Selected "Perfecta" roofing tiles:—Plain tiles (Peake's)	46	0	per 1000 ,, ,,
Ornamental do.	48	6	,, ,, ,,
Hip tiles	3	10½	per doz. ,, ,,
Valley tiles	3	4½	,, ,, ,,
"Rosemary" brand plain tiles	48	0	per 1000 ,, ,,
Ornamental tiles	50	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	8	,, ,, ,,
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 ,, ,,
Hand-made sand-faced	45	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	6	,, ,, ,,
Hartshill" brand plain tiles, sand-faced	50	0	per 1000 ,, ,,
Pressed	47	6	,, ,, ,,
Ornamental do.	50	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
alley tiles	3	6	,, ,,

OILS.

Rapeseed, English pale, per tun	£28	15	0	to £29	5	0
Do., brown ,, ...	26	15	0	,, 27	5	0
Cottonseed, refined ,, ...	29	0	0	,, 30	0	0
Olive, Spanish ,, ...	39	10	0	,, 40	0	0
Seal, pale ,, ...	21	0	0	,, 21	10	0
Cocoanut, Cochin ,, ...	46	0	0	,, 46	10	0
Do., Ceylon ,, ...	42	10	0	,, 43	0	0
Do., Mauritius ,, ...	42	10	0	,, 43	0	0
Palm, Lagos ,, ...	32	5	0	,, 33	5	0
Do. Nut Kernel ,, ...	35	0	0	,, 35	10	0
Oleine ,, ...	17	5	0	,, 19	5	0
Sperm ,, ...	30	0	0	,, 31	0	0
Lubricating U.S. per gal	0	7	0	,, 0	8	0
Petroleum refined ,, ...	0	0	6½	,, 0	0	6½
Tar, Stockholm per barrel	1	6	0	,, 1	10	0
Do., Archangel ,, ...	0	19	6	,, 1	0	0
Linseed Oil per gal.	0	2	5	,,	—	
Baltic Oil ,, ...	0	2	8	,,	—	
Turpentine ,, ...	0	2	5½	,,	—	
Putty (Genuine Linseed Oil) per cwt.	0	9	0	,,	—	
Pure Linseed Oil "Stority" Brand ,,	0	10	0	,,	—	

GLASS (IN CRATES).

English Sheet Glass:	15oz.	21oz.	26oz.	32oz.
Fourths	2d. ...	3d. ...	3½d. ...	4½d.
Thirds	2½d. ...	3½d. ...	4½d. ...	5½d.
Fluted Sheet	2½d. ...	3½d. ...	6½d. ...	7d.
Hartley's English Rolled Plate:	⅛in.	3/16in.	¼in.	
	2½d. ...	2½d. ...	3d.	
Figured Rolled and Repoussine	White.	Tinted		
	3½d. ...	5d.		

TRADE NOTES.

Under the direction of Mr. John S. D. Hicks, architect, St. Leonards-on-Sea, Beckett's patent air pump ventilator have been replaced at the New Convent, Buckhurst-road, Bexhill-on-Sea.

The partnership between Mr. F. E. Shoard and Mr. S. S. Reay, F.R.I.B.A., architects and surveyors, conducted under the style of Shoard and Reay, has now terminated, and for the future Mr. Reay will practise independently at 40, Monmouth-street, Bath, and 10, Orchard-street, Bristol.

Messrs. George M. Callender and Co., Ltd., of 25, Victoria-street, London, S.W., have just secured an interesting contract. The bituminous sheeting which has gained for them a world-wide reputation, has been chosen as the waterproofing medium in lining the new canal and locks at Messrs. Otto Monsted, Ltd., at their extensive works, Southall, Middlesex. Messrs. Callender's experience in the class of work will be seen as a previous application of the material in the Tring Canal stands them in good stead and the ten years which have passed since this encountered this form of waterproofing have witnessed many adaptations of their bitumen sheeting to all kinds of engineering work.

HOW YOU MAY - - - INCREASE YOUR INCOME

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POLONCEAU ASPHALTE

Patent Asphalte and Felt Roofing

ACID-RESISTING ASPHALTE.

WHITE SILICA PAVING.

Seyssel Asphalte direct from the Mines.

TELEPHONE NOS.: NEW CROSS 1102 (2 Lines).

FOR

Olivers' Seasoned Hardwoods,

APPLY TO:

WM. OLIVER & SONS, Ltd.,

120, Bunhill Row, London, E.C.

TENDERS.

*** Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

AINWICKHILL, N.B.—For the supply of 2,000 tons of sands for the new filters at Ainwickhill, for the Edinburgh and district water trust:—
Hart, M. M., Glasgow (accepted) 12s. per ton.

BATH.—For executing extensions to the Pulteney Hotel, for the directors:—

Hayward and Wooster	...	£5,913	0 0
Wills, A., and Son	...	5,823	0 0
Erwood and Morris	...	5,549	0 0
Long, Jacob, and Sons (accepted)		4,990	0 0

All of Bath.

Barking.—For providing new valve-seats and valves to the sludge-loading engines at the northern outfall, for the London County Council —

Lilleshall Co., Ltd., Oakengates	£275 0 0
Clayton, Goodfellow, & Co., Ltd., Blackburn	200 0 0
Cochrane, J., Barrhead	175 0 0
Seagers, Ltd., Dartford*	168 0 0

* Recommended for acceptance.

Bedford.—For renovations and minor works at the following council schools, for the Bedfordshire County Council. Mr. R. Kitching Ellison, Shire Hall, Bedford, surveyor of school buildings :—

Biggleswade —	
Redhouse, S., and Son, Stotfold	£87 0 0
Bartle, G., and Son, Potton	76 10 0
Fennemore, F., Sandy*	70 11 6
Cardington —	
Corby, J., and Son, Bedford	66 0 0
Finch, E. L., Bedford	61 16 0
Mead and Son, Bedford	61 15 0
Gale, F., Bedford	43 16 0
Keech, J., Cardington*	41 12 6
Dean :—	
Pacey, T. H., Sharnbrook*	25 11 6
Dunstable (Burr-street) :—	
Heath, W., Leagrave	97 2 6
Wood, T., and Sons, Luton	96 0 0
Nash, A. W., Dunstable*	68 15 0
Eaton Bray :—	
Purser and Furlong, Leighton Buzzard	119 7 3
Sharrett, J., & Sons, Eaton Bray*	80 0 0
Langford :—	
Redhouse, S., and Son, Stotfold	110 12 9
Wright, C., Langford*	105 12 6
Leighton Buzzard (Bassett-road) :—	
Cooke, D., and Sons, Leighton Buzzard	70 10 0
Dawson, A. E., Leighton Buzzard	68 13 6
Purser and Furlong, Leighton Buzzard*	65 13 0
Limbury :—	
Fensome, A. and E., Leagrave	49 7 0
Wood, T., and Sons, Luton*	42 10 6
Shefford :—	
Kilpin and Billson, Bedford	90 0 0
Bacchus, H., Bedford*	85 10 0

* Accepted.

Benington, Lincolnshire. — For erection of two pairs of cottages at Benington, for the Boston Rural District Council —

Bradley, S. P., Gipsy Bridge (accepted).

Bristol.—For painting the exterior woodwork and ironwork of the University Buildings and of 13, Elmdale-road, for the council :—

Thomas, L., and Son, Ltd., Bristol (accepted).

Camborne. — For carrying out the Camborne sewage-disposal scheme, for the urban district council :—

	Sewerage.	Tunnelling.
Relf, R. T., Plymouth	£31,238 7 10	£19,264 7 10
Shaddock, T., Plymouth	17,714 0 0	—
Blake, W. E., Plymouth	17,657 0 0	—
Monro and Co., London	17,591 15 8	15,178 9 6
Shaddock, W., Plymouth	17,232 6 2	18,315 8 0
Pethick Bros., Plymouth	14,864 0 0	11,994 0 0
Mitchell and Bond, Camborne	14,357 15 0	—
Duke, C. C., Plymouth	14,315 14 3	8,922 3 5
Stowe and Co., Aberdare	14,304 17 3	10,240 18 2
Bredner and Co., Edinburgh	14,093 15 0	13,304 0 0
Coles, A. N., Plymouth	14,042 6 6	9,819 5 6
Riley, Cheltenham	13,720 13 6	15,248 4 3
Carkeek, A., Redruth	12,622 14 0	10,867 0 0
Nannacott, Torquay*	11,700 0 0	8,730 0 0

* Accepted for both contracts.

Crossness, S.E. — For the supply of twenty-four galvanised iron floats in the precipitation channels at the southern outfall, for the London County Council :—

	Each net.
Ash, Jos., and Son, Birmingham†	£2 18 0
Braby, F., & Co., Ltd., Deptford*†	2 11 6
Burney & Co., Ltd., Millwall, E.	2 8 9

* Recommended for acceptance. † Less 2½ per cent.

Denmark-hill, S.E.—For the erection at Denmark-hill of the Maudsley Hospital, for the London County Council —

King, W., and Son, Westminster	£50,732 0 0
Appleby, J., and Sons, Southwark	48,723 0 0
Bowyer, J. and C., Upper Norwood	48,481 0 0
Higgs, F. and H. F., Ltd., Loughborough-junction	47,800 0 0
Holloway Bros. (London), Ltd., Lambeth	47,366 0 0
Parker, G., and Sons, Peckham	47,272 0 0
Carmichael, J., Wandsworth	47,190 0 0
Roberts, L. H. and R., Islington	46,922 0 0
Foster and Dicksee, Ltd., Rugby	46,762 0 0
Wall, C., Ltd., Lloyd's-avenue	46,370 0 0
Lawrance, E., and Sons, Ltd., Wharf-road, E.C.	46,118 0 0
Godson and Sons, Kilburn	45,957 0 0
Johnson, W., & Co., Ltd., Wandsworth	45,731 0 0
Perry and Co., Ltd., Bow	45,424 0 0
Lorden, W. H., and Son, Ltd., Tooting	44,889 0 0
Greenwood, J., Ltd., London Bridge	44,527 0 0
Holliday and Greenwood, Ltd., Loughborough Park	43,295 0 0

Dursley.—For erecting 38 workmen's dwellings at Dursley, under the Housing of the Working Classes Acts :—

Allen, F. J., Gloucester	£10,994 0 0
Jones, W., Gloucester	10,880 0 0
Simmonds, J., Gloucester	10,695 0 0
Drew, W., Cheltenham	10,065 0 0
Bloodworth, W., Dursley	9,500 0 0
Drew, W., Chalford, Stroud*	9,880 0 0
Williams, T. J., Gloucester	8,962 0 0
Heard, A. G., Bristol	8,837 14 8

[The architect's estimate being £8,830, the scheme was referred back to the committee for reconsideration.]

* Exclusive of the cost of roads and drains.

East Marylebone.—For the erection in Upper Marylebone-street of a new elementary school and handicraft centre, for the London Education Committee :—

	A.	A. (alternative).	B.	C.
Somerville, D. G., and Co., Ltd., New Cross—	—	—	—	£18,547
Cubitt Concrete Construction Co., Gray's Inn-road—	—	—	—	15,853
Higgs, F. and H. F., Herne Hill—	15,481 0 0	+550	15,920 0 0	—
Wall, C., Ltd., Lloyd's-avenue, Fenchurch-street—	15,447 0 0	+575	15,921 0 0	—
Bowyer, J. and C., Ltd., Upper Norwood—	15,179 0 0	+540	15,596 0 0	—
Lovatt, H., Ltd. 66, Victoria-street, Westminster—	15,177 11 5	−296	*14,646 2 10	—
Wallis, G. E., and Son, Ltd., Haymarket—	15,078 0 0	+ —	14,861 0 0	—
Lawrence, W., and Son, Finsbury-circus—	14,958 0 0	+126	14,722 0 0	—

* Accepted. + No difference in cost.

A.—Usual construction. A. (alternative).—Greater or less cost of reinforced concrete floors. B.—Hollow wall construction with reinforced concrete floors. C.—Complete reinforced concrete construction (school buildings only), schoolkeeper's house, manual training centre, &c., usual construction.

Fishguard, Pembrokeshire.—For the completion of the harbour works and extensions, for the Fishguard and Rosslare Railway and Harbour Co. :—

Topham, Jones, and Railton, Ltd. (accepted), about £400,000

London.—For the cleaning and painting, &c., of L.C.C. schools. Accepted tenders :—

Bermondsey—The "Chaucer" —	
Sims, J. R.	£441 0 0
Bethnal Green, N.E.—Chisenhale-road :—	
Butters, G.	343 10 0
Columbia-road —	
Silk, W., and Son	467 0 0
Cranbrook-road :—	
Press, Robinson, and Co.	482 0
Bethnal Green, S.W.—Wood-close :—	
Fenn, J. Scott	231 10 0
Bow and Bromley—Devon's-road :—	
Woollaston, R., and Co.	205 0 0
Malmesbury-road —	
Vigor and Co.	369 0 0
Smeed-road :—	
Symes, A. E.	457 0 0
City of London—Swan-street :—	
Iuns, A. H.	244 10 0
Clapham—Sleaford-street —	
Rice and Son	390 0 0
Telferscot-road :—	
Read, W.	315 0 0
Deptford—Kender-street :—	
Loasby, F. W.	440 0 0
Fulham—Fulham Training College and Finlay-street elementary school :—	
Strong, J., and Co.	223 11 0
Hackney, N.—High-street, Stoke Newington :—	
McCormick and Sons, Ltd.	279 0 0
Hackney, S.—Lauriston-road :—	
Haydon, J., and Sons	348 0 0
Rushmore-road :—	
Butters, G.	399 0 0
Haggerston—Haggerston-road :—	
Press, Robinson, and Co.	250 0 0
Hammersmith—Flora-gardens :—	
Polden, A. F.	359 0 0
Kenmont-gardens :—	
Chappell, W.	335 0 0
Islington, E.—Blackstock-road :—	
Waddington, J., and Sons, Ltd.	231 8 3
Canonbury-road :—	
McCormick and Sons, Ltd	459 0 0
Islington, N.—Duncombe-road :—	
Mather, J. C.	232 0 0
Islington, S.—Islington Training College —	
Stevens and Sons	348 11 0
Kennington—Priory-grove :—	
Triggs and Co.	355 0 0
Lambeth, N.—Johanna-street :—	
Lapthorne and Co., Ltd.	321 0 0
Lollard-street :—	
King, W., and Son	272 0 0
Lewisham—Rathfern-road :—	
Peyton, A. T.	368 0 0
Mile End—Single-street :—	
Woollaston, R., and Co.	327 12 0
Newington, W.—The "John Ruskin" :—	
Goad, W. V.	269 0 0
Paddington, S.—The "Moberly" :—	
Crook, H. W., and Son, Ltd.	335 13 6
Southwark, W.—Orange-street :—	
Warburton and Son	371 0 0
Stepney—Trafalgar-square :—	
Munday, G., and Sons	444 0 0
Walworth—Flint-street :—	
Wallis, G. E., and Sons, Ltd.	424 0 0
King and Queen-street :—	
Lapthorne and Co., Ltd.	271 0 0
Sayer-street :—	
King, W., and Son	376 0 0
Wandsworth—Hearnville-road :—	
Triggs and Co.	231 0 0
Hotham-road —	
McArthur, G., and Co.	443 2 10
Swaffield-road :—	
Ronald, R. S.	279 0 0
Whitechapel—Commercial-street :—	
Inns, A. H.	374 5 8
Woolwich—Ancona-road :—	
Chandler, H. E.	281 0 0
Burrage-grove :—	
Chandler, H. E.	220 0 0
Purrett-road :—	
Mills, E.	303 0 0
Outside area of London—Anerley Residence school :—	
Young, W.	295 0 0
Gordon House Girls' Home, Isleworth :—	
Triggs and Co.	335 0 0

London.—For the supply of drawing desks under schedule No. 866 for one year, for the London County Council —

Foster, Cooper, and Foster, Nottingham (accepted).
(Estimated amount of contract £270.)

Garston, Liverpool.—For constructing foundations for steel tank, Stalbridge Dock. Mr. Harold C. Davies, F.S.I., 3, Chapel-street, Liverpool, architect :—

Jones and Sons	£797 10 0
Henshaw and Sons	750 0 0
Kelly, Horace, and Bro.	609 0 0
Jones, W. and D.	580 0 0
Amended tenders :—	
Kelly, Horace, and Bro. (accepted)	461 0 0
Jones, W. and D.	450 0 0

(All of Liverpool.)

Hampstead, N.W.—For drainage works at Fleet-road school, Hampstead, for the London Education Committee :—

Beattie, W., (accepted) £421 10 0
(Lowest tender received.)

Henley. — For works of painting at the North Staffordshire Blind and Deaf School :—

Peake, S., and Son (accepted) £150 19 0

Lewes.—For erecting new municipal offices, Fisher-street, for the town council. Mr. R. H. Halls, Seveing Chambers, Lewes, architect :—

Chilton, A., Uckfield	£3,100 0 0
Harding, F. W., Seaford	2,925 0 0
Martin, M., & Son, Eastbourne	2,893 0 0
Wells, W., Plumpton	2,843 0 0
Bainbridge, G., & Son, Eastbourne	2,708 0 0
Cook, R., and Sons, Crawley	2,700 0 0
Rowland Bros., Horsham	2,699 0 0
Godfrey Bros., Seaford (accepted)	2,696 0 0

Lewisham, S.E.—For forming a new boiler room and re-dividing certain classrooms at the Lewisham Bridge boys' school, Lewisham, for the London Education Committee :—

Mills, W., and Sons, Ltd., Blackheath	£1,998 0 0
Garrett, J., and Son, Balham Hill	1,934 0 0
Roberts, A., and Co., Ltd., Kensington	1,933 0 0
Groves, H., Greenwich	1,929 0 0
Thomas and Edge, Woolwich	1,891 0 0
Leng, T. D., Deptford	1,891 0 0
Holliday and Greenwood, Ltd., Battersea	1,873 0 0
Bowyer, J. and C., Ltd., Upper Norwood	1,872 0 0
Holloway, H. L., Deptford	1,854 0 0
Parker, G., and Sons, Peckham	1,829 0 0
Appleby, J., and Sons, Southwark Park	1,764 0 0
Wallis, G. E., and Sons, Ltd., Panton-street*	1,674 0 0

* Recommended for acceptance.

North Kensington.—For installing heating apparatus in connection with the rebuilding of the Middle-row school, North Kensington, for the London Education Committee :—

Palowkar and Sons, Queen-street	£1,450 0 0
Davis, G., Kensington	980 0 0
Strode & Co., Ltd., Regent's-park	892 0 0
Burroughes, W. J., and Sons, Holborn	885 0 0
Cash, H. J., and Co., Ltd., Westminster	858 0 0
Korting Bros., Ltd., Westminster	831 0 0
Pearson, R. H. and J., Ltd., Notting Hill-gate	829 0 0
Brightside Foundry and Engineering Co., Ltd., Victoria-street	807 0 0
Deane, E., and Beal, Ltd., Monument-street	805 0 0
May, J. & F., Lincoln's Inn-fields	779 0 0
Cormack, J., and Sons, Ltd., Eaton-square*	717 0 0

Architect's estimate, £865.

* Recommended for acceptance.

Shooter's Hill.—For the construction of a new police-station at Shooter's Hill. Mr. J. Dixon Butler, F.R.I.B.A., surveyor to the Metropolitan Police District, New Scotland Yard, S.W., architect. Quantities by Messrs. Thurgood, Son, and Chidgey, 8, Adelphi-terrace, Strand, W.C. :—

Graham and Co.	£12,340 0 0
Blay, W.	12,000 0 0
Perry and Co.	11,689 0 0
Parker and Sons	11,397 0 0
Minter, F. G.	11,380 0 0
Jarvis and Sons	11,300 0 0
Sabey and Sons	10,941 0 0
Holloway Bros.	10,837 0 0
Kent, H.	10,815 0 0
Thomas and Edge	10,746 0 0
Grover and Sons	10,633 0 0
Dickens, J. W.	10,570 0 0
Smith and Sons	10,530 0 0
Prestige and Co.	10,405 0 0

Shrewsbury.—For alterations and additions to the Comet Inn, Ditherington, for Mr. G. Selwood. Mr. A. E. Williams, County Chambers, 12, High-street, Shrewsbury, architect :—

Pritchard, J. (accepted) £538 8 8

Tiverton.—For the erection of eighteen houses, as the first section of the municipal housing scheme, for the town council :—

Grater, J., and Sons, Tiverton (accepted), £2,805.
Lowest of six tenders received.

Tooting, S.W.—For altering and enlarging the administrative buildings at the Totterdown Fields estate, for the London County Council :—

Fletcher, F. W., Tooting	£268 0 0
Bowyer, J. & C., Upper Norwood	230 0 0
Garratt, J., and Son, Balham Hill	213 0 0
Marsland, J., and Sons, Walworth	193 0 0
Triggs and Co., Clapham	189 0 0
Roberts, A., and Co., Ltd., Kensington*	170 0 0

Architect's estimate, £168.

* Recommended for acceptance.

(*Continued on page XV.*)

LIST OF COMPETITIONS OPEN.

July 24	Sanatorium (250 beds), Fazakerley	150gs, 100gs, and 50gs	E. R. Beckmere, Town Clerk, Municipal Office, Liverpool.
Aug. 25	Cottage Homes, Tendring		A. J. H. Ward, Clerk, Harwich
Sept. 1	Town Planning the Borough, High Wycombe (Assessors)	£25, £10, £5	T. J. Rushbrooke, Boro' Sur., High Wycombe
Oct. 31	Houses and Planning, York	£100, £50, £25	F. W. Sperr, City Engineer, Guildhall, York.
Nov. 1	Royal Palace, Sofia		Section d'Architecture au Ministere des Travaux Publics, Sofia, Bulgaria.
,, 1	Law Courts, Sofia		Section d'Architecture au Ministere des Travaux Publics, Sofia, Bulgaria.
No date	Laying Out Estate (50 acres) and Erecting Workmen's Dwellings, Bradford (H. T. Hare, F.R.I.B.A., Assessor)		F. Stevens, Town Clerk, Town Hall, Bradford.

LIST OF TENDERS OPEN.

BUILDINGS.

July 18	Cemetery, Greenhouse at, East Finchley, N.	Islington Borough Council	J. Patten Barber, Boro' Engr., Town Hall, Upper-street, N.
,, 18	Methodist Chapel, Additions, &c., to, Redruth		Rev. J. Sadler, 11 Claremont-road, Redruth.
,, 18	Town Hall, Restoration, Barrow-in-Furness	Corporation	The Borough Engineer, Town Hall, Barrow-in-Furness.
,, 18	County School for Girls, Repairs at, Folkestone	Kent Education Committee	The Director, Technical Institute, Folkestone.
,, 18	Pair of Cottages, Velindre		C. Butcher, Pen-y-lan.
,, 18	School, Alterations to, Balby-with-Hexthorpe	West Riding Education Committee	The Education Architect, County Hall, Wakefield.
,, 19	Working-Class Dwellings (60), Stafford	Corporation	W. Plant, A.M.I.C.E., Boro' Eng., Borough Hall, Stafford.
,, 19	Council School (120 places), Biggin Hill, Cudham, Kent	Kent Education Committee	W. H. Robinson, M.S.A., Caxton House, Westminster, S.W.
,, 19	Five Houses, Church Village	Robert Evans	E. I. Evans, Archt., 36, Dunraven-street, Tonypandy.
,, 19	Council School, Hirnant, Mon.	Montgomery Education Authority	L. Phillips, Clerk, Education Offices, Newtown.
,, 19	Public Wash-houses, Extension of, Edinburgh	Corporation	J. A. Williamson, A.R.I.B.A., Public Works Office, Edinburgh.
,, 19	Reroofing No. 78, High-street, Winchester	Hants County Council	W. J. Taylor, County Sur., The Castle, Winchester.
,, 19	Cinema and Billiard Hall, Beaufort, Mon.		G. L. Watkins, Archt., Caerphilly.
,, 21	School, Alterations to, Whittington Moor	Derbyshire Education Committee	G. Widdows, F.R.I.B.A., County Offices, St. Mary's Gate, Derby.
,, 21	Council School, Enlarging, Aveley	Essex Education Committee	F. Whitmore, County Archt., Chelmsford.
,, 21	New Council School, Blackwell	Derbyshire Education Committee	G. Widdows, F.R.I.B.A., County Offices, St. Mary's Gate, Derby.
,, 21	School, Repairs to, Smarden	Kent Education Committee	W. H. Robinson, F.R.I.B.A., Caxton House, Westminster, S.W.
,, 21	Church Schools, Works at, Dorchester		H. O. Lock, Sec., 24, High West-street, Dorchester.
,, 21	Enlarging Council School, Aveley	Essex Education Committee	F. Whitmore, County Archt., Chelmsford.
,, 21	Council School, Repairs at, Willesborough	Kent Education Committee	W. H. Robinson, Caxton House, Westminster.
,, 21	Bigrigg Council School, Additions to, Egremont	Education Committee	J. Forster, Archt., 13, Earl-street, Carlisle.
,, 21	Wash-House and Laundry, Additions to, Evesham	Guardians	E. H. Williams, Clerk, Union Offices, Evesham.
,, 21	School of Art, Additions to, Bradford	Education Committee	The City Architect, Town Hall, Bradford
,, 21	Mortuary, Mill Field, Pontypridd	Urban District Council	W. E. Lowe, Sur., Municipal Buildings, Pontypridd.
,, 21	Six Houses, Purlwell, Batley		S. Watson, Archt., Upper Taylor-street, Batley.
,, 21	Cawthorne Endowed School, Additions to, Abbeystead		R. E. Jackson, Archt., Arcade, Lancaster.
,, 21	Vestry, Parkllyn, Aberporth	Calvinistic Methodist Trustees	G. Lewis, L.R.I.B.A., Market-square, Cardigan.
,, 21	New Council School, North Wingfield	Derbyshire Education Committee	G. Widdows, F.R.I.B.A., County Offices, St. Mary's Gate, Derby.
,, 21	Schools, Repairs to, Haverfordwest	Pembrokeshire Education Authority	Owain T. Thomas, Archt., Education Offices, Haverfordwest.
,, 21	Workhouse, Additions to New Infirmary at, Ottershaw	Chertsey Guardians	H. E. Paine, Clerk, 80, Guildford-street, Chertsey.
,, 21	Houses (20), Britannia, Pengam	Powell Duffryn Steam Coal Co., Ltd.	G. Kenshole, M.S.A., Station-road, Bargoed.
,, 22	House, Abertan	Victoria Building Club	O. P. Bevan, Archt., Express Chambers, Merthyr Tydfil.
,, 22	Electricity Supply Works, Extension of, Long Eaton	Urban District Council	F. Warrall, A.M.I.C.E., Eng. and Man., Long Eaton.
,, 22	Farm Buildings, Additions to, Trevease Farm, Constantine	Cornwall Small Holdings Com.	J. Davis, County Land Agent, County Hall, Truro
,, 22	Town Hall, Extension of, Ealing	Corporation	C. Jones, M.I.C.E., Boro' Eng., Town Hall, Ealing, W.
,, 22	Reflooring Wards at Infirmary, Brook-street, S.E.	Lambeth Guardians	J. L. Goldspink, Clerk, Brook-street, Kennington-road, S.E.
,, 22	Besore Farm, Additions to, Kenwyn, Truro	Cornwall Small Holdings Com.	J. Davis, County Land Agent, County Hall, Truro.
,, 22	United Methodist Church, Glyncorrwg, R.S.O., Port Talbot	Trustees	T. Gibbs, M.S.A., Post Office Chambers, Port Talbot.
,, 22	Herland Farm, Stable and Cattle House at, Gwinear	Cornwall Small Holdings Com.	J. Davis, County Land Agent, County Hall, Truro.
,, 22	Electricity Works, Lavatory at, Halifax	Electricity Committee	J. Lord, M.I.C.E., Boro' Eng., Town Hall, Halifax.
,, 22	Power Station, Extension of, Newport, Mon.	Corporation	C. F. Ward, F.R.I.B.A., Town Hall, Newport, Mon.
,, 23	Repairing Two Houses, Newton Abbot, Devon	Webster and Watson	J. C. Beare, Archt., 42, Devon-square, Newton Abbot.
,, 23	Schools, Addition to, East Heckington		J. Anson, School House, East Heckington
,, 23	Technical Institute, Cathays Park, Cardiff	Education Committee	I. Jones and P. Thomas, Archts., 18, St. Mary-street, Cardiff.
,, 23	Police Station, Chyandour	Cornwall Standing Joint Com.	A. E. Brookes, County Sur., County Hall, Truro.
,, 23	Workhouse, Wood Block Floors at, Crumpsall, Manchester	Guardians	A. J. Murgatroyd, Archt., 23, Strutt-street, Manchester.
,, 23	Shops, George-street, Redditch	Alcester Co-op. Industrial Soc., Ltd.	J. Johnson, Archt., Redditch.
,, 23	Public Baths, Removable Floor at, High-st., Plumstead	Woolwich Borough Council	J. R. Dixon, M.I.C.E., Boro' Eng., Town Hall, Woolwich.
,, 24	Infirmary, Nurses' Home, & Workhouse, Repairs, Fulham	Guardians	A. Saxon-Snell, F.R.I.B.A., 9, Bentinck-st., Manchester-sq., W.
,, 24	New Depot Premises, Rommany-rd., West Norwood	Lambeth Borough Council	The Borough Engineer, Lambeth Town Hall, Brixton-hill, S.W.
,, 24	Observation Block (12 beds), Park School, Hanwell, W.	Managers	H. Cresswell, F.R.I.B.A., 17, Buckingham-street, Adelphi, W.C.
,, 24	School, Additions to, Litton	West Riding Education Committee	B. Thornton, Education Offices, Skipton.
,, 25	Cloak-rooms, &c., Hollingbourne Council Schools	Kent Education Committee	W. H. Robinson, Archt., Caxton House, Westminster, S.W.
,, 25	Masonic Hall, Ballymena		Patterson and Grahame, Archts., Scottish Prov. Bldgs., Belfast.
,, 25	Houses (28), Repairs to, Penygraig, Glam.	Tynycae Building Club Trustees	W. D. Thomas, Archt., Porth.
,, 25	Sunday School, Holy Trinity Church, Cowes, I.W.	Building Committee	J. W. Bessant, Archt., 95, Pelham-road, Cowes.
,, 26	Workmen's Tenement Dwellings (22), Moldgreen	Corporation	K. F. Campbell, M.I.C.E., Boro' Eng., 1, Peel-st., Huddersfield.
,, 26	Gnoll School, Additions to, Neath	Education Committee	D. M. Jenkins, A.M.I.C.E., Boro' Eng., Gwyn Hall, Neath.
,, 26	Single Constable's Quarters, Additions to, Swindon	Wilts County Council	J. G. Powell, County Sur., Trowbridge.
,, 26	Chapel House, Boncath, Pembroke		S. Griffiths, Sec., Cilrhue-Fach, Boncath, Pembroke.
,, 26	Isolation Hospital, Additions to, Shirley	Southampton Town Council	The Borough Engineer's Office, Southampton.
,, 26	Six Scullery Houses, Wakefield-road, Moldgreen	Corporation	K. F. Campbell, M.I.C.E., Boro' Eng., 1, Peel-st., Huddersfield.
,, 28	Miners' Hall, Dawdon, Seaham Harbour		R. Lawson, Miners' Houses, Dawdon, Seaham Harbour.
,, 28	School, Additions to, Rudgwick	West Sussex Education Committee	H. P. Roberts, F.R.I.B.A., Thurloe House, High-st., Worthing
,, 28	Market Hall, Crymmych		L. Lewis, L.R.I.B.A., Market-square, Cardigan.
,, 28	Hospital, Scarlet Fever Pavilion, &c., at, Barnet	Isolation Hospital Committee	White, Son, and Pill, Arcbts., 15, High-street, Barnet.
,, 28	Houses (26), Llanelly	Urban District Council	The Surveyor's Office, Town Hall, Llanelly.
,, 28	Police Station, Additions to, East Stonehouse	Devon Standing Joint Committee	E. H. Harbottle, County Archt., County Chambers, Exeter.
,, 28	Infirmary, Additional Room at, Rackham-st., Notting Hill	St. Marylebone Guardians	H. T. Dudman, Clerk, Northumberland-st., Marylebone-rd., W.
,, 28	New Offices at No. 14, High-street, Watford	Urban District Council	D. Waterhouse, Eng., Council Offices, Watford.
,, 29	Office, Weston-super-Mare	Great Western Railway Co.	A. E. Bolter, Sec., Paddington Station, W.
,, 29	Station, Additions to, Stroud, Glos.	Great Western Railway Co.	A. E. Bolter, Sec., Paddington Station, W.
,, 29	Station Buildings, Additions to, Llanelly	Great Western Railway Co.	A. E. Bolter, Sec., Paddington Station, W.
,, 29	Goods Shed Extension of, Coton Hill Depot, Shrewsbury	Great Western Railway Co.	A. E. Bolter, Sec., Paddington Station, W.
,, 30	Self-Contained Cottages (37), Chickerell-rd., Weymouth	Corporation	K. J. S. Harris, Boro' Sur., Mun. Bldgs., Weymouth.
,, 30	Laundry at Hospital, Weyhill	Andover Rural District Council	Wm. R. Graham, 31, High-street, Andover.
,, 30	Model Dwellings (35), Murton	Easington Rural District Council	J. J. Dobson, Archt., Moor House, Station-road, Wingate.
,, 30	Pair of Cottages, Nazeing	Essex Small Holdings Committee	F. Whitmore, County Archt., Duke-street, Chelmsford.
,, 30	No. 148, King-street, Rebuilding, Hammersmith, W.	Borough Council	H. Mair, Boro' Sur., Town Hall, Hammersmith, W.
,, 30	Superstructure, &c., Men's Barrack Block, Redford	Secretary of State for War	The Director of Barrack Construction, 80, Pall Mall, S.W.
,, 31	Village Hall, Ballasalla		J. E. Douglas, 21, Berkeley-street, Douglas.
,, 31	Elementary School, Lescudjack, Penzance	Local Education Authority	Cowell and Drewitt, Lennards' Chambers, Penzance.
,, 31	Workmen's Cottages (15), Friern Barnet	Urban District Council	E. E. J. Reynolds, A.M.I.C.E., The Friery, Friern Barnet, N.
Aug. 1	Telephone Exchange, Alterations to, Birmingham	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
,, 2	Cemetery, Repairs, &c., at, Bebington	Burial Board	H. C. Davies, F.S.I., Archt., 167, Old Chester-rd., Birkenhead
,, 5	Dwelling Houses (26) Hemel Hempsted	Town Council	Franklin and Deacon, Archts., 21, Market-hill, Luton.
,, 5	Rescue Station, Brigham	West Cumberland Colliery	A. Huddart, Archt., 9, Lowther-street, Whitehaven.
,, 5	Ham and Bacon Factory, Additions to, Harrow	J. Adamson and Co., Ltd.	H. E. Scarborough, Archt., 22, Lowther-street, Carlisle.
,, 6	Reception Station, Castle Park Barracks, Dunbar	Secretary of State for War	The Director of Army Contracts, War Office, S.W.
,, 6	Central Library, Dunfermline	Public Library Committee	J. Shearer, Archt., 1, Bonnar-street, Dunfermline.
,, 12	New Science Museum, South Kensington, W.	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
,, 16	Council Schools, Additions, &c., to, Waltham Abbey	Essex Education Committee	The County Architect, 73, Duke-street, Chelmsford.
Sept. 1	First Section of Parliament Buildings, Wellington, N.Z.		Public Works Offices, Wellington, New Zealand.
No date	Four Houses, Birkenshaw		A. T. Verity, Archt., Birkenshaw.
do.	Bakery, Holker-street, Barrow-in-Furness	R. Loxham and Sons	Settle and Brundrit, Archts., Barrow-in-Furness.
do.	Houses (31), Alterations to, Annfield Plain		The East Pontop Colliery Offices, Annfield Plain.
do.	Stores and Offices, Stalybridge	Tramways and Electricity Board	R. Blackmore, Eng.-in-Chief, Generating Station, Stalybridge
do.	Picture Palace, Mill-street, Alloa		J. D. Swanston, Archt., Kirkcaldy.
do.	Four Cottages, Launceston-road, Callington	A. Pyles	L. Scantlebury, Archt., Callington.
do.	Clowes P.M. Church and Schools, Renovating, Leeds		F. S. Morland, 18, Cambridge-road, Leeds.
do.	Parish Hall, St. Paul's, St. Albans		P. C. Blow, A.R.I.B.A., 7, London-road, St. Albans.
do.	Shops and Offices, Ropergate, Pontefract	R. P. Husband, J.P.	Garside and Pennington, Archts., Pontefract.

ELECTRICAL PLANT.

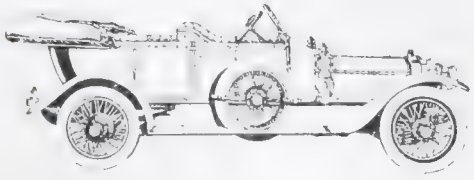
July	19	High-Tension Switchgear, Newport,	Corporation	A. N. Moore, M.I.E.E., Elec. Eng., Town Hall, Newport, Mon.
,,	19	Switchgear and Accessories, Perth	Western Australia Government	The Agent-General, 15, Victoria-street, Westminster, S.W.
,,	19	Generating Station, Farciennes, Hainaut		M. Alphonse Van Essen, Ingenieur-Conseil, Charleroi.
,,	21	Traction Switchboard Panel (3,500 ampere), Belfast	Tramways and Electricty Com.	T. W. Bloxham, Elec. Eng., East Bridge-street, Belfast.
,,	21	Cables, West Hartlepool	Corporation	C. Burgess, Man., Tramways Depot, West Hartlepool.
,,	22	Switchgear, London, S.W.	County Council	The Clerk, County Hall, Spring Gardens, S.W.
,,	22	Plant, Shipley	Urban District Council	W. Redman, Elec. Eng., Dockfield Works, Shipley.
,,	23	Installation, Tollit-street Special School, Mile End, E.	London County Council	G. Humphreys, Chief Eng., County Hall, Spring Gardens, S.W.
,,	24	Plant, &c., Hackney, N.E.	Borough Council	The Borough Elec. Engineer, 306, Mare-st., Hackney, N.E.
,,	26	Plant, Todmorden	Corporation	J. Boyce, Boro' Elec. Eng., Todmorden.
,,	27	Telephone Cables, Brussels	Post and Telegraph Department	Hotel Central des Postes, Place de la Monnaie, Bruxelles.
,,	31	Electric Light Installation at Infirmary, Rotherhithe, S.E	Bermondsey Guardians	E. Pitts Fenton, Clerk, Spa-road, S.E.
Aug.	4	Condensers, &c., Melbourne	Agent-General for Victoria	Merz and McLellan, Consulting Engs., 32, Victoria-street, S.W.
,,	19	Cables (105 miles), Melbourne		The Deputy Postmaster-General, Melbourne.
Sept.	6	Switchboard, Christchurch, New Zealand	City Council	The City Elec. Engineer, 153, Gloucester-st., Christchurch, N.Z.
,,	10	Thermo-Electric Central Station, Valparaiso		The Offices of Chilean Legation, 48, Grosvenor-square, W.
,,	10	Three Electric Bed Lifts at New Hospital, Port Elizabeth	Public Works Department	The Chairman, Union Tender Board, P.O. Box 371, Pretoria.
,,	13	Electric Generating Plant, Valparaiso		Secretario de la Comision, Santiago de Chile.
,,	16	Switchboards, Melbourne	Deputy Postmaster General	The High Commissioner, 72, Victoria-street, S.W.
No date		Steam Turbine, Oldham	Corporation Electricity Committee	S. Wilmott Newington, Boro' Elec. Eng., Oldham.
,,	do.	Rewinding Three-Phase Alternator, Newport, Mon.	Corporation	A. N. Moore, Boro' Elec. Eng., Town Hall, Newport, Mon.

ENGINEERING.

July	18	Regenerator Setting, Cockermouth	Urban District Council	E. D. Wootten, Eng. and Man., Gas Offices, Cockermouth.
,,	18	Four Pneumatic Grain Elevators, Antwerp		The Collège des Bourgmestre et Echevins, Anvers.
,,	18	Exhausters, Bangor	Urban District Council	J. Milliken, Town Clerk, Town Hall, Bangor, Co. Down.
,,	19	Rebuilding Elm Bridge, Vauhurst-road, Cranleigh	Hambledon Rural District Council	Samuel B. Hasell, Sur., Bramley, near Guildford.
,,	19	Heating Apparatus, St. John's R. C. School, Padiham		Rev. Father Hart, St. John's Rectory, Padiham.
,,	21	Water Main from Knabbs Hill Reservoir to Thurnscoe	Urban District Council	J. Ledger Hawksworth, Clerk, Bolton-on-Dearne, Rotherham.
,,	21	Pump, Gosport Park, Gosport	Urban District Council	The Surveyor's Office, Gosport.
,,	21	Covered Reservoir (670,000 gallons), Whalley, Lancs	Lancashire Asylums Board	J. T. Wood, M.I.C.E., 3, Cook-street, Liverpool.
,,	21	Mechanical Stokers, Cawdor-street, Patricroft	Electricity Supply Committee	The Borough Electrical Engineer, Patricroft.
,,	22	Bridge, Nansough Hill, Ladock	Truro Rural District Council	C. Hancock, Clerk, 12, Princes-street, Truro.
,,	22	Girder Bridge over Deerren River, Tombeagh	Carlow County Council	R. J. Keogh, Sec., Court House, Carlow.
,,	23	Heating Installation at Workhouse, Mitcham	Holborn Guardians	Dolby and Williamson, Con. Engs., 8, Princes-street, S.W.
,,	23	Waterworks, Newport, Isle of Wight	Rural District Council	H. B. Cullin, Brooklands, Wootton.
,,	23	Disinfector at Isolation Hospital, Massey Brook	Lymm Urban District Council	D. Mort Sur., Council Offices, Lymm.
,,	23	Iron Escape Staircase at Workhouse, Chase Side, Enfield	Edmonton Guardians	J. C. S. Mummery, A.R.I.B.A., 13, Fitzroy-square, W.
,,	24	Extension of Pumping Station, Conway	Rural District Council	Farrington and Son, Civil Engs., Llandudno.
,,	24	Laying Pipes (18in., 7in.), Wakefield	Waterworks Committee	C. C. Smith, M.I.C.E., Waterworks Eng., Town Hall, Wakefield.
,,	24	Heating Workhouse, Fulham Palace-road, W.	Guardians	E. J. Mott, Clerk, 129, Fulham Palace-road, Hammersmith, W.
,,	24	Steel Bridge, Altofts	Wakefield Corporation	C. Smith, M.I.C.E., Waterworks Eng., Town Hall, Wakefield.
,,	25	Brick Bridge over Bow Brook, near Defford	Highways and Bridges Committee	G. F. Gettings, County Sur., Shirehall, Worcester.
,,	25	Girder Work and Cast-iron Piling, London, E.C.	Bombay, Baroda, and C.I. Railway	C. Crommelin, Sec., Gloucester House, 110, Bishopsgate, E.C.
,,	26	Rebuilding Townend Bridge, Croscombe	Somerset Works Committee	H. T. Chapman, County Sur., Wells.
,,	26	Highway Bridges, Ford and Thistlewood	Somerset County Works Com.	H. T. Chapman, County Sur., Wells, Somerset.
,,	28	Cornish Boiler at Workhouse, Thornton Heath	Croydon Guardians	H. List, Clerk, Mayday-road, Thornton Heath.
,,	29	Power House, Uitenhage, Cape Province	South African Railways Admin.	The Secretary, S.A. Ry. Headquarters Offices, Johannesburg.
,,	29	Waterworks, Sheerness	Urban District Council	F. W. S. Stanton, A.M.I.C.E., 3, Victoria-street, S.W.
,,	30	Steel Towers, Perth, W.A.	Australian Postmaster-Gen.'s Dept.	The Commonwealth Offices, 72, Victoria-street, S.W.
,,	31	Water Softener Plant at Infirmary, Rotherhithe, S.E.	Bermondsey Guardians	E. Pitts Fenton, Clerk, 283, Tooley-street, S.E.
Aug.	1	Pumping Station, Baltim-Gharbia, Egypt	Public Works Ministry	Sir Arthur Webb, K.C.M.G., Queen Anne's Chambers, S.W.
,,	1	Transfer of Lighthouse, Cape Wrath	Northern Lighthouses Com.	C. D. Peddie, Sec., Northern Lighthouse Board, Edinburgh.
,,	1	Filter Beds, Invercannie, Aberdeen	Town Council	C. H. Roberts, M.I.C.E., 41½, Union-street, Aberdeen.
,,	6	Laundry Plant, &c., Alexandra Hospital, Cape Town	Public Works Department	The Secretary, Public Works Department, Pretoria.
,,	9	Harbour Works, Figueira da Foz		Secretaria Geral, Ministerio de Fomento, Lisbon.

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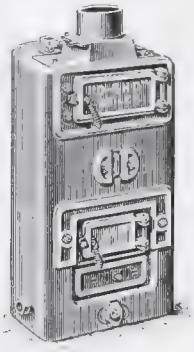
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July 25, 1913. Volume CV.—No. 3055.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House, Strand, W.C.

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OUR ILLUSTRATIONS.

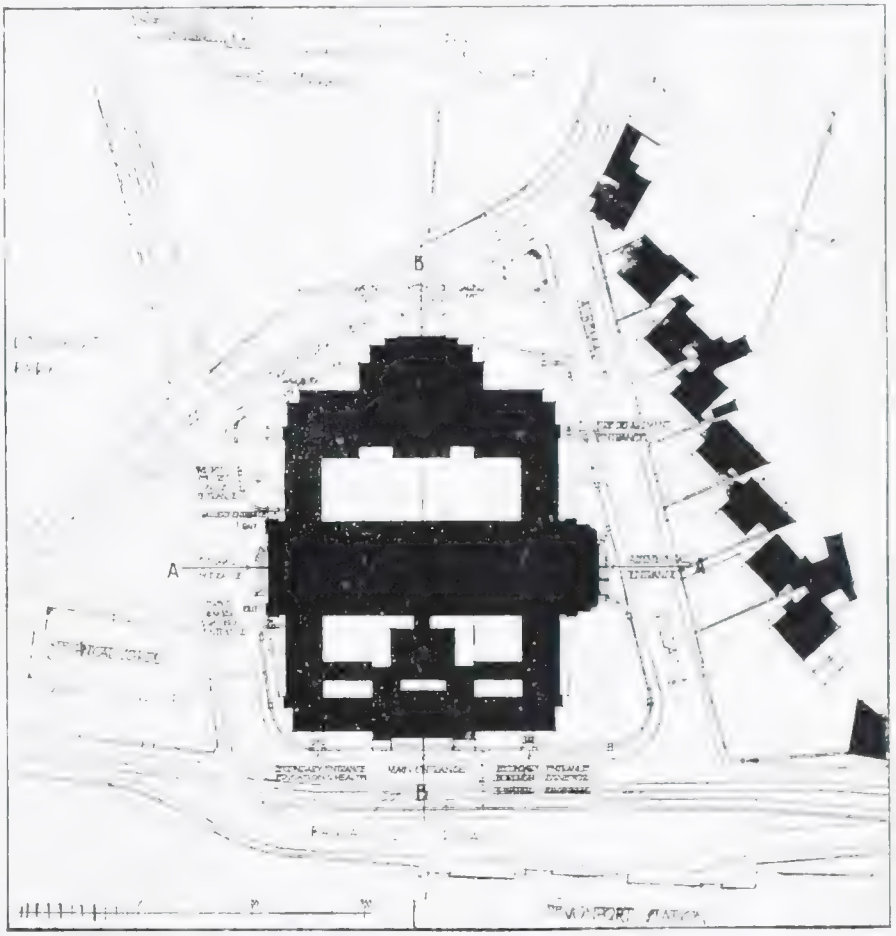
	Devonport Municipal Buildings: Selected Design. Plans, block plan, elevations, sections, and details. Messrs. H. V. Ashley and E. Wyndham Newman, FF.R.I.B.A., Architects.
131	Lambeth Baths. Plans and details. Mr. Humphry [illegible], F.R.I.B.A., Architect.
131	Lambeth College for Women. Elevation, plan, and details. Mr. Hippolyte J. Pe[illegible], F.R.I.B.A., Architect.
133	Preliminary Sketch and Detail of Proposed Baths, Lambeth. Mr. W. E. Riley, F.R.I.B.A., Superintending Architect L.C.C.
133	Police Orphanage, Redhill. Mr. J. A[illegible], Architect.
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DEVONPORT MUNICIPAL BUILDINGS COMPETITION.

Looking at the designs as a whole, there seems to have been some doubt in the minds of the competitors as to what axial line to plan the building on. All the most successful schemes, including the three premiated ones, have taken an axis at right-angles to Paradise-road, and there is no doubt that this is right, when the surroundings and the relative importance of the surrounding roads are taken into consideration. All three premiated designs place the entrances of the Municipal Buildings in the centre of S., of the Guildhall in centre of W., and of Assembly-Hall on the E., leaving the N. side for Police- and Fire-Station.

THE SELECTED DESIGN.

No. 24, by Messrs. Ashley and Newman, 14, Gray's Inn-square, W.C., has a straightforward and good working plan, with direct and well-lit corridors, and the arrangement of the departments of the ground-floor is superior to that of the other premiated designs. A large general rates office is placed opposite the main entrance, and underneath the council chamber, the light being obtained by high-up windows all round over the various rooms of treasurer's department, which surround and open into this general office. The arrangement is good, but it is open to question whether the lighting thus obtained will be sufficient, though we think it might. All the surrounding rooms are also top and side lit. The main staircase is placed in the front, leading up to the council-chamber, placed centrally, and on the level of guildhall floor, to which access is provided; but the committee-rooms are not well placed, being so far removed from the council-chamber. Other competitors have arranged this far better. The guildhall is placed across the centre of site, with the assembly-hall across its eastern end, so arranged that the retiring-rooms and kitchen serve well for both halls. The guildhall is completely surrounded by corridors, giving on the north most excellent emergency exits into the police-yard. The guildhall and assembly-hall, with their entrances, take up the whole width of site, and, though the roads are E. and W., are widened to 50ft. The wide carriage approaches shown on other designs are preferable, and the road on the W., where the trams run, is likely to be blocked by the carriage traffic to this guildhall. (See block plan herewith.) The police premises on the lower ground floor are well arranged, with cells lighted from an exercise-yard, adjacent to police drill-yard. This arrangement of yards carefully carries out the conditions, and is eminently satisfactory. The fire-station, placed on the N.E. corner, unlike many other designs, is made part of the main building. It is open to objection: the levels would be easier at the N.W. corner, and it would have been a great advantage if the engines could be run out at back into a yard for cleaning and turning and practice, as is well done in designs No. 1 and No. 4. A mess-room is supplied for the firemen—not asked for in the conditions; but a very necessary provision. The police-court and quarter-sessions court are well arranged, with a dignified entrance in centre of north frontage, leading to a spacious salle d'attente, into which witnesses' rooms—of which there are four—solicitors' and barristers' rooms open. The elevations are simple, monumental, and undoubtedly gain much by all the accommodation being arranged in one connected building, the centrally-placed guildhall forming a leading feature. The half-inch detail of the portico shows careful thought, with obvious exercise of restraint in the simplification of its detail. It may fairly be said that No. 24 has won by the conscientious way in which the conditions have been worked out, the simple and direct planning, and refinement of detail, and, more particularly, on the economy of the scheme. The N. and S. blocks are cubed at 1s. and the central block at 8d. a ft.cu.



DEVONPORT MUNICIPAL BUILDINGS COMPETITION. BLOCK PLAN. SELECTED DESIGN.

THE DESIGN PLACED SECOND

by Messrs Harris and Moodie, follows the general lines of the first premiated design, but makes the fire-station a disconnected building, separated from the main building by the police-yard, into which the engines

No

can be run. This arrangement, however, prevents an imposing entrance to the courts being obtained on the N. elevation. The guildhall and assembly-hall are also arranged on a line parallel with Paradise-road, as in the first design; but they do not take up the whole width of site, and the road on the west is widened out into a spacious circus in front of guildhall entrance, partly encroaching on the garden of the technical schools over the way, and a new road is formed on the axis-line of guildhall joining this circus with Trafalgar-road. There is a site for a monument in the centre of the circus, and the tram-lines are diverted away from new building. This would give an imposing approach to the guildhall, and the end elevation of guildhall might be seen from the distance. The planning of the lower ground-floor of the municipal offices is not equal to that of the first design. The rates office is put opposite the main entrance, as in the other, and the rooms of treasurer's department are en suite on either side, and all opening into a corridor, only lit, however, with borrowed lights from adjoining rooms, and closed at ends. The corridor in basement under appears to have no light at all. On the principal floor the arrangement of council-chamber, on the one side, is balanced by committee-rooms on the other. This is excellent, and quiet is obtained for all these rooms. The public, however, cannot get to the gallery of the council-chamber without passing through the water-engineer's department, which is on this floor. The staircase again is in the centre of south front, the mayor's room being placed at S.W. corner, and the town-clerk's department along the south front. The organ chamber of the guildhall and caretaker's apartments are arranged over the assembly-hall, which lessens the total width of building, and thus allows for setting the guildhall entrance back from road, as mentioned above. This plan is arranged so as to have only two large internal areas, one dividing the municipal offices from guildhall, and the other guildhall from courts, etc. Internally the guildhall has an arcade running all around, with a gallery over, the authors, in their report, claiming this aids the acoustic properties of the hall. The elevations of the scheme are very plainly treated, and simple, but are not very interesting, and the east elevation is poor.

THE THIRD PREMIATED DESIGN.

It is difficult to understand why the design by Messrs. Ralph Knott and Collins has been placed third. We do not think the elevations can have helped its choice much, and there are very many plans among the unpremiated ones which we much prefer. The general lay-out of the plan is the same as the other two, with the fire-station disconnected and placed on the north. There are many faults to be found with the plan, which is anything but direct and simple, and the way it is drawn adds to the evident confusion. The main staircase is placed well inside the building, and the mayor's parlour takes the central position on the S. front. The council-chamber and committee-rooms, on E. and W. front respectively, though both recessed, are still on outside, and not likely to be as free from noise as they should be. They are also too far removed from one another, and connected only by wandering corridors and a lavatory. The general public, coming up the main stairs, are brought right to the door of the council-chamber. On the ground-floor the rates office is possibly better arranged than in the other two designs, it being kept away from main entrance hall, and served by a corridor running completely through the building from E. to W., with entrances at either end. The planning of the assembly-hall, to our mind, is very bad. Instead of making a feature of the entrance to it in the centre of E. elevation, the entrance is placed round the corner on the N.; thus this assembly-hall, holding 524 people, seems to have but one exit at the end, and one up some stairs to the platform level of guildhall. The police- and quarter-sessions court are placed to the N. of guildhall, with the main entrance to them from the western road. There is no dignified entrance, as in the first scheme, and a staircase has to be mounted directly the building is entered. A similar entrance and staircase is placed on E. front for the magistrates. The S. elevation is disappointing. The elevations show some knowledge of the value of wall-surfaces, but evince weakness in dealing with the placing and the proportion of windows.

OF THE UNPREMIATED DESIGNS.

No. 42, by Mr. Ernest Wray, shows a well-got-up set of drawings, with an excellent wash detail. This design follows the outline of the site, the guildhall and courts being planned on an axial line not parallel with Paradise-road. It is an excellently-thought-out scheme, but looks as if it would cost considerably more than £95,000 to build.

No. 1, by Mr. Austen Hall, is another proposal on the same lines as the premiated design and No. 4, and also has many excellent points. It is one complete building, and the fire-station is better placed on the W. front than in the winning design. It has back entrances on to the police drill-yard, allowing the engines to be taken out there and cleaned and washed. The repair-shop hardly seems adequate. The municipal offices are not as successfully arranged as in the premiated design, the planning of the borough treasurer's department, in particular, being weak. The general rates office is a passage room to the other rooms of department, and the treasurer's private office can only be got to through the public space. The council-chamber is placed in a central position, with an ante-room on either side of it. These are merely wide corridors, and one large ante-room would be preferable. The municipal offices in the scheme require more staircases to serve the various departments. These would keep the general public from the main staircase, which divides council-chamber from committee-rooms. The plans are a very well-drawn set, with a taking detail, and the elevations are good, but somewhat expensive.

No. 79, by Messrs. Maurice Webb and Farey, is by far the best-got-up set in the exhibition, and it is a very taking plan. A feature is made of the four corners of the building, which are treated symmetrically, and form on the north the two courts, and on the south the assembly-room, balanced by the council-chamber. The guildhall is in the centre. The council-chamber is not in a sufficiently retired position. The scheme is worked out cleverly; but the corridors do not seem sufficiently lighted, and it is difficult to see how the kitchen is to serve the assembly-room without carrying everything through the crush-hall of the guildhall. The N. corner of site is occupied by the police-yard, and the fire-station takes a central position on the N. elevation.

No. 4, by Mr. Maurice S. R. Adams, is a plan on very similar lines to the premiated ones; but it places the assembly-hall over the entrance of guildhall—a quite good arrangement, and the plan works out satisfactorily, with well-planned courts, having entrances on the north, with grand jury room over entrance. This scheme also has the fire-station with back access to the yard, which is good. The arrangement of council-chamber and committee-rooms is quite one of the best; but the guildhall lacks a surrounding corridor and sufficient exits. The borough treasurer's department is on the main floor, well conforming with the conditions. The elevations are simple and good, though with rather too much lattice-work to windows, and there is a well-executed washed detail drawing of refined character.

No. 3, by Mr. Septimus Warwick, is one that follows the shape of the site, and very similar to the arrangement of No. 42, but has an expensive dome over main entrance, of pleasing shape, and a rather unpleasantly-shaped pediment over the guildhall entrance. It has a startlingly-drawn detail.

No. 73, by Messrs. Thornely, Rooke, and Barron, of Plymouth, conjointly with Messrs. Briggs, Wolstenholme, and Thornely, of Liverpool, is a good design on the lines of the premiated ones; but it is spoilt by being cut up too much. It has a broad carriage-drive from E. to W., dividing the site in half, and the wings of the municipal offices are not connected up with guildhall. This involves much extra expense, as the N. and S. sides of guildhall are visible from the roads. The council-chamber and committee-rooms are well arranged, and private from the public traffic, and entrances to departments are pleasingly arranged at the S.E. and S.W. angles of building. The planning of the lower ground-floor is good, and the rates office kept out of the main entrance-hall. The elevations are excellent in design, and well drawn; and a well-drawn detail is shown.

No. 81, by Messrs. Jemmett and Tubbs, is an interesting scheme attempting the placing of guildhall on the S. front, above a large entrance-hall, which serves all departments, and the guildhall and assembly-hall. The judicial courts, with police premises and fire-station, are arranged on an immense semicircle, giving a large semicircular court in the centre. The scheme looks much too expensive; but it has a masterly S. elevation, and the scheme is planned on a palatial scale. No. 13, by Messrs. Keys and Dowdeswell, arranges the courts at the E. end of guildhall, but gives a very small assembly-room. The fire-station opens on to drill-yard, and there is a good arrangement of council-chamber and committee-rooms. An excellently-drawn detail of very large size is shown, but with the columns uncomfortably widely spaced in front.

No. 2, by Messrs. George Drysdale and Aylwin, makes a separate building of courts, police premises, and fire-station, and places this, as a triangular-shaped block on the N. of site, and plans the guildhall and municipal offices, etc., in a rectangular block, balancing the council-chamber by the assembly-hall. There is no central entrance on S. front, the entrances to guildhall and municipal buildings coming at either end of the building, with a dignified columnar treatment along the S. front between them. There is much merit in this S. elevation, and it is well shown in a strong wash detail.

No. 18, Mr. David W. Ayre, shows a plan placing guildhall on N.; but has spoilt any possibilities there might be in getting a good effect from the park by placing the fire-station in the N.E. corner, as a disconnected building. The general arrangement of other parts is somewhat confused.

No. 6, Mr. T. P. Bennet, shows a guildhall like a miniature Albert Hall, and has scattered, disconnected buildings over the site, an impossible scheme to build.

STUDENTS' WORK AT THE ROYAL ARCHITECTURAL MUSEUM.

The Architectural Schools at Tufton-street, Westminster, broke up on Friday afternoon last, when the annual exhibition of work by students in the Architectural Association classes was opened, together with an exhibition of drawings and paintings from the Public Schools, which remained on view till last Wednesday.

The general display is meritorious, and on no former occasion do we recall a more uniform character of work in the higher-grade class; and if no student exhibits special brilliancy, it is so because to do so would tax capabilities of no mean order.

The subject in the fourth-year school at Tufton-street which has attracted most attention this year is "a monument to commemorate the bringing of water to a town," and for this there were thirteen designs. The draughtsmanship is imitative of the Parisian manner, effective and uniform in finish, though not exactly convincing in the dexterity of its execution. It would appear that no special site was decided on as a preliminary guide for the competitors consequently it is not easy to compare the designs. The scheme submitted by Mr. John Endred Lutyens is unlike either of the others. He has imagined a site at the head of a lake or ornamental water, with hills behind furnishing him with a setting for his memorial, which has a big elliptical fountain enclosure set in front of the votive centrepiece, and backed by a colonnaded pavilion. Steps follow round this upper fountain pond, and are enclosed by a parapet conforming with the before-mentioned contour. These stairways lead down in the centre, right and left of a threefold cataract fountain discharging itself below a wide segmental-fronted terrace forming a frontispiece to the composition, the outlet for the waterfalls being into the lake in the foreground, and presumably part of a public park. The site is an imaginative one, suggesting the proximity of the local watershed beyond the hills, or perhaps the source from whence the supply originates, even if some might fancy that, by a theatrical device of undulating scenery, the usual type of waterworks must be situate hard by out of sight at the rear. In a line with the axis of the elliptical or upper pond, and facing one another at the extreme right and left, are located a pair of equestrian figures standing like sentinels, and seemingly serving no particular purpose. The monument itself takes the shape of a rusticated tower, or perhaps, to be more descriptively exact, a dwarf obelisk with a cornice, and terminating in a sculptured group, neither strikingly original nor particularly distinctive, as emblematical of the intentions implied by this subject.

In the scheme submitted by Mr. R. Stuart Wallace (Travelling Student) the work is more ordinary, and disposed in the form of a circular grande place, with statues set out on the plan, though absent in the elevational drawing. The circular fountain is depicted throwing the water with great force an immense distance into the vast basin, so that the wind would distribute the spray considerably round about. The design is rather lacking in interest, though shown well in silhouette against the sky by his drawing, which is pleasingly tinted.

Mr. R. Haig Philp associates a wall-treated fountain with the flank of a group of public baths, facing a segmental public place set out in front and approached by a series of radiating avenues disposed between several big buildings, which the plan scarcely suggests sufficiently, owing to the pale washes on these blocks of premises, the effect being at first sight more like open grass plots alternating with the roadways. This design subordinates too much the public building to which it is attached, while the adjacent blocks are inconsequential and poorly conceived for such an eminent situation.

Mr. Cecil Davies places a rectilinear erection in a square grande place backed by public buildings. The feature of his proposed monument is a frieze of figures round its big pedestal, having segmental projecting basins on the cardinal sides, while heroic seated female statues occur at the base of the tower, the detail of which accords with the small scale drawing of the whole project.

Mr. Robertson Braine is more grandiose in his notions, and his imagination has resulted in a triangular plan with its acute angles denuded, the proportions elevationally being rather squat in outline, and little gain has been insured for good effect by the uncommon plan adopted. Skirting the circular contour which marks the rear of his grande place are situate a series of colonnaded buildings or pavilions bespeaking no particular purpose, save an ambitious architectural lay out, which would mean a corresponding cost not likely to be incurred by any town council.

A well-shown proposal by Mr. Athold F. Hooper presents little of striking originality, taking the form of a terraced fountain in the middle of an open square similar to many of the other plans. The details are well delineated, but such items as the huge urns set in front of the façade, with flames cut in stone, cannot be described as good.

The triumphal arched structure submitted by Mr. Harold Dicksee is distinguished by a big group in bronze, representing a chariot and four prancing horses, indicative, possibly of triumph, the driver suggesting an equestrian episode rather than a water commemoration. The fountain itself in this design occurs as if by an afterthought low down in the plinth.

Mr. F. Harold Addey relies too much upon the colossal figures of Neptune reclining in the tempestuous waterfall, with Cupid crawling, as it were, in the flood between the legs of the Roman Deity, or his identity, the Greek Poseidon.

Among the other compositions displayed amidst this series we noted a triumphal arch of bold and refined design by Mr. R. Stuart Wallace, illustrating the value of ample plain mural treatment, though the coarse discs above these flanking piers and set in the frieze crush the smaller scale of the intervening fascia enrichments, which are indifferently suggested. The corners of the building are cut off to give space for lumpy trophies, introduced to make out the angles in front of the structural splays. The arch itself is semicircular, of lofty proportions, effectively delineated against the sky in a telling manner.

A more severe scheme for the same subject is marked "C. E. D.," but its attic is overbig, and the frieze below is very commonplace.

A fine feature in this assemblage of the more advanced students' work comprises some eleven or twelve designs for a covered carriage entrance to a large hotel, including the general facade of the building. One might well have transposed the title, instead of limiting the greater subject by the less, important, no doubt, though the entrance to an hotel may be. Mr. H. J. Tebbutt's is one of the best designs for this subject; but in the absence of a plan it is not evident for what purpose the middle entrance in his proposal is intended in regard to the covered carriage porch; unless the latter is divided into a pair, one to the right and the other to the left of the principal doorway to the hotel set between the colonnade constituting this carriage shelter. If this be so, it is not clear how the visitors coming in motors or other vehicles are intended to alight. The further designs appear, however, on the other hand, to confound the pedestrians' entrance too much with the carriage traffic; at any rate, Mr. Tebbutt avoids that contingency. Mr. Harold Dicksee sends a Doric-pilastered and arcaded portal refined in its finish; however, this, in the detail, is rather interfered with by the motor and man introduced to give scale; for this they tend to destroy. Mr. R. Stuart Wallace is somewhat happier in his general scheme, projecting his porte cochere and getting a capital frontage to his hotel. The motors, seemingly, would have to run up over the public pavement. This trifling difficulty is not explained by any plan. Mr. J. Endred Lutyens, who is a nephew of Mr. E. L. Lutyens, A.R.A., deserves preference on the merits of his design, and he recognises the need of roadways as approaches to the hotel portico. This takes the form of a regular porte cochere, as in the last-named scheme. The enrichment of Mr. Lutyens' [illegible] naded ground-floor stage, which is well contained between massive and rusticated terminal wall piers at the ends of the front. Some complimentary ornamentation is further [illegible] frieze below a plain horizontal roof-line, giving much breadth to the composition; but there are no chimneys. The fenestration of this façade emphasises the difficulty of properly managing the exigencies essential to modern hotel design; for, manifestly, the windows provided in this case are inadequate for lighting big apartments, while, on the other hand, they are too widely spaced for the needs of economic accommodation. Architecturally, the plain openings and wide mural surfaces between them add no doubt to good effect. As a contrast, Mr. R. Haig Philp is more at home than Mr. Lutyens as regards the uncompromising requirements of contemporary hotel-building, and he sends an effective front of much merit. The detail befits contemporary hotel-building. The least satisfactory part of this design is the wide opening of the carriage entrance.

The general selection exhibited in the studios of the elementary students' work, and also the intermediate second- and third-year classes' display, is too large for any description in our available space. The subjects include garden houses and a variety of buildings, some of the house designs being set for execution in some particular local manner, such as the Worcestershire stone work, or in a Southern Counties half timber type of design. The studies shown of carved ornaments done from exhibits in the Museum, do not, we are assured, represent the best of that kind of drawing done in the schools, because the more advanced pupils show their designs in preference to their sketches of old work. The passing fashion for Renaissance may not encourage the study of Mediæval work; but it would add to the interest of these annual exhibitions if some really capable drawings were included in this class of architectural education, in lieu of the poor productions at present displayed by first-year students. Mr. Aymer Vallance, M.A., is the lecturer on Mediæval Architecture, and perhaps he might help in this direction another time, though his work is confined to the preparatory course. Mr. H. P. G. Maule has retired from the head mastership, and much of the merit to which we have drawn attention is no doubt due to his successor, Mr. Robert Atkinson, helped materially as he has been by Mr. W. J. Keir in the second- and third-year work. But Mr. Maule laid the foundation of the more advanced students' studies as represented in the exhibition this year, and the praise now due should be shared by him as well as by Messrs. Atkinson and Keir.

The breaking-up ceremony marking the close of the work of the session at the Architectural Association's School of Architecture took place at 18, Tufton-street, Westminster, on Friday afternoon. Mr. W. Curtis Green, F.R.I.B.A., the President, occupied the chair, and in a few well-chosen words presented to Mr. H. P. G. Maule, who is retiring from the head-mastership of the school after holding that post for the past ten years, a pair of silver candelabra as a mark of esteem and regard from members of the Association and past and present pupils. An address to the students was delivered by Mr. Charles Sims, A.R.A., and Sir Aston Webb, C.B., C.V.O., R.A., and Mr. Paul Waterhouse, M.A., also spoke.

The President distributed the awards to students, in accordance with the following

PRIZE LIST.

[illegible]
W. H. Lloyd.
[illegible]

Hon. mention and authors of drawings selected for school portfolio, G. G. Clark, J. L. Murgatroyd, W. H. Lloyd, D. S. Glover, H. Schien, and J. H. Hopewell.

Special prize for distinction in Test Paper: given by Headmaster, N. F. C. Day.

Second year. Travelling Studentship £15, for studio and lecture work during session 1912-1913, and general progress, J. Burford.

Specially commended, and special prize given by Headmaster, A. Stanhope Forbes.

Hon. mention for general progress during session, A. S. Furner, M. T. Waterhouse, J. H. Jacobs, H. H. Gossling, and H. George.

End of Session Study.—Special prize given by Headmaster: Study placed first, M. T. Waterhouse; second, J. Burford; third, D. C. L. Derry.

Drawings selected for presentation to school portfolio, J. Burford, A. S. Furner, and A. S. Forbes.

Students awarded the Association Two Years' Course Certificate: J. Burford, with honour; M. T. Waterhouse, with distinction; B. George and P. Butt, satisfactorily; A. S. Forbes, with distinction; C. J. Brookes and J. H. Jacob, satisfactorily; A. S. Furner, with distinction; D. C. L. Derry and H. F. Gossling, satisfactorily.

Third year:—Travelling Studentship, £21, for best work in the year, R. S. Wallace; ditto second prize, value £2 2s., H. J. H. Dicksee.

Book prize, value £2 2s., for first place in Test Subject, R. H. Philp. Book prize, value £1 1s., for second place in Test Subject, B. S. Wallace.

Book prize, value £2 2s., for greatest progress, H. J. Tebbutt. Second prize, value £1 1s., for greatest progress, F. A. Addey.

Recommended for the Jarvis Scholarship, value £40, H. J. H. Dicksee.

EVENING SCHOOL.

First year.—Book prize, value £2 2s., E. A. D. Tanner; second prize, value 10s. 6d., L. Claydon.

Second year.—Scholarship, free pass to Third Year, value £15 15s., H. A. N. Mead.

Third year.—No awards.

Fourth year.—Travelling Studentship, value £15, D. J. Gordon. Book prize, value £2 2s., J. B. M. Walch. Hon mention, T. W. Dowsett, W. Harkess, H. F. Prynne, H. D. Archer, and A. J. Thompson.

Day School Entrance Scholarship, value 48 guineas, Mr. Brian, of Berkhamsted School.

LECTURES.

Elementary Physics: Book prize, L. Claydon.

Elementary Construction: Book prize, L. Claydon.

Materials: Book prize, H. J. H. Dicksee.

Intermediate Construction: Book prize, R. Haig Philp.

Steel Construction: Book prize, A. S. Burnett.

Advanced Construction: Book prize, H. J. Tebbutt.

Hygiene: Book prize, H. J. H. Dicksee.

Grecian, Roman, and Byzantine: Book prize, L. Claydon.

Mediæval Architecture: Book prize, H. A. N. Medd and B. George, equal.

Renaissance Architecture: Book prize, E. A. D. Tanner.

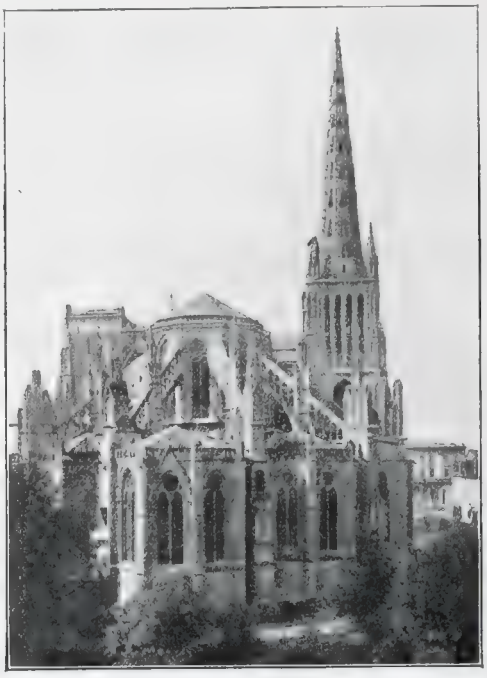
THE CATHEDRALS OF SOUTHERN FRANCE.*

The literary activity of Mr. T. Francis Bumpus in ecclesiological lore and output is prodigious. He has already written for Mr. Werner Laurie in rapid succession about a dozen stout volumes on the cathedrals of England and Wales, Norway, Sweden, and Denmark, Northern Germany and the Rhine, Belgium, Northern and Central Italy, and Northern France, and there now lies before us a companion work to the last-mentioned book, dealing with Southern France, penned with the same vigour, vivacity, and enthusiasm as its predecessors, with the same quick insight into the causes and effects of peculiar planning, and the like keen appreciation of the finest work in stained glass and carving. The volume is written in an easy, gossipy style, but gives abundant evidence of wide reading of authorities on architecture, and careful weighing of divergent criticism based upon personal examination of the buildings described, and comparison with many other contemporary edifices.

A wide net has been cast over Southern France by the author, who has included in its limits the great churches of Brittany, Berri, and Burgundy, omitted on account of considerations of space from the first volume, and even now for a like reason has been compelled to forego mention of some of the lesser cathedrals lying to the south of the Loire. By this arrangement he has been able to furnish a lucid and comprehensive view of the several schools of architecture prevalent in Western, Central, Southern, and South-Eastern France between the 11th and 16th centuries.

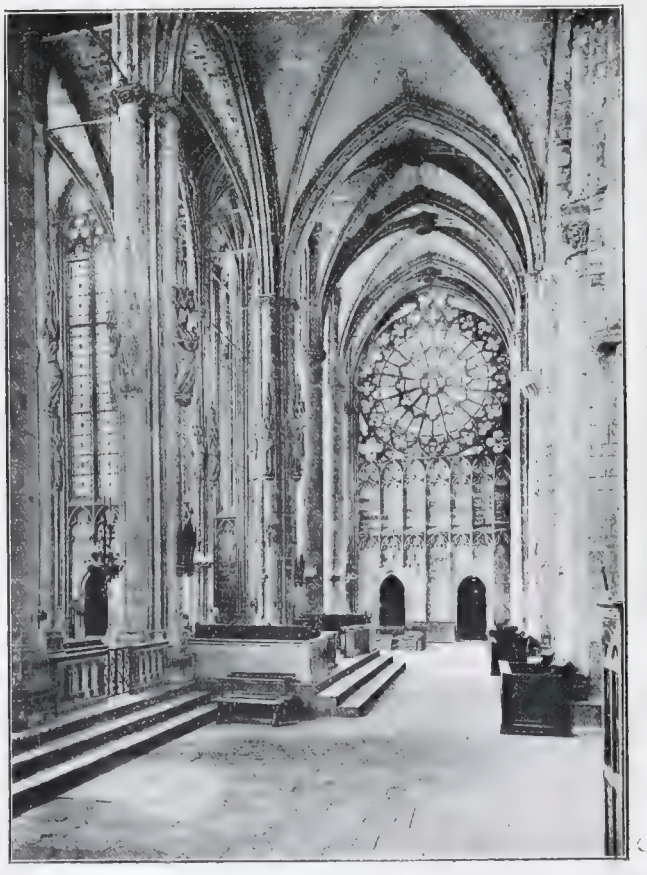
Mr. Bumpus points out that the ancient provinces of France retain so much of their traditions and tastes, that each presents its own local varieties of architectural style.

*The Cathedrals of Southern France. By T. Francis Bumpus. Crown 8vo, cloth, 224pp. 50 illustrations from photographs. 6s. net. London: T. Werner Laurie, Clifford's-Inn, Fleet-street.



BORDEAUX CATHEDRAL, FROM THE EAST.

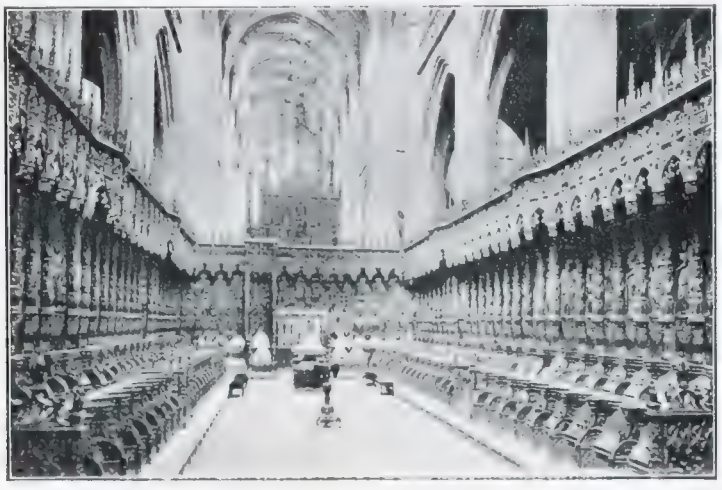
Thus we have in the North, distinct French styles in Normandy, in the Ile de France, in Champagne, and Lorraine, from the near contiguity to Germany, the buildings are German rather than French in many important particulars; and in Brittany, where provincial localisms are, the author observes, more strongly marked than elsewhere. Going south-westwards we have a style distinguished by extreme peculiarities in Poitou and Aquitaine, and another in an opposite direction in Burgundy. A Romanesque style of extraordinary interest has its centre at Clermont-Ferrand, in Auvergne, another at Angoulême in the district known as the Charente, and a third at Arles, in Provence. Then, again, in the 14th- and 15th-century architecture of Gascony and Languedoc, we find some very marked Spanish characteristics. "The brick district of the latter province is highly interesting. It centres at Toulouse, and it is here that we meet with



THE SOUTH TRANSEPT, SS. NAZAIRE ET CELSE, CARCASSONNE.

such vast aisleless churches as those at Albi, Bazas, Carcassone, and Perpignan—churches which, if deficient in the grace and poetry of the Northern examples, are admirably adapted for great congregations and an imposing ceremonial." There are also, Mr. Bumpus demonstrates, in the provinces south of the Loire cathedrals and portions

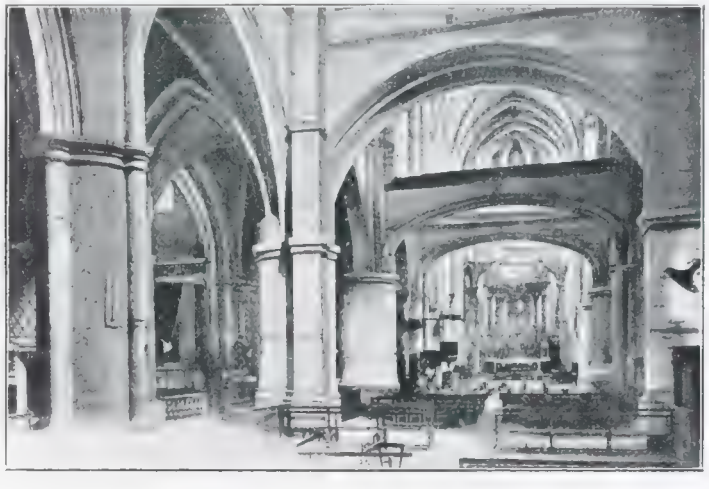
of cathedrals rebuilt since the middle of the 13th century, to which the architects of the North gave their lines, and in which we have the polygonal apse, with its processional path and corona of chapels, the lofty nave arcade and clerestory, and the well developed tri-



AUCH CATHEDRAL. THE CHOIR STALLS, LOOKING WEST.

forium. The author point out that although the English long held sway in the south west of France, the occupation exerted little influence on the general design or detail of the local architecture, the reason being, he thinks, because we held this part of France as conquerors, and not as colonists.

The great cathedral of Bordeaux, of which we reproduce, from Mr. Bumpus's work, by Mr. Werner Laurie's permission, an exterior view from the east, presents a strange admixture of conflicting styles and heterogeneous parts which have a certain picturesqueness in their blend. Based in plan on a Latin cross, it consists of a wide aisleless nave of seven bays, transepts, and choir, loftier and narrower than the nave, with aisles, large lateral chapels, and a five-sided apse enriched



CHURCH OF ST. PAUL SERGE, NARBONNE.

with an aisle, from which five chapels, each with a three-sided apse, open. The Late 13th-century choir and transepts are a rebuilding due to Archbishop Bertrand de Goth, afterwards, from 1305 to 1316, Pope at Avignon under the title of Clement V. The apse has the appearance, as the author remarks, of having been designed by a Frenchman under strong English influence. The north and south transepts are flanked by oblong towers, those on the north side being taller than the southern pair, and being crowned, moreover, with pinnacles, and octagonal pierced spires rising to a height of 150ft.

The cruciform cathedral church of Sainte Marie at Auch was begun in 1489, on the site of a much earlier edifice, and was reconstructed in 1549. It was further enlarged in 1607. As the dates of the rebuilding suggest, the existing edifice is Flamboyant in style, of a subdued character. The choir is remarkable for the sumptuousness of its furniture. The three bays on either side are entirely occupied by the stalls, which, as will be seen from the illustration, are returned at the west end, and number 113 in all. They were executed between 1520 and 1540, and constitute probably the finest Early Renaissance woodwork in France. The seats are separated by pilasters carved with statuettes placed in niches, and there are numerous figures in high relief illustrating personages from the Old or New Testament, or allegorical figures. The altar and its supports show still more advanced signs of the development of the Renaissance than do these stalls and the elaborate screenwork by which they are enclosed and protected.

The church of St. Paul Serge in the former city of Narbonne, of which we reproduce an interior view looking east, is one of the most interesting and suggestive cruciform churches in Languedoc. The apsidal choir is in the First Pointed style, with five very shallow pentagonal chapels radiating from the ambulatory, into which, as well as into the aisle on either side of the choir, the traceried openings in the triforium stage of the choir look. There is a decided Spanish look about the east end of this church. The three great strainer arches thrown across the nave to correct some instability in the original work are, in spite of their heaviness, by no means unpicturesque elements in an interior which rather gains in dimensions by their presence.

Another illustration from the volume before us is that of the church of SS. Nazaire et Celse, at the south western extremity of the old city at Carcassonne, a [illegible] cathedral, which since 1803 has had to give place, as the seat of the bishop's throne, to the over-restored church of St. Michel in the lower town. The nave of St. Nazaire, almost unique in its Late Romanesque character, has neither triforium nor clerestory, and with its aisles is covered with a barrel vault. The choir and transepts, with their magnificent windows, are a chef d'œuvre of the latter part of the 13th and the beginning of the 14th century built for Bishop Pierre de Rochefort before 1321, and in point of [illegible] may be classed with such gems of the complete Gothic as St. Urbain at Troyes and Ste. Marie de l'Epine, near Chalons-sur-Marne. A wall of stained glass, almost coeval with the building, enriches the choir and transepts, the architect of which portion of the fabric adjusted his exquisite creation to the existing nave with far more concern for the building of his predecessors than was common in mediæval times. The architect has built a short sanctuary terminating in an aisleless pentagonal apse, and with chapels on the eastern side of either transept, from which they open by pointed arches on tall cylindrical columns.

Mr. Bumpus has shrewdly analysed the plans and well described the main features of the many cathedrals treated upon, and his work will be of great interest and value not only to the tourist, but to the architectural student.

EXEMPTION OF BUILDERS FROM INCREMENT VALUE DUTY.

The Revenue Bill, which was introduced on May 7, was printed and issued on Monday. The Government are still unable to say whether the Bill can be passed this Session or not. It is a Bill of 15 clauses, and its principal provisions are framed to confer exemptions from increment value duty upon builders and others developing estates for building purposes and upon small investors in land and house property. It is a complex Bill, and although according to an official statement which is issued, it gives effect to the intentions of the Government, as expressed in the House of Commons, to make it absolutely clear that no part of a builder's trade profits shall be subject even to the possible operation of the increment tax, our first experience of Mr. Lloyd George's good intentions induces us to wait, at any rate, till Wednesday next for the meeting of the National Federation of Building Trades Employers before joining in the congratulations some are offering who all along have protested fiercely that we are suffering no hardship.

The clauses of the Bill which frank building estates in course of development and free builders from the possibility or apprehension of any claim for duty in respect of trade profits were settled as the result of a conference between the Chancellor of the Exchequer and the legal representatives of the National Federation of Building Trades' Employers, and approved and accepted by them as removing the apprehensions occasioned by the decision in the Lumsden case, and as satisfactory from the point of view of those engaged in the building trade.

As regards houses and shop property and other buildings, in all cases where the value of the building exceeds the value of the site, the vendor may have the increase in site value (if any) on the occasion of a sale determined by valuation without reference to the price obtained.

No Increment Value Duty will, therefore, be payable on a sale of such property by a builder or investor on any profit he may make, except as to profits which may arise out of an increase in the value of the bare land apart from the buildings, and which are not due to any expenditure, or the execution of any works, on his part.

A sale of such property at a price above its market value or at an increased price due to a rise or recovery in the value of the buildings will not involve any claim for duty.

SMALL INVESTORS.

The small investor in land or houses whose income does not exceed £160 is wholly re-



THE POLICE ORPHANAGE, REDHILL.—Mr. J. Augustus Souttar, Architect.

lieved from the incidence of the tax in respect of any sale of a property not exceeding £500 in value.

BUILDERS.

Builders and land owners engaged in developing land for building purposes receive further important concessions under the Bill.

The clauses in the Finance Act which exempt from taxation any increase of value in land attributable to the execution of any works or the expenditure of money by the owner are extended to exempt any increase of price obtained by reason of financial assistance given to purchasers, or by reason of any other arrangement made by the vendor to facilitate sales.

In the case of land in course of development by a builder or landowner for building purposes, though the value of the bare land may have risen from causes independent of the development of the estate, no claim for Increment Value Duty will be made during certain periods allowed by the Bill.

After the land has been prepared for building purposes by an expenditure (e.g., on roads or sewers) equal to the full site value of the land or £200 per acre, whichever be the lesser sum, the land is franked from Increment Value Duty, and a certificate of exemption given for a period of five years, and as suitable houses are from time to time erected, each building with its appurtenant land is further franked from duty for a period of five years from the date of erection.

When these periods of five years have elapsed, builders' profits and occasional profits on sale, not due to an increase in the site value, will still be exempted from duty under the provisions of the Bill above referred to.

AGRICULTURAL LAND.

The valuation roll of agricultural land is to be completed, in accordance with the desire of those representing agricultural interests in the House of Commons, by the addition of a column showing the "unimproved value" of the land. For this purpose the valuers are to deduct the value of all unexhausted improvements, such as drainage, embankments, walls, etc., effected at any time within thirty years prior to April 30, 1909. The amended valuation will thus afford a basis for any future legislation to exempt improvements in the assessment of agricultural land for local rates.

OTHER EXEMPTIONS.

Among the remaining sections of the Bill are clauses giving certain relief from Reversion Duty where land was originally leased on favourable terms for charitable purposes, or where a lease has been extended on the lessee undertaking to effect improvements in the property.

Property owners who have neglected to claim "substituted site value" within the time allowed by the Finance Act (1909-10) are given a further opportunity to make the claim, if it is in their interest to do so, within three months after the first occasion on which a claim for duty arises.

POLICE ORPHANAGE, REDHILL.

The Princess Alexander of Teck, accompanied by Prince Alexander of Teck, opened the new central building of the Provincial Police Orphanage at Redhill last week.

This building, which connects the original house with the Victoria and Gurney Wings, occupies a central position. The basement has accommodation for the boiler-house and coal-cellar, a drying room, and two store-rooms.

Access from the grounds is obtained from both front and back of the building; a boys' workroom 18ft. by 20ft. and two staff-rooms occupy the south front of building on the ground floor, with two staff-rooms and a large lavatory to the rear, besides dry and grocery stores.

The passages and lavatories are paved with terrazzo, and the rooms with wood-block flooring. The staircase is of ferro-concrete construction faced with terrazzo, and has enamelled brick dado.

On the first and second floors there are two dormitories facing south (each 33ft. by 18ft.) for 24 children, matron's sitting-room and bedroom, maids' workroom, H.M., pantry, three bathrooms and lavatories, cupboards, etc. Structural alterations have been made to the old building, and most of the interior has been redecorated. The cost exceeds £5,000. The general contractor is Mr. Geo. Martin, Redhill. The constructional steelwork is by Messrs. A. Dawnay and Sons, Ltd.; the flooring (wood-block and terrazzo) by the Art Pavements Co., Ltd. Mr. J. Augustus Souttar, of Bishopsgate, E.C., is the architect.

SUITABILITY OF INDIAN ARCHITECTURE FOR THE NEW DELHI.

At the meeting of the East India Association, held at Caxton Hall, Westminster, on Monday, a lecture on "Indian Architecture and its Suitability for Modern Requirements," illustrated by lantern views, was given by Mr. F. Oscar Oertel, F.R.I.B.A., superintending engineer P.W.D., Allahabad. Sir Richard Temple, Bart., occupied the chair. The lecturer contended that the want of a Renaissance of Indian art was deeply felt, and it had become our clear duty to foster it and guide it into the right channel. The Indian peasant largely judged the character of our rule by public buildings. He hoped the architects of the Imperial City would recognise that neither Palladian nor Gothic would do for Delhi, situated as it was in the very heart of India and full of most sacred traditions. The names of the builders of the New Delhi would go down to history, and the task was so great and glorious that a preliminary study of Indian architecture on the spot would be worth while. He advised them to go to Agra and Fatehpur Sikri to study the buildings of the great Emperor Akbar, who largely employed Hindoo builders and craftsmen, giving them a very free hand, the result being the growth of a truly Indian style, which should be revived in these days. Much as he admired the Taj and the marble palaces of Shah Jehan, it was in the red sandstone buildings of Akbar that he found the greatest human interest. In his opinion, it was a mistake to regard the Public Works Department as the great opponent of indigenous art and architecture. There was no feeling whatsoever against indigenous architecture in the service to which he belonged, but in the selection of styles they were not always free agents, as many considerations came in. After 30 years' experience he strongly held that architectural salvation for India lay in the adoption of some form of Oriental architecture which had grown up in the country and was most suited to its climatic and other conditions. There was no insuperable difficulty in procuring the execution of work in Indian style, but the same could not be said when it came to foreign styles. To get a Corinthian capital carved in India was a matter of the utmost difficulty. If it were necessary for European officers to learn the language of the people, it was also necessary to learn something of their art. Architects using the Indian style had two rich sources to draw from—the old Hindu style and the Mohammedan styles brought in by the Mogul conquerors, and the infinity of detail gave full scope for the most stately and ornate, as well as the most simple structures. There was plenty of scope for originality in modern buildings on the part of trained architects, and the Indian craftsmen had still sufficient innate knowledge to grasp the intention at once. Indian architecture was bound to prevail in the end over imported styles. English architects working in India sooner or later adopted indigenous architecture or modified Western styles by an Oriental flavour. If Indian art as a whole was to be resuscitated, the first necessity was the establishment of good schools of architecture, which was the parent art giving employment to the other arts, where indigenous architecture, sound planning, and scientific methods of construction could be taught by trained architects conversant with the style of the particular locality.

Sir Louis Dane, till recently Lieutenant-Governor of the Punjab, said that the recommendations of the town planners of the new capital closely corresponded with those independently made by the local government. He gave his personal testimony that Mr. Lutyens and Mr. Baker are carefully studying the adaptation of Indian designs to the needs of the new city, and they certainly would not fail to avail themselves of the services of Indian master builders and craftsmen.

Viscount Halifax has promised to erect a new church at Goldthorne, to seat 700 people. It will take the place of a mission church which has done duty for the past eighteen years, and will be built on a site adjoining. Lord Halifax has this week been in consultation with his architect, and, having finally approved the plans, the work will commence at once. A vicarage will also be built.



SKETCH DESIGN FOR SCREEN FOR LAMBETH BRIDGE.
BY
W. E. RILEY F.R.I.B.A. SUITE A 20 ST. MARTIN'S CHAMBERS

THE PRELIMINARY DESIGN FOR THE PROPOSED NEW LAMBETH BRIDGE.

Mr. W. E. Riley, F.R.I.B.A., Architect.

(WITH ILLUSTRATIONS.)

As previously announced, we are now able to show Mr. W. E. Riley's design for the proposed new Lambeth Bridge, the proposals for which the Select Committee of the House of Commons have rejected, on the following grounds already stated. A detail of the proposed decorative scheme of treatment will be found among our plates.

The construction of the bridge as designed by the engineers is to be in steel, and the only portions permanent to be in masonry were the cutwaters, the piers being of steel. The cutwaters were intended to be in concrete faced with granite, and the details in brickwork generally, especially the arches, were to be deposited. The following notes accompanied the design when it was laid before the Committee of Parliament which considered the Bill.

A bridge built of metal across the Thames should, it was thought, show the construction in its elevations. In dealing with steel or such like materials the treatment of each span and pier can well illustrate the construction in an architectural sense. A large circular construction, empowering segmental girders between the piers, at intervals, forming the cutwaters, results in a fine, feature-less line which does not itself make for a pictures que treatment, and the object in this preliminary sketch was to extend the cutwaters both up and down the river, and place on them a conspicuous subject which would break the monotonous line. There is a proposal to place the Thames Wheel on here mentioned as a most important structural elements of commodity and the object expressed here was to adapt in a decorative and ornamental treatment the lofty revolving wheel of the two or three picturesque old ships which are connected with British naval history and place these over the piers thus forming a continuous metallic superstructure above the line of granite which would be unaffected a total observation and ornamental treatment.

CHIPS.

The new public hall erected in the commercial grounds adjoining the Victoria Park, Leicester, at a cost of £25,000 was opened on Monday. The hall has been built from designs by Messrs. Stockdale Harrison and Sons of Leicester, and is in the Renaissance style. It provides seating accommodation on the ground for 1,700, whilst the gallery circle has accommodation for 600. Each seller's 250 and platform 400, or a total of 2,900. Including the promenades the ordinary will accommodate 4,000 persons.

The annual inspection of the Duke of the Queen Victoria School, Dunblane, was made on Monday afternoon by Major-General Sir C. I. N. Macready, K.C.B., who, after the inspection, on behalf of the War Office, presented Sergt. Cox the Imperial Service Decoration, awarded to him at £7,000 and also the Queen's Medal and rifle shield. The inspection of boys and girls took place, including the annual presentation of the Scottish soldiers who fell in South Africa. A collection in connection with the annual demonstration was afterwards made to be a permanent and plain memorial to the late A. Cassells, of Glasgow, on April 26, 1907.



Fig. 1. THE RACE STAND, BALDOYLE, CO. DUBLIN.

REINFORCED CONCRETE BUILDINGS.

By Wm. G. Shipwright, Licentiate R.I.B.A., M.C.I., and Chartered Surveyor by Exam.

Messrs. Batchelor and Hicks, Architects.

The Race Stand at Baldoyle, Co. Dublin, is another of the types of building for which reinforced concrete is well adapted. The photograph (Fig. 1) shows the front elevation, which is constructed with large arched openings and piers in plain work, with roughcast panels. The wide openings above the piers in the flanks give the structure a broad and effective appearance.

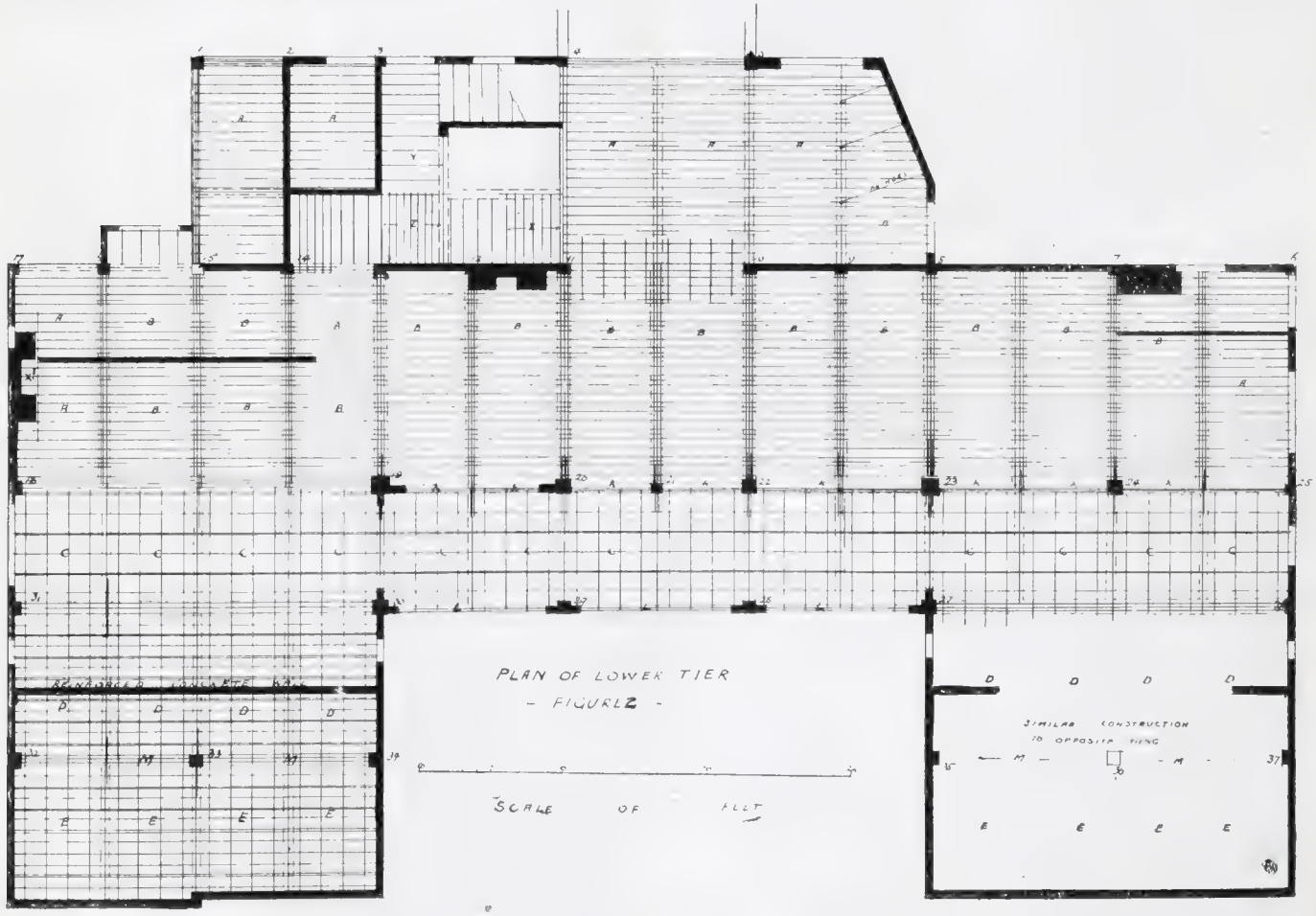
The photograph also shows the building whilst a test was in progress, and was taken at a time when about one-half of the total load had been applied.

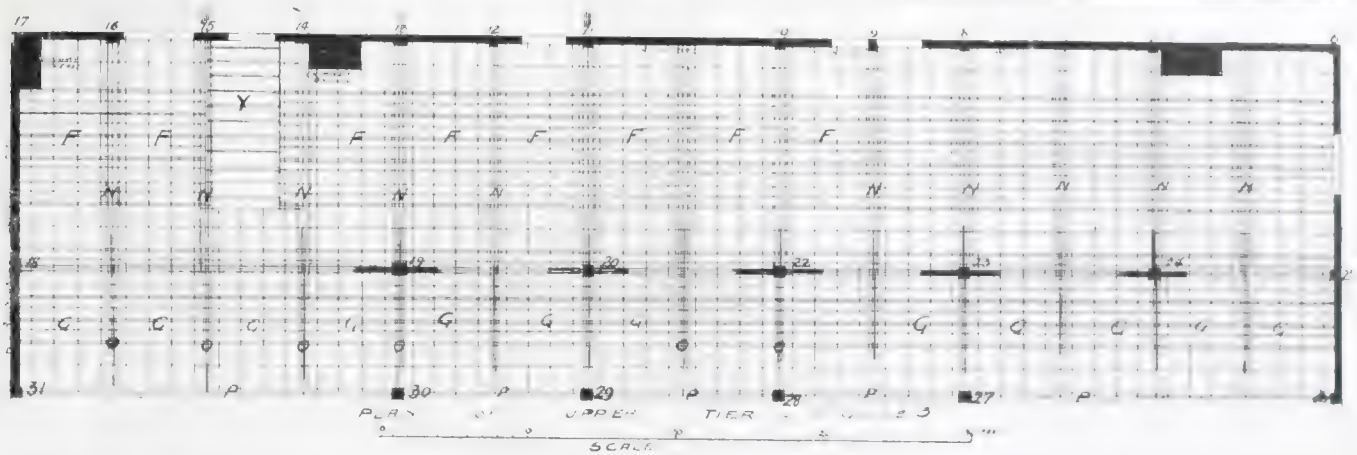
The general scheme of construction is shown on the plans, of which Fig. 2 represents the lower tier, and Fig. 3 the gallery. From these illustrations it will be seen that the main construction consists of a series of reinforced beams supported upon thirty-seven reinforced columns, with reinforced-concrete enclosure walls in the positions required.

The columns (Nos. 1 to 37), which vary in size according to the requirements of the load, are of the type shown in Fig. 4. The column illustrated is one of the series Nos. 19 to 24. It is 12in. wide, reinforced with four ¾in. "rib" bars placed at the angles and bound with spiral (⅜in.) wire of 12in. gauge.

It will be seen that the columns are carried through both tiers, with the exception of No. 20, Nos. 4 and 5, and 32 to 37, which support the single-story building only.

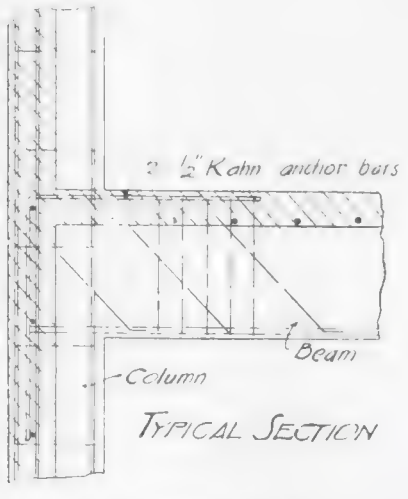
The flat floor in lower tier at the rear of the stand comprises the bays marked A and B on the plan (Fig. 2). These floors are 4in. thick throughout, the span varying from 6ft. 9in. at A to 6ft. 6in. at B, and are reinforced with ⅜in. "rib" bars placed 7½in. apart. Extra rib bars are placed above the

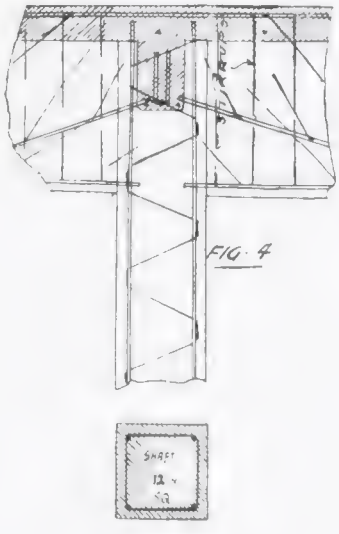




beams in the positions shown in the upper plans of the floor, to insure continuity of construction and take up the tension stress across the beams; the trimming for the brick chimney breast is strengthened by a single crossbar, 9ft. long.

The stepped portion, the bays, marked by letters C, D, and E, are formed throughout





in concrete 4in. in thickness with ⅜in. "rib" bars reinforcement arranged in the form of a lattice. Each of the treads and risers in D and E, which are about 27ft. long, are provided with fifteen ⅜in. bars, with extra ⅜in. distributions bars, and ⅜in. longitudinal bars; extra ⅜in. longitudinal bars are placed in the manner shown at the top and bottom of each riser.

The bays of flooring in the upper story at F and G are reinforced with ⅜in. rods 18in. apart, and extra "rib" rods ⅜in. diameter at the top and bottom of the risers.

The beams are constructed on the general type illustrated in Fig. 5, which constitutes one of the main beams running between columns Nos. 18 to 24. The span averages about 24ft., and the dimensions of the beam are 24in. by 10in., reinforced with three ¾in. "trussed" bars in the tension boom in the centre of the span, and one similar bar in the upper part of the beam, across the supporting column, to secure continuity in the tension resistance.

Considerable variation is to be found in the sizes of the beams to meet the requirements of head room and design. The beams at H are 18in. deep and 8in. wide, reinforced with one ¾in. Kahn "trussed" and a ¾in. "rib" bar. Beams J are 18in. deep, 10in. wide, with three ¾in. Kahn "trussed" bars. Those at K adapting themselves to the general design are 5ft. 3in. deep, whilst those at the L are 5ft. 6in. deep each being 8in. wide, and having two bars in the tensional reinforcement. Two 1in. trussed bars are employed in tensional resistance of the 16in. by 10in. beams at M, the span of beams approaches 20ft., and a 20in. by 12in. reinforced girder is employed. The load is considerable, and three ¾in. "trussed" bars are employed as reinforcements in both tension and compression booms. Fourteen inch by 6in. beams, with one ¾in. trussed, and two ¾in. "rib" bars are used for the beams at O, which beams resemble those employed in a similar position in the lower story.

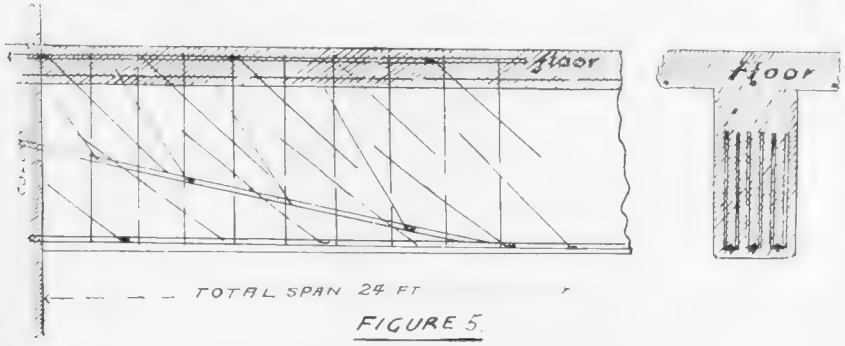


FIGURE 5.

The stairs shown at "Y" are constructed with 4in. reinforced-concrete landings and [illegible] placed at 7½in. centres being employed in the landings, "Z."

Reinforced partitions and walls vary from 4in. to 6in. in thickness. The external walls are generally 6in. thick, with a lattice of "rib" bars arranged in the manner shown in Fig. 6, which illustrates the connection between the columns and beams and the junction of the floor with the external wall.

The whole work, which comprises an excellent example of reinforced concrete [illegible] the Trussed Concrete Steel Company, Ltd. The contractors were Messrs. [illegible] Frazer, of Bray.

THE WATERPROOFING OF CONCRETE.

A committee of the American Society for Testing Materials has been investigating the waterproofing of concrete structures for the past eight years, and its researches have been carried on through laboratory tests and experiments and through observation of a good deal of work while in progress and after completion. Some time has been required to extend the investigations of this committee over a period long enough to determine the permanency of methods noted. The report of the committee, presented at the recent annual meeting of the society in Atlantic City, states that while it has not been able to arrive at conclusions sufficiently definite to enable it to formulate specifications for making concrete structures waterproof, it has reached certain general conclusions which may be of value to constructing engineers in their efforts to secure impermeable concrete.

In its investigations the committee considered the usual mixtures of Portland cement, sand and crushed stone, or other equivalent aggregates, in the ordinary proportions of 1 cement, 2 sand, and 4 of stone, to 1 of cement, 3 of sand, and 6 of stone, and as to methods of waterproofing it, considered both the introduction of substances other than cement, sand, or stone, intended to have void-filling action, and also the treatment of exposed surfaces, after the concrete has hardened, by liquids intended to have either a void-filling or penetrative action, or to prevent water from having access to the surface of the material.

In its laboratory work the committee found that by the use of properly-graded and sized aggregates, in mixtures ranging within the proportions previously noted, an impermeable concrete can invariably be produced. On practical considerations, however, it is not found commercially possible, on large construction, to obtain results which can even approximate results that could be expected in laboratory work. The fact that commercial work in general falls short of laboratory work in results obtained was found to be due to a number of defects or shortcomings, among which were improper proportioning, lack of thorough mixing, separation of coarse and fine aggregates in the mixing, or transporting, or placing of the mixed material; insufficient tamping; improper bonding of work at joints; the use of imperfectly-sized and graded aggregates; the

use of excessive water, causing shrinkage cracks and laitance seams; and cracking of the mass of material, due to lack of provision for taking care of expansion and contraction. In laboratory work the conditions can be arranged to perfection, whereas in commercial construction, speed, cost, weather conditions, etc., are factors to be reckoned with. For these reasons it seems to the committee that impermeable concrete could be secured most economically by adopting some special waterproofing treatment. One means to this end which has come into quite general practice is the use of substances incorporated either in the cement or in the material during the mixing process. This practice has resulted in the development and marketing of numerous patented compounds, the composition of many of which purports to be a trade secret. The committee has investigated a number of these, as well as the commercial mineral products, such as finely-ground sands, colloidal clays, hydrated lime, etc., and has arrived at the following conclusions: -

"(a) The majority of patented and proprietary integral compounds tested have little or no permanent effect on the permeability of concrete, and some of these even have an injurious effect on the strength of mortar and concrete in which they are incorporated.

"(b) The permanent effect of such integral waterproofing additions, if independent of the action of organic compounds, is very doubtful;

"(c) In view of their possible effect, not only upon the early strength, but also upon the durability of concrete after considerable periods, no integral waterproofing material should be used unless it has been subjected to long-time practical tests, under proper observation, to demonstrate its value, and unless its ingredients and the proportion in which they are present are known;

"(d) In general, more desirable results are obtainable from inert compounds acting mechanically, than from active chemical compounds, the efficiency of which depends on change of form through chemical action, after addition to the concrete;

"(e) Void-filling substances are more to be relied upon than those the value of which depends on repellent action;

"(f) Assuming average quality in sizing of the aggregates and reasonably good workmanship in the mixing and placing of the concretes, the addition of from 10 to 20 per cent. of very finely divided void-filling mineral substances may be expected to result in the production of concrete which under ordinary conditions of expense will be found impermeable, provided the work joints are properly bonded, and cracks do not develop on drying or through change in volume due to atmospheric changes, or by settlement."

As for external treatments the committee has found that, no matter how carefully concrete has been made, cracks are liable to develop, owing to shrinkage in drying out, expansion and contraction during change of temperature, or through settlement, for which reason it is often advisable to provide for such possible occurrences by protective coatings; and such coatings must be sufficiently elastic and cohesive to prevent cracks from extending through the coating itself. In this connection it has been found that the "application of merely penetrative void-filling liquid washes will not prevent the passage of water due to cracking of the concrete." For this reason the committee has divided surface treatments into two classes—viz., penetrative void-filling, liquid washes and protective coatings, the latter including all surface applications intended to prevent water from coming in contact with the concrete.

Investigation has shown that while penetrative washes may be efficient in rendering concrete waterproof for limited periods, their efficiency is liable to decrease with time, making necessary repetition of such treatment. Protective extraneous coatings of bituminous or asphaltic character are valuable as a protection where cracks develop in a structure, and the conclusion reached is that the most certains means of protecting the concrete is a combination of both the integral and extraneous methods of waterproofing.

As to the use of bituminous or asphaltic coatings, the committee found that these are often subject to more or less deterioration with time, and may be attacked by vapours or injurious substances in solution in water which comes in contact with them, and that, in general, the most effective method of applying such protection is in the setting of a course of impervious brick in a solid bed of bituminous material, or the dipping of such brick in bituminous material and cementing them together by hot bitumen. Care is required to properly clean and prepare the concrete surface before application of the protective coating.

It is interesting to notice that after considering the frequently-offered suggestion that impermeable concrete can be produced by using mixtures rich in cement, the committee concludes that advantages secured in this way may be only temporary, as the richer concretes are more subject to check cracking, and are less constant in volume under changes of temperature or moisture conditions than are the ordinary mixtures. With reinforced-concretes, however, the objection in this connection is not so great, as the tendency to cracking of the material is more or less counteracted by the reinforcement. There is very little engineering work where the principle of "eternal vigilance" is not essential to good results, and the committee ends its report with the following conclusion, that "no addition of waterproofing compounds or substances can be relied upon to completely counteract the effect of bad workmanship, and the production of impermeable concrete can only be hoped for where there is determined insistence on good workmanship."

BRISTOL BUILDERS AND THE CORPORATION.

At the quarterly meeting of the city council of Bristol, held on Tuesday, an animated, and at times heated, discussion followed the reading of two letters from the Bristol Master Builders' Association, objecting to certain conditions embodied in the clauses as to wages and conditions of labour which the council recently decided should be inserted in corporation contracts. It was contended that these conditions constituted an undue interference on the part of the corporation with the conduct of firms in so far as they referred to work other than that comprised within the contract, and a list had been supplied of twenty-eight firms who had declined to tender whilst such conditions remained. It was pointed out that the Council adopted the clauses on the recommendation of a special committee, including in its panel gentlemen representing the building trades, and the question was asked why these members had allowed the clauses to pass through without a protest. Mr. Maggs suggested that the reason was that the master builders had no real grievance, and had only taken up their present attitude of opposition out of "pure cussedness."

As a way out of an admitted difficulty, Alderman George Davies proposed to refer the matter to a special committee, consisting of the chairmen of fourteen committees of the council, to consider the communications received, and report whether any, and what, alterations should be made in the clauses. Mr. Senington hoped the council would note the fact that the difficulty had arisen through the master builders going on strike, a course which they were not slow to condemn when it was resorted to by others. An amendment by Mr. Pope provided for the reappointment of the contract clauses committee, and referring the correspondence to that body. This was defeated on a division by 42 votes to 22. Thereupon Mr. Whitefield moved, and Mr. Senington seconded, another amendment, which declared in effect that in view of the circumstances under which the clauses had been adopted there was no need for further inquiry, and suggested that the master builders be informed that if they failed to tender the corporation would undertake the work. An attempt to closure the debate was strongly objected to by Alderman Sheppard, who made a vigorous protest against surrendering at the dictation of the Master Builders' Association, and several members urged that if a deadlock arose the corporation should undertake the work through its works department. When a division was taken, Mr. Whitefield's amendment was negatived by 50 votes to 14, and subsequently Alderman George Davies's motion was adopted, with the addition of the names of Alderman Hayes and Mr. Neale, representing the builders, and Alderman Sheppard and Mr. Senington, representing the Labour interest.

Christ Church, Healey, near Rochdale, was reopened last week, after renovation and redecoration carried out by Messrs W H Best and Co., of Rochdale.

Mr. T. J. McGregor, assistant engineer of the Public Works Department, Selangor, Federated Malay States, has been selected for the office of state treasurer at Perak.

At Oxford, on Wednesday, Mr. Selwyn Image, M.A., New College, was unanimously re-elected to the Slade Professorship of Fine Art for a further period of three years.

New church schools are about to be built at Uttoxeter from plans by Mr. Sandys. The contractors are Messrs. Gough and Son, of Wolverhampton, and the outlay will be about £4,800.

The Chester-le-Street Rural District Council have engaged Messrs. Taylor and Wallin as their engineers for the construction of a ferro-concrete reservoir, in connection with the improvement of the water supply of Great and Little Lumley parishes.

The contract for the new Normal School to be erected in the city of Victoria, British Columbia, was let recently by the Provincial Government to Messrs. Luney Brothers, of that city. Operations will be started immediately. The cost will exceed 300,000dol.

Steps are being taken for the restoration of the parish church of Ramsey, near Harwich, which has a fine Norman south door and some good carvings in the chancel roof and the pulpit. The first works to be undertaken are the combat with dry-rot, including reflooring and reseating.

Two hundred and eighty cottages are about to be built at Newtownards for the urban council, from plans by Messrs. Hobart and Heron, architects, Scottish Provident Buildings, Belfast. Tenders have been received for about fifty cottages, the first instalment of the undertaking.

In the case of the application made at Wandsworth County-court on behalf of Alfred Henry Sheppard, John Ivanny Beaves, and Walter William Green, trading as Sheppard and Co., Kyrle-road, Clapham Common, builders and contractors, the order of discharge has been suspended for two years.

A new church is being erected for the parish of Heathery Cleugh, Upper Weardale. The old church is in danger owing to industrial operations. The new church, which has been designed by Messrs. Clark and Mosscrop, of Darlington, will seat 250 worshippers. The builder is Mr. Hopper, of Wolsingham.

The King has presented to the Dean and Chapter of Truro the silver trowel with which King Edward VII., as Prince of Wales and Duke of Cornwall, laid the foundation-stone of the cathedral on May 20 1880. The trowel was designed by the late Mr. J. L. Pearson, R.A., the architect of the cathedral.

The members of the expert committee which is engaged in examining the fabric of St. Paul's Cathedral and considering methods of strengthening the foundations are: Mr. Horace Darwin, acting on behalf of Sir John Wolfe Barry; Mr. Mervyn Macartney and Mr. W. D. Caröe, architects; and Sir Francis Fox and Mr. R. C. H. Davison, engineers.

The contract has been arranged for the erection of the new Parliament Buildings at Winnipeg at a cost of 2,859,000dol. (£571,800), to be completed during 1917. We illustrated the design by Mr. Frank W. Simon, F.R.I.B.A., of Liverpool (selected in competition by the assessor, Mr. Leonard Stokes), in our issue of September 27, 1912.

A picture-palace is being built in Arkwright-street and London-road, near the Trent Bridge, Nottingham. It has a frontage of 56ft. to those thoroughfares, and 72ft. to Trent Bridge, and will seat 800 people. The architect is Mr. William R. Gleave, A.R.I.B.A., of Nottingham, and the building will be opened during September.

Currente Calamo.

We give on another page the official statement, issued on Monday, summarising the provisions in the Revenue Bill which has been kept back since May 7, and which now has to be passed in the post-haste fashion in which all Finance Bills have been rushed by this Government. We trust, of course, that the provisions *do* effect the relief to builders which is promised; but Mr. Lloyd George's ideas about builders' profits have differed all along so from the facts that we prefer to "wait and see." We hope we may get a clear statement in regard to Mr. Lloyd George's intentions at the National Federation of Building Trades Employers next Wednesday. If that statement bears out the promises reported, we shall be glad; and the great building industries will undoubtedly be relieved of the shamefully unjust and exceptional treatment that has ruinously hindered their participation in the general prosperity of the last eighteen months. Many people think it would have been better to have abolished the whole of the stupid and profitless land taxes; and we are inclined to agree with them. But our quarrel with the Government has been in regard to the penal treatment of our own members, who have been taxed as no other members of the community have been taxed, and who have been exasperatingly assured, time and again, by the Chancellor of the Exchequer that they had nothing of the sort to complain about. Either we have made Mr. Lloyd George eat his words at last, or once again he is going to keep his promise to the ear and break it to the hope. Which is it?

Builders nowadays have to be very wary in their ways if they would keep clear of trouble from one or other of the local authorities by whom they are surrounded and hampered. A recent case at the Old-street Police-court (*Times*, July 19) shows how easy it is to fall in with a summons and a fine. A firm of contractors had been employed by the London County Council or the education authority to build a new school, and they put up a hoarding. But they did not first apply to the borough council of Stepney, within whose jurisdiction the work was being done, for a license to erect that hoarding, as they should have done under the Metropolitan Building Act, 18 and 19 Vict. cap. 120, and so they were summoned. Their defence was that the L.C.C., especially when acting as the Education Authority, was, to put it colloquially, a "bigger bug" than the Stepney Borough Council, and so their leave was not needed, though it is safer to follow the statute. But the magistrate pointed to the statute, which he thought was not overridden by the Education Act or by the official authority of the L.C.C., and so he imposed a fine with costs, and was willing to state a case if our local wiseacres wish to spend some more ratepayers' money over this pretty point.

"The Land for the People" is one of the world's oldest cries. It was heard in ancient Rome from the agitators of that day, and was doubtless well known in Egypt and Babylon. It has always been the last resort of demagogues from cities on the make. Now we have Mr. Ure on the warpath down in Somerset. His remedy is, of course, to adopt the Scottish Land Act. One answer to the proposal is that, even in his own Scotland, farmers are now flocking to Canada more and more when they are not picking up bargains in Essex. Then as to labourers' cottages. This is, of course, an entirely economic question, twisted out of all its meaning for political purposes. Suitable cottages cannot be built, except at a loss, for the rents obtainable. So Mr. Ure says the labourer's wages must be increased, and his rent must be cut down to make a margin of comfort. Yes; but who is to pay? The ideal is all right; it is the working out that fails. Meanwhile, to cheapen land, we have the Increment Value Duty, etc., and to encourage its quick transfer, the higher stamp duties! So the economic problem is to be solved by the sword of pushing politicians who do not know what they are talking about!

A Ministry of Fine Arts has, of course, been refused by the Government. Mr. Lynch asked the Prime Minister on Monday whether, having regard to the growing interest in art throughout the nation, and in view of the fact that the encouragement of art and the care of art treasures were now left to a number of separate bodies, such as trustees of galleries and various official boards and departments, he would consider the advisability of establishing an office whose function should be to control matters connected with the fine arts, and which should be directed by a Minister responsible to Parliament.—In the absence of Mr. Asquith, Mr. Lloyd George briefly and bluntly replied: "My right hon. friend does not think that this is a practicable suggestion." So once again we must all set to work to make this or any other Government understand that the practicability of the proposal has long been proved in France, and the general public that are not asking for money to put into the pockets of lucky politicians appointed to fat posts under Insurance Acts and Land Valuation schemes, but for something that will add to and develop the real wealth of the country and do more to promote the real betterment of the people than half the social and political legislation of the past fifty years.

America is waking up to the facts which as yet fail to impress Mr. Asquith. At the recent National Drainage Congress at St. Louis, a Bill was adopted for the creation of a National Department of Public Works. Speaking thereon, Mr. Isham Randolph, a well-known American engineer, said: "This great government of ours needs a new department, the cabinet a new portfolio. Our national defence is cared for by two departments, each headed by a secretary—war and navy. Statecraft has its portfolio. The vital importance of agriculture is recognised, and the farmer has a seat in the national council. Our fiscal system is administrated by the secretary of the treasury. Through the postmaster-general, our President keeps in touch with the needs and accomplishments of our postal service. An attorney-general represents the strong arm of the law, and labour has a voice in all of the intimate councils presided over by the head of the nation; and the secretary of the interior looks after the nation's wards, and is a watchful guardian of what is left of the public domain. But what of our public works? Who cares for them? The answer is that they are parcelled out among the departments, the chiefs of which have enough resting upon them to burden the greatest minds in the right discharge of the duties which are legitimately theirs. Public buildings come within the jurisdiction of the secretary of treasury. Why? Is a mind trained in the school of finance peculiarly fitted to pass upon architectural design or structural fitness? We need a national department of public works, and its executive head should be a member of the President's cabinet."

The Chicago Architects' Business Association has passed resolutions protesting against leaving the City of Chicago's interests in the railway terminal project entirely in the hands of John F. Wallace, the engineer selected by the council railway terminals committee. "We have no criticism to make of Mr. Wallace," said George W. Maher, of the association. "We have urged the appointment of a commission instead of one man, and we wanted an architect on that commission. Chicago is a victim of too much engineering and too little architecture. This is evidenced by the elevated roads and the bridge construction, which have defaced city streets with ugly steel structures when ornamental ones might have served purposes equally useful. Such a question as the railway terminal, with its important and permanent effect on the future beauty of Chicago, should only be placed in the hands of an engineer for advice when he is co-operating with architects to care for the ornamental features."

The Sites Committee of the Senate of the University of London has—we think, wisely—again declined to be saddled with the £375,000 site offered by the Duke of Bedford, which was valued by the L.C.C. at £125,000. As the result of further correspondence between the University authorities and Lord Haldane, in the course of which the latter intimated he was willing again to "try to interest certain donors" if the Senate would pass a resolution approving of the acquisition of the Bedford site, a meeting of the Sites Committee was held last Friday, and a resolution recommending the adoption of the Bedford £375,000 site was discussed for two hours. Finally the rushing resolution was withdrawn, and it was decided to postpone further action until the London County Council has been taken into consultation. To-day's extraordinary meeting of the Senate for the purpose of adopting the scheme will not, therefore, be held. From the first we have expressed our belief that the site is entirely unsuitable, and we believe our opinion is shared by the majority of those most concerned. If Bloomsbury is preferred for the new location of the University, a far better site and scheme was suggested and illustrated by Mr. D. Barclay Niven in the BUILDING NEWS of March 22, 1912, which would combine a great Metropolitan improvement, give better access to the British Museum, and insure the fullest accommodation and a fitting building for the University of London.

The inability of the Corporation and citizens of Dublin to decide upon the site and cost of a municipal gallery of modern art is endangering the splendid gift of modern masterpieces which Sir Hugh Lane has offered to the city. In a letter which the Lord Mayor received last Friday Sir Hugh Lane says:—"I intend to dispose to other public galleries the considerable group I [illegible] the best

meeting of the corporation is not satisfactory. I am sick of hearing that one of the most beautiful and remarkable buildings of modern times—namely, Mr. Lutyens's Bridge Gallery—is considered an extravagance, considering the amount of work it will give to Dublin workmen for at least two years, and the attraction it will be in the city to all visitors, quite apart from its influence on Dublin students. It would set a standard for Irish architects to work up to." With that opinion every reader who has before him our illustration of the Gallery in our issue of the 4th instant will heartily concur, and hope that common sense may yet guide the counsels of the Dublin Corporation. Unfortunately, the acrimonious debate at the Council meeting on Monday hardly favours that expectation.

We are doubly glad to hear from the Law Land Publicity Department, 30, Norfolk-street, Strand, W.C., that it has let a portion of Central House, Kingsway, to Messrs. Robert Kearsley and Co., Ltd., the well-known varnish and paint manufacturers, Ripon. The Law Land Co. has also been able in the course of the last week to secure two more firms from the City and bring them to Kingsway. This is a striking proof of the truth of our recent statement that Kingsway is fast becoming the commercial centre of London. We are glad we have been instrumental in assisting the letting of these premises by the advertisements which are appearing in these pages, and still more so that they are being occupied by near neighbours of such high standing as the eminent firms mentioned.

We shall be glad if employers of labour will make special reference to our "Situations Wanted" pages whenever opportunity offers. We have had pleasing evidence during the last few weeks that we are doing good. It was time! Only last Friday a plasterer out of work, having been to a Labour Exchange and finding no work there, went home to his house in the Finsbury Park district and committed suicide by taking poison. These things ought not to be; and our earnest hope is to be able to diminish such cases. Employers and employed alike, who have proved the uselessness of the Labour Exchanges, will find our pages the best means of intercommunication; and we are sure that the employer, if he will help us, will help himself by the natural attraction of men wanting work to the best Building paper.

The Lords of the Treasury have appointed Lord Montagu of Beaulieu to be a member of the Road Board, in succession to the late Sir Charles Rose, Bart. Lord Montagu is the founder and editor of the *Car*, and has written a great deal on automobilism and on other forms of sport. He should be able to stir up his colleagues to some purpose. They need it!

A workhouse infirmary is about to be built at Eye, Suffolk, for the Hartismere Board of Guardians. Mr. A. J. Gibbons has taken the contract at £15,843, and Mr. J H Mickleburgh, of Norwich, is the clerk of works.

The Bernard Wilson Memorial Church, St. James, Milton, Portsmouth, is to be consecrated by the Bishop of Winchester to-day (Friday), at 11 a.m. The church has been built from designs by the late Mr. John Oldrid Scott, F.S.A., and was illustrated in our issue of August 30, 1912. The contractors are Messrs. Langley and Co., of Crawley.

THE LONDON COUNTY COUNCIL.

At the weekly meeting on Tuesday of the Council, the Establishment Committee reported that they had decided that the elevations to the internal areas in each of the sections A and B of the new county hall shall be faced with white glazed bricks instead of with ordinary stock bricks, at an additional cost estimated at £9,500. They also decided that the elevations to the internal areas in sections C and D of the new building shall be built in white Suffolk bricks, instead of the ordinary stock bricks, at an additional cost estimated at £1,100. The architects acquiesce in the adoption of this course. The cost will be met out of the sum provided for extra works in the contract for the construction of the superstructure.

On January 21 last the Council approved in principle the erection of dwellings on the first section of the Tabard-street area, and sanctioned expenditure of £1,000 for the necessary preliminary work. The working drawings, specifications, and bills of quantities will shortly be ready, and the Housing Committee recommended that tenders for the erection of dwellings on the first section of the area be invited from selected firms, and that the chairman or vice-chairman of the committee be authorised to open during the summer recess such tenders as may be received for the work.

The Housing Committee further reported that their attention had been drawn to the proposed erection by the Lewis Trustees of working-class dwellings in Leader-street, Chelsea. It appeared to the committee that the arrangements proposed for the internal ventilation of the dwellings should be governed by the provisions of the Housing, Town Planning, etc., Act, 1909. Under section 43 of the Act referred to, the erection of back-to-back houses is declared to be unlawful, but the Act does not prohibit the erection or use of a tenement house in which the tenements are placed back-to-back if the medical officer of health for the district certifies that the several tenements are so constructed and arranged as to secure effective ventilation of all habitable rooms in every tenement. The Housing Acts give no definition of back-to-back houses, but a reasonable definition would appear to be "a house or letting having one side only open to the external air." If this definition be accepted, a large number of the tenements in the proposed dwellings must, the committee think, be considered as back-to-back, and in any case the committee are advised that the general provision of through ventilation to the tenements is unsatisfactory. It remains to be seen whether the tenements in question can be regarded as "back-to-back" within the meaning of section 43 of the Act of 1909, and whether in that event the district medical officer of health is prepared to certify that, in his opinion, effective ventilation will be secured to all the habitable rooms. In the event of the medical officer issuing such a certificate, it does not appear that any action in the matter can be taken by the Council under the Act, but in the meantime the committee propose to make representations to the Chelsea Borough Council that the type of planning proposed is not such as will provide the best means of through ventilation, or result in the provision of dwellings on the best sanitary principles.

The Local Government Committee, reporting on a recent decision of the House of Lords that sewers, whether overground or underground, are rateable wherever the occupation of them is "valuable" within the meaning of the authorities dealing with rating, remarked that this decision raises questions of considerable importance. It seems clear that the county rate and the rates of most metropolitan boroughs will be increased, while the rates of other London rating authorities will be decreased, owing to the increase in rateable value. Further inequalities in rating will thus be produced, and a complete change of rating practice is involved. They recommended that the President of the Local Government Board should be asked to receive a deputation with a view to ascertaining whether the Government will introduce a Bill in the next Session of Parliament to secure that all sewers below the surface of the ground shall continue to be exempt from rating, or will afford facilities for the passing of a private member's Bill on the subject.

The Parks Committee recommended that £2,750 be spent on repairs and renewals at the Avery Hill Winter Garden, which has been closed to the public since January of last year owing to the dangerous condition of the roof. The Finance Committee, however, were unable to concur in the proposal. They pointed out that the winter garden must be regarded purely as a luxury, and was acquired not for its own sake, but as a part of the mansion. They considered that the Council would not be justified in incurring the relatively large expenditure contemplated.

The Council was recommended to approve the widening of Commercial-road East, near Britannia Bridge, at an estimated cost of £25,000, of which sum the Stepney Borough Council has agreed to contribute £2,000. The present width varies from 44ft. to 75ft., and it is proposed to increase the breadth to 80ft. back of the bridge now under construction. Another widening recommended was that of Fulham-road from North End-road to a point near the junction of Fulham Palace-road and High-street. The cost of this is estimated at £19,500, of which the Borough Council has agreed to contribute a third.

The Council were recommended to accept an offer by the Kingsway and Central Estates Co., Ltd., to lease at £2,900 a year for ninety-nine years a site at the junction of Kingsway and Aldwych East, having an area of 7,300sq.ft., and a frontage to either thoroughfare of about 141ft. 6in.

Mr. Sebag-Montefiore asked the chairman of the Improvements Committee whether he could give any information as to the value of the land on the Bedford Estate to the north of the British Museum, which Viscount Haldane had pressed on the London University for its headquarters, and for which a price of £375,000 had been asked. Viscount Peel replied that the L.C.C. valuer had reported to the Higher Education Sub-Committee in March, 1912, that the value of the site of the suggested headquarters did not, in his opinion, represent much more than a third of the price asked. Mr. J. W. Gilbert, the chairman of the Education Committee, was asked by Viscount Peel whether his attention had been called to a report that the Sites Committee of the Senate of London University had decided to consult the County Council before recommending a site to the Senate, and whether any communication on the subject had reached him. Mr. Gilbert replied that no official intimation had been received conveying the decision of the Sites Committee. Mr. Gordon asked Mr. Gilbert whether, having regard to the importance of placing the University buildings in dignified surroundings, he would consult the chairman of the Improvements Committee, so that by the aid of the Council, in co-operation with the Senate and the Treasury, the buildings might be erected on the river site adjoining the new County Hall. Mr. Gilbert said that the chairman of the Improvements Committee would be consulted.

OBITUARY.

The funeral took place on Monday at St. Tudno's Cemetery, on the Great Orme's Head, Llandudno, of Mr. Robert Roberts, of Llican, Llandudno, who was aged seventy-nine years. In his early days Mr. Roberts was a contractor and builder in Llandudno in a considerable way of business. He carried out the widening of the Conway-road, and constructed the Marine-drive round the Great Orme's Head; he built also a number of terraces of houses on the Orme and in other parts of the urban area. He sat on the urban district council for some time, and retired about a dozen years ago.

A carved-oak chancel-screen, erected as a memorial, in St. Margaret's Church, Little Darenth, Kent, was dedicated on Sunday by the Bishop of Rochester. The screen has been specially designed by Mr. W. D. Caröe, F.S.A.

Building Intelligence.

DOUGLAS, I.M.—At Douglas on Saturday, Lord Raglan, Lieutenant-Governor of the Isle of Man, opened the Villa Marina Kursaal, which has been built by the corporation. The Kursaal will accommodate 3,000 persons. Its principal feature is a hall, primarily intended for orchestral concerts, and surrounded by a raised promenade corridor, from which through arched openings visitors command a view of the stage. All round the gallery level are openings giving upon a series of roof gardens. The style is an adaptation of Classical. Messrs. P. Robinson and W. Alban Jones, of Leeds, are the architects. The Kursaal grounds are about eight acres in extent.

EDINBURGH.—Progress is being made with the building of the Usher Hall, the foundation-stone of which was laid by the King two years ago. The contractors are Messrs. Neil Macleod and Sons, of Edinburgh. The architects are Messrs. Stockdale, Harrison, and Sons, and H. M. Thomson, of Leicester, whose design was chosen in competition by Sir Aston Webb, R.A., the assessor, and was illustrated in our pages on August 5, 1910, and August 4, 1911. The style is English Renaissance. After the dome had been finished externally, the work of constructing the plaster ceiling of the hall went on apace, and at present it is in a forward state. The seating in tiers and the orchestra are almost finished. The constructional and decorative work in the entrance halls, main corridors, and crush rooms on the three levels is practically completed. Outside the hall all the heavier scaffolding has been removed from the walls. A beginning has been made with the laying of a broad concrete pavement in front of the hall in Grindlay-street.

IPSWICH.—The reconstructed Baptist chapel known as Bethesda, erected at the junction of Fonnereau-road with St. Margaret's Plain, Ipswich, has just been opened. "Dairy-lane Meeting House" was built upon part of the site in 1782, and was replaced in 1829 by the edifice just demolished, and rebuilt on an enlarged area, till recently partially occupied by shops and houses. The front of the new building is of stone and of Classic type. The pediment, with egg and tongue ornament and carved modillions, supported upon four De Lank Cornish granite columns, with carved Ionic caps of Nailsworth stone, stands out in bold relief. The flight of steps to the portico, and the base of the building, are of red stone, the granite columns are grey, and the main portion of the building is of creamy white stone, with panels and turned balusters of light brown. The joinery of the chapel is wholly in English oak. The baptistery beneath the platform is lined with veined marble. Accommodation is provided for 1,000 worshippers. At the rear of the chapel are three large classrooms and two vestries. The general building contractor is Mr. Geo. A. Kenney, of Ipswich. The architect is Mr. Fredk. G. Faunch, Licentiate R.I.B.A., of Ilford.

LIVERPOOL.—Steady progress is being made with the erection of the new Cathedral, of which the foundation-stone was laid on July 19, 1904, by King Edward VII. The Lady-chapel, the first completed portion of the fabric, was consecrated on June 29, 1910. Within four years' time the choir of the Cathedral is to be opened. Together with the choir, the first transept is being proceeded with, for opening in 1917, when Cathedral services for congregations of from 2,000 to 3,000 will be practicable. The south wall of the choir and the east and west choir walls have attained a height of about 130ft., and the lantern piers over 100ft. The chancel and the Chapter-house are both being roofed in. An impressive view is now obtainable from Hope-street, looking across St. James's Cemetery, ultimately to be bridged over and converted into garden. Mr. G. Gilbert Scott is the architect, and Messrs. Morrison and Sons are the contractors.

WEDNESBURY.—The work of the reconstruction of the public baths is now completed. The whole of the old second-class bath and the old free library have been demolished, and new buildings erected on the site. The old first-class bath has undergone considerable improvements, and will now be used by the second-class bathers. The first-class swimming-bath is a new building, the pond of which is 75ft. by 28ft., and has been constructed in concrete, with asphalt lining and enamelled brickwork. The interior finish is of glazed brickwork, dado high, the remainder in selected buff bricks. The gangways are of red Ruabon tiles, and the coping is formed with terracotta blocks, with scum-channel immediately under same. Dressing-room accommodation is provided by separate boxes, the floors of which are of granolithic paving. Eighteen slipper baths are provided. A portion of the old library has been converted into offices for the officials of the education authority. The exterior of the building is of red brick and Darley Dale stone. The work has been carried out by Messrs. John Guest and Son, of Amblecote, Stourbridge, under the supervision of Messrs. Scott and Clark, architects, Wednesbury and Tipton.

The new Sunday-schools which have been erected at the rear of Zion United Methodist Church, Kingswood, Bristol, were opened on Saturday. Mr. W. H. Dinsley was the architect, and Mr. Brier the builder. The outlay, including alterations to the chapel, has been £6,000.

As a result of a report by Messrs. Blackburn Starling and Co. on the condition of the fine tower and spire of St. Mary's Church, Whittlesea, the churchwardens have decided to obtain a further report and estimate from some other firm of builders who were qualified to undertake the special work, and then appeal to the public for the necessary funds to carry out works of restoration and repair.

At the Wesleyan Conference on Saturday, Sir Robert Perks reported on the present position of the Westminster New Buildings Trust. Part of the estate had been lying idle for sale, and they had suffered from the present depreciation in the value of land. Now that Westminster Hospital had been sold the two eastern towers could be built, and the original designs of Messrs. Lanchester and Rickards completed.

The parish church of St. Mary, Southampton, rebuilt from designs by the late Mr. G. E. Street, R.A., is being completed by the addition of the tower and spire designed by that architect. The tower, which has for years remained a stump 50ft. high with a slated capping, is being carried up in yellow stone by Messrs. John Thompson and Co., of Peterborough, the original builders. It will attain a height of 110ft., and the spire will rise to another 75ft. The cost of the works in progress is £8,500.

The number of applicants for the post of county architect to the West Riding of Yorkshire was 101, and the following were selected to appear before the committee last month:—Albert E. Dixon, Lancashire County Council; George E. Dickens-Lewis, Cardiganshire County Council; Frederick J. Horth, Hull Corporation; John Alfred Taylor Houston, Glasgow Corporation; Percy Oates Platts, West Riding County Council; Thomas Sharpe, Durham County Council. Mr. Percy Oates Platts was appointed to the post.

At the last meeting of the Birmingham Board of Guardians a report of the house committee was unanimously approved. The recommendations included in the report were for the erection of a home for boys and a receiving home, and other works at the Summer Hill Homes for the children of the union, at an expenditure of £9,500. There was also a recommendation for the erection of a new laundry, boiler-house, chimney, and other works at the Erdington house of the union, with machinery, at a cost of £12,500.

Structural alterations at Wrexham Workhouse, including the provision of more sanitary workrooms, padded rooms, and larger board-room accommodation, have been in contemplation for some time past, and the guardians discussed on Friday two rival schemes. The smaller was variously estimated to cost from £300 to £1,000, and the larger from £2,500 to £3,000. While the former, being less acceptable to the Local Government Board, would have to be provided out a five years' loan the cost of the latter could be spread over a period of thirty years. A committee recommended the larger scheme, but advocates of the other were in the majority. Eventually the whole matter was referred back to the committee.

PROFESSIONAL AND TRADE SOCIETIES.

CAPE INSTITUTE OF ARCHITECTS.—The thirteenth annual report of the Cape Institute of Architects states that nine new members have been elected during the year and one has resigned. The membership now consists of 31 fellows and 10 associates. The council is establishing rules of practice and a scale of charges which will be acceptable to and recognised by all. For the institute prize for measured drawings of old work three sets were sent in: by Messrs. F. M. Glennie, G. W. Cox, and F. W. Mullins. The subject set this year was four old Dutch doors and fanlights. The council consider that the work shown by all was good, the first place being awarded to F. W. Mullins, whose selected doors are: Groot Schuur, back stoep; Castle (2 large hall and another; No. 96, Strand-street. Mr. Glennie shows a very fine specimen from the Normal College. The council will have these reproduced in portfolio form in conjunction with the drawings submitted last year. The council have sent out circulars to all practising architects—about 75—in the Cape and Orange Free State Provinces asking them to co-operate in procuring more satisfactory conditions for public competitions by refraining from taking part in any, the conditions of which the council may certify as being unsatisfactory. Twenty-two members and eight non-members have agreed to do this, and two members and two non-members have agreed conditionally—thirty-four in all. The original subscriptions provided in the rules were reduced in May, 1907, on account of the depression then prevailing. They have now been again raised, and the treasurer has thus been enabled to show a balance on the right side, amounting to £44 12s. Mr. F. K. Kendall, F.R.I.B.A., has been elected as president in succession to Mr. Arthur H. Reid, F.R.I.B.A., and the hon. secretary and treasurer is Mr. E. Austin Cooke, of 6, Church-square, Cape Town.

THE NATIONAL FEDERATION OF BUILDING TRADES EMPLOYERS OF GREAT BRITAIN AND IRELAND.—The half-yearly general meeting of this federation will be held at the Trocadero Restaurant (Balmoral Room), Piccadilly-circus, London, W.C., on Wednesday next, July 30, at 10.30 in the forenoon, to consider the following business:—(a) Finance Act valuations: Report of interview with the Chancellor of the Exchequer. (b) Form of contract: (1) Proposals of sub-contractor re agreed draft form of sub-contract; (2) proposals of R.I.B.A. for amending clauses 20 and 21 of the agreed form. (c) Consider: (1) The situation created by the recent strike of plasterers in London; (2) the action of the operatives who are parties to the conciliation scheme in striking before submitting the disputes to the Conciliation Boards. (d) Control of trade conditions: (1) Work of the sub-committee; (2) result of interview with the Light Castings Association; (3) completion of inquiry by Industrial Council on the observance of industrial agreements. (e) The practice in regard to opening tenders. (f) Letters from the National Association of Master Heating and Domestic Engineers re domestic supply services. (g) Letter from the University of Sheffield re building instruction. (h) Communication from the Waterways Association.

LONDON MASTER BUILDERS' ASSOCIATION.—The ordinary meeting of the council was held on the 17th instant at Koh-i-Noor House, Kingsway, W.C., the chair, in the absence of the president, being occupied by Mr. Edmond J. Hill, junior vice-president. Reports of the special committee were received and instructions issued thereon. Correspondence relating to matters of great importance to the trade was considered. A considerable number of new members were elected.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.—The Board of Architectural Education announce that the designs submitted by the following students who are qualifying for the final examination have been approved:—Subject VIII.: Design for a Carriage Entrance, Mr. P. D. Bennett,

Subject IX.: Design for a Bank, Messrs. H. L. Charles, W. T. S. Foster, E. Fincham, W. R. Davison, J. E. Marchinton, H. E. Crossland, E. R. Frankland-Bell, I. Omar, J. O. Cheadle, E. A. L. Martyn, H. F. Chandler, R. Lone, S. G. Soper, G. P. Stainsby, H. Bagenal, W. G. Knight, J. W. Bull, G. Bennett, A. Nisbet, J. J. Nathanielz, C. H. Wright, H. T. Cooksey, C. H. Woodhouse, C. Ripley, J. O. Thompson, T. T. Jenkins, B. Newboult, E. R. F. Cole, A. Thorpe, O. Newbold, C. H. James, A. Silcock, V. Dyson, L. Foster, R. A. Barber, A. J. Sparrow, H. Andrew, J. K. Currie. Subject X.: Design for a Monument Containing One or More Fountains, Messrs. R. Braine, W. W. Locke, A. S. Burnett, F. Williamson, A. F. Kaltenbach, G. E. Charlewood, H. J. Tebbutt, H. Dicksee, F. A. Addey, F. Jenkins, R. S. Dixon, R. S. Wallace, J. S. Hodges, J. E. Lutyens, B. A. Miller, E. C. Davies, R. H. Philp, A. F. Hooper, J. Macgregor, J. C. Fowell, F. O. Lawrence, G. Davidson.

ROYAL ARCHÆOLOGICAL INSTITUTE.—The annual meeting of this institute is being held at Exeter. It was opened on Tuesday, when the members, about one hundred in number, were received by the mayor and corporation in the picturesque Guildhall. Sir Henry Howarth, the President, acknowledged the cordial welcome. In the afternoon the members went by special train to Chard Junction, and thence by road to Forde Abbey, a finely-preserved Cistercian foundation, now a dwelling-place. Mr. Harold Brakspear, F.S.A., described the Mediæval remains and Jacobean alterations. On the return to Exeter a garden-party was given by the sheriff of the city in Rougemont Gardens, the grounds attached to the ruins of the castle built by Earl Baldwin. On Wednesday the members enjoyed a long motor-car tour to some of the principal places of interest within reach of the city on the eastern side, including Cadhay House, Ottery St. Mary Church, Awliscombe Church, Hembury Fort, and Broadhembury Grange. At the Royal Albert Memorial University College in the evening, Mr. W. St. John Hope, F.S.A., read a paper on the architectural history of Exeter Cathedral.

SEWAGE-DISPOSAL OF THE FUTURE.—The annual summer conference of sewage-works managers was held at the town-hall, Stoke-on-Trent, on Saturday. Mr. J. D. Watson, sewerage engineer to the Birmingham, Tame, and Rea Drainage Board, presiding, referring to the general question of sewage treatment, said the lines on which they must progress were in the direction of keeping their bacteria-beds and tank effluents as free from solids as possible. The Potteries, he said, had always been known for good sewage-works, and, as an instance, the up-to-date character of the Hanley Works had been referred to at a conference he attended on the question of sewage-disposal in New York, to illustrate one of the subjects under discussion. He thought the capital expenditure of a quarter of a million on sewage in the Potteries practically £1 per head of the population—was not a high figure compared with most big towns. When he was called in by the municipal authorities in New York some time ago to advise them on the question of sewage-disposal, their scheme was for an expenditure of twenty million pounds for a population of eleven millions.

THE UNIVERSITY OF LIVERPOOL.—The following are the examination lists, July, 1913:—Faculty of Arts, School of Architecture, Degree of B.Arch., Second Examination: G. Davidson, R. S. Dixon, F. O. Lawrence. Certificates in Architecture.—First Class: H. C. Bradshaw, G. Davidson, R. S. Dixon, F. O. Lawrence, B. Newboult, A. R. S. Shibley, A. J. K. Todd, A. Wilson. (Exempted from Intermediate, R.I.B.A.) Second Class: O. Newbold, D. P. Trench. Holt Travelling Scholarship, £50: H. C. Bradshaw. Additional Holt Travelling Scholarship, £35: R. S. Dixon.

Mr. Philip Edward Pilditch, L.C.C., architect, of Pall Mall East, S.W., has been appointed to the Commission of the County of London

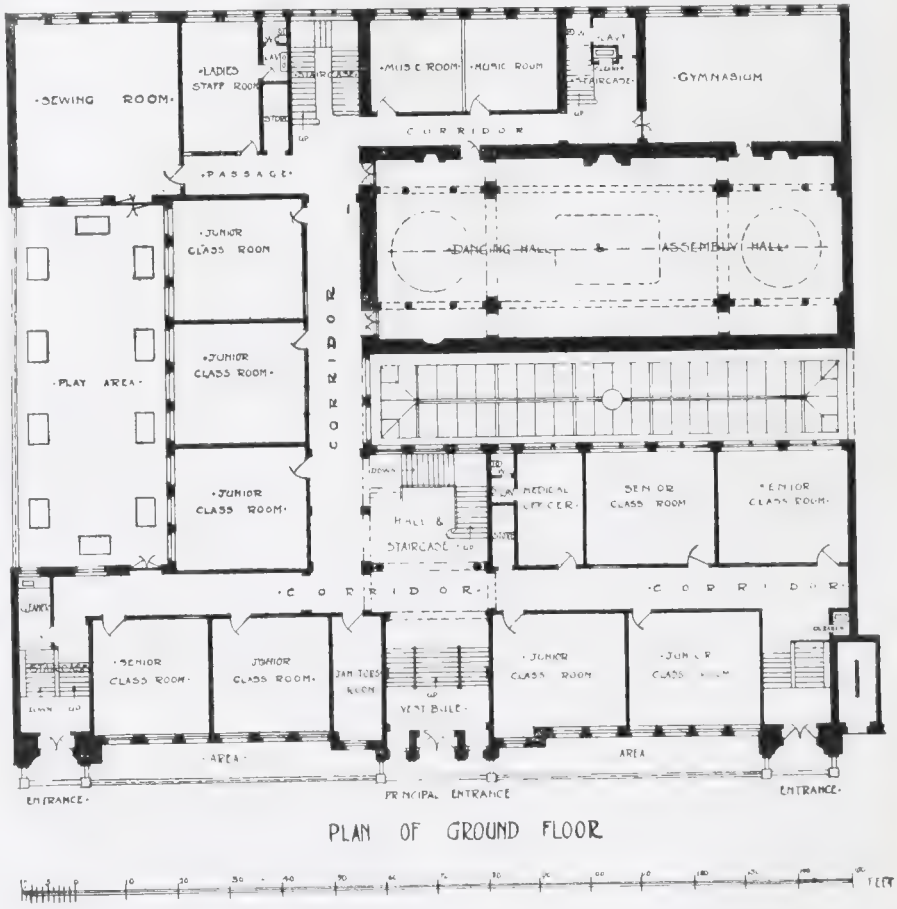
Our Illustrations.

THE DEVONPORT MUNICIPAL BUILDINGS.

We fully illustrate, in two double-pages, the selected design, by Messrs. Ashley and Newman, of 14, Gray's Inn-square, London, W.C. Our review of the competition will be found in our first article.

EDINBURGH LADIES' COLLEGE.

The school is arranged on four floors and a basement floor. On the latter are arranged the cloakrooms, drying-rooms, bicycle-rooms, luncheon-room for juniors, matron's room, lavatories, heating-chamber, coal-store, etc. As the existing school is still occupied, and must continue until the new part is finished and ready, the portion of the site to be operated upon now is delineated on the drawings on the left side of the total frontage. The whole area to be ultimately comprised in the new school has a frontage of 160ft., with a depth of about 140ft. For the entire scheme, four staircases are provided, each extending practically from the basement to the upper floor. The principal staircase in the centre of the front building will be constructed in a rectangular area, flights of steps being carried round an open well on three sides. It will be well lit, both by side-windows and a large cupola. The entrance-hall and staircase will be treated in a liberal manner, with appropriate architectural detail. The total accommodation of the building will be for about 850 scholars. The area of each floor will be sub-divided for class-rooms, sewing-room, examination-hall, singing-room, chemistry and physics rooms, with optical and preparation room; art-rooms and photographic accommodation, also lecture-room for domestic science, with kitchen and laundry adjoining. A space is set apart for a small residence consisting of parlour, bedroom, bathroom—all for general instruction in housewifery. The external walls will be of stone, and the interior walls of white-glazed brick. The corridors will be of "Terrazzo," with the walls lined with glazed tiles to dado height. The heating and ventilation have received special consideration, and are each on the most modern system. The main façade is of Classic design, freely treated; the centre portion is slightly projected, and will be relieved with a composition of Ionic columns supporting a massive pediment, in the tympanum of which will be carved the arms of the Merchant Company. The total cost of the first section is expected to be about £25,000, and for the whole works the sum of £45,000 is expected to be required. The architect is Hippolyte J. Blanc, R.S.A., Edinburgh. We give an elevation, plan, and detail of the front to a larger scale.



PLAN OF GROUND FLOOR

EDINBURGH LADIES' COLLEGE, QUEEN STREET.
Mr. Hippolyte J. Blanc, R.S.A., Architect.

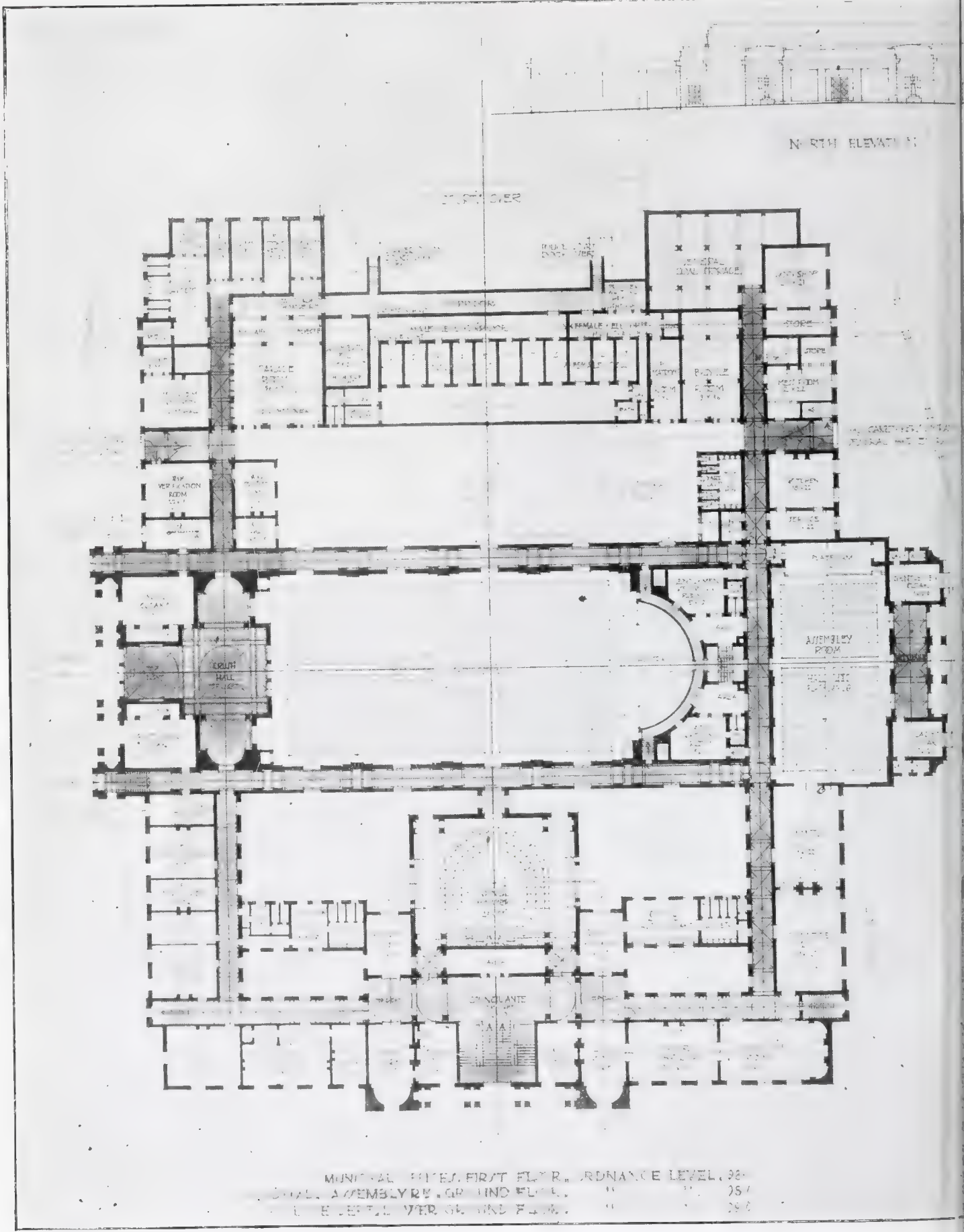
THE PRELIMINARY DESIGN FOR THE PROPOSED NEW LAMBETH BRIDGE.

DETAIL OF DECORATIVE METALLIC TREATMENT.

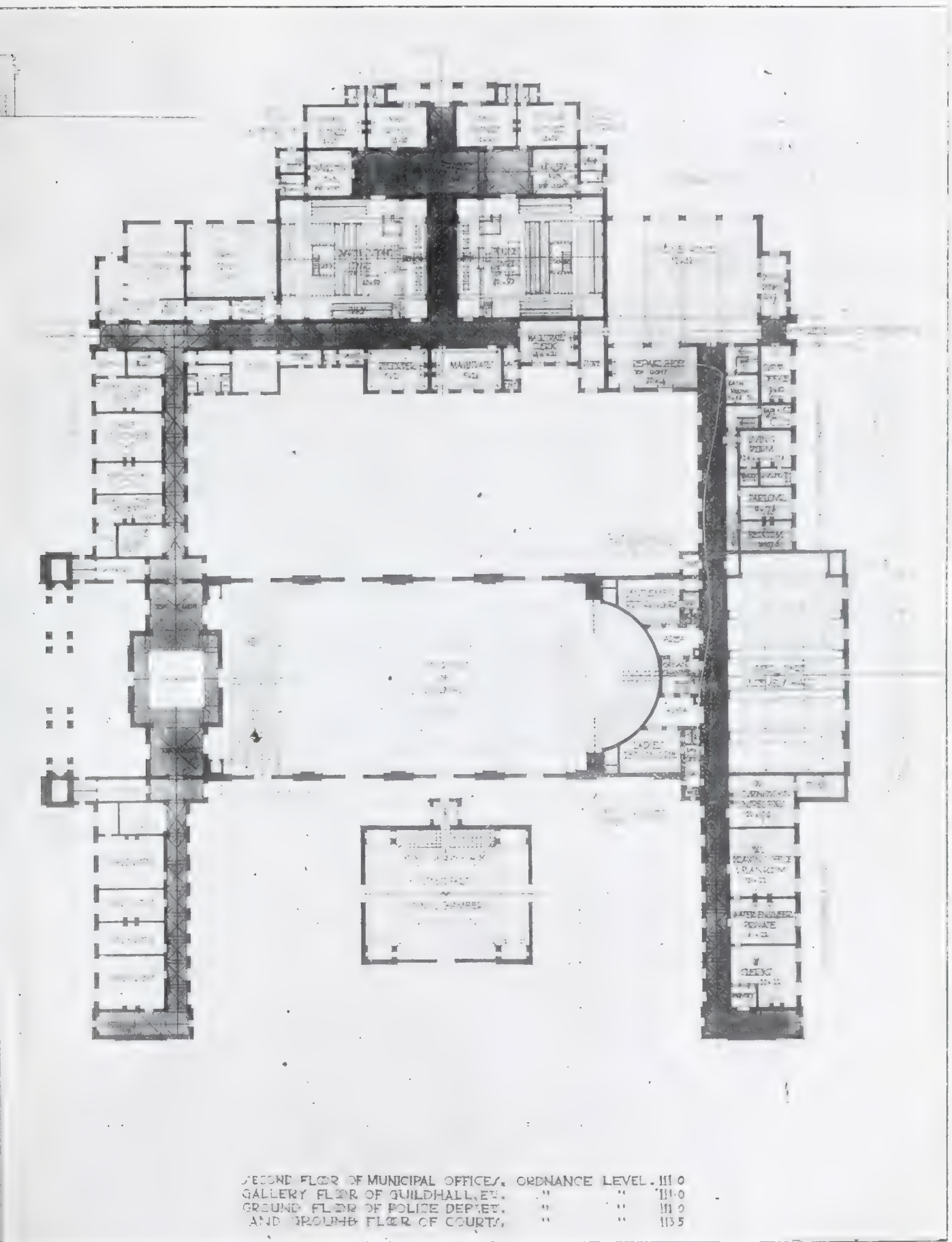
On page 107 we illustrate the preliminary design prepared for the proposed new Lambeth Bridge, the Bill for which the Select Committee of the House of Commons have thrown out. The design was prepared by Mr. W. E. Riley, F.R.I.B.A., Superintending Architect to the London County Council. The detail of the proposed decorative metallic treatment shown in our plate bears witness to a well-considered attempt to avoid the thin, featureless appearance of most metal bridges, and would certainly have been a vast improvement, every way, on the structure which the friends of an obstructive faction seem resolved to perpetuate indefinitely.

Princess Alexander of Teck visited Margate on Tuesday to unveil a memorial tablet to King Edward VII in the new wing of the cottage hospital. The honorary architect to the hospital is Mr. W. J. Mercer, J.P.

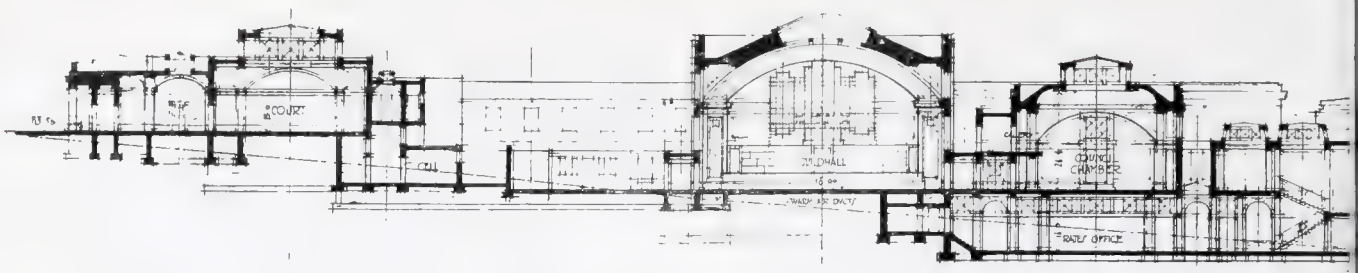
The new premises of the Norfolk and Norwich Eye Infirmary in Grove and St. Stephen's roads, Norwich, were opened on Wednesday week by the Duke and Duchess of Norfolk. The buildings have been transformed at a cost of £1,200, from plans by Mr. E. T. Boardman, F.R.I.B.A., of Norwich.



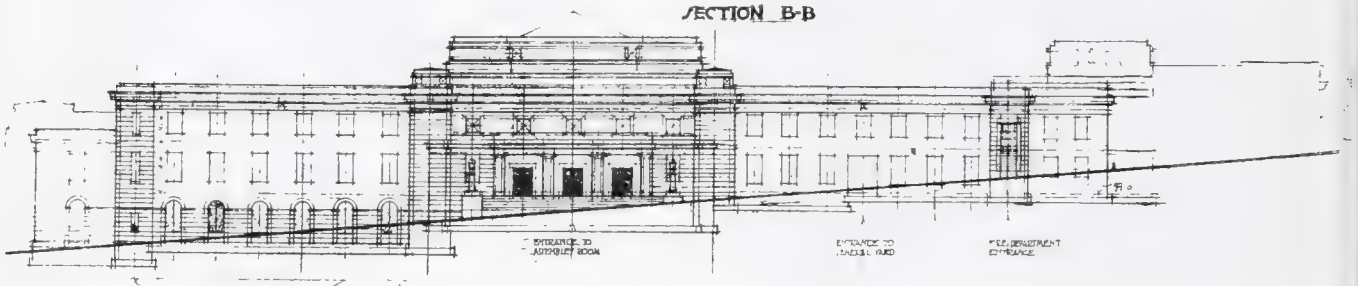
DEVONPORT MUNICIPAL BUILDINGS COMPETITION: SELECTED



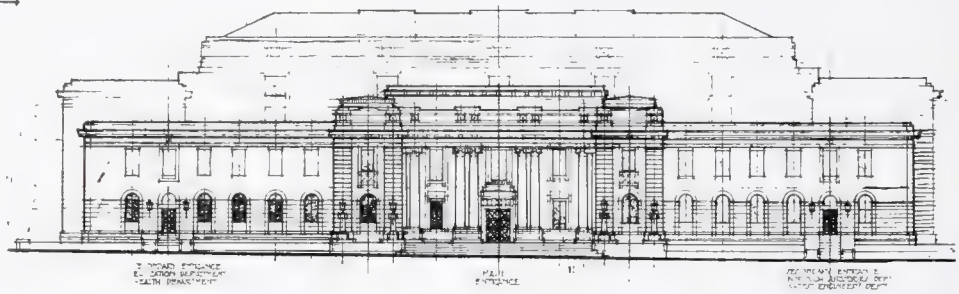
SIGN.—Messrs. H. V. Ashley and Winton Newman, F.F.R.I.B.A., Architects.



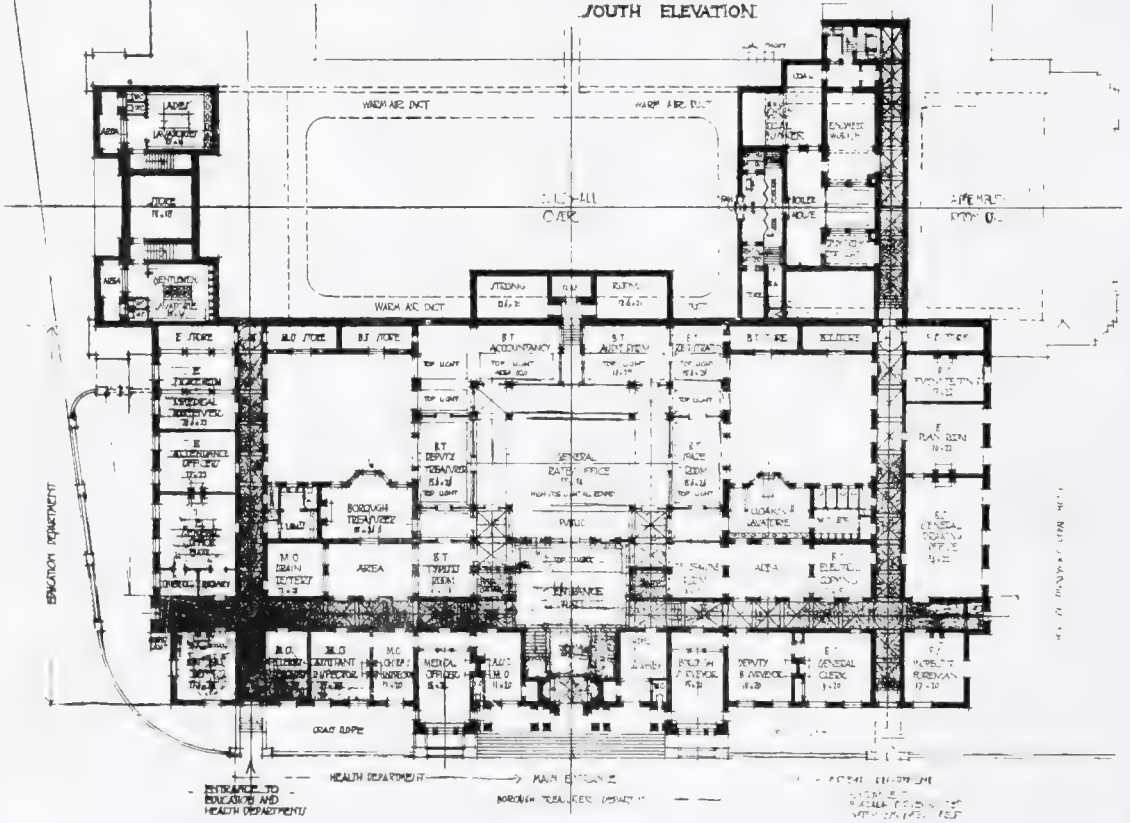
SECTION B-B



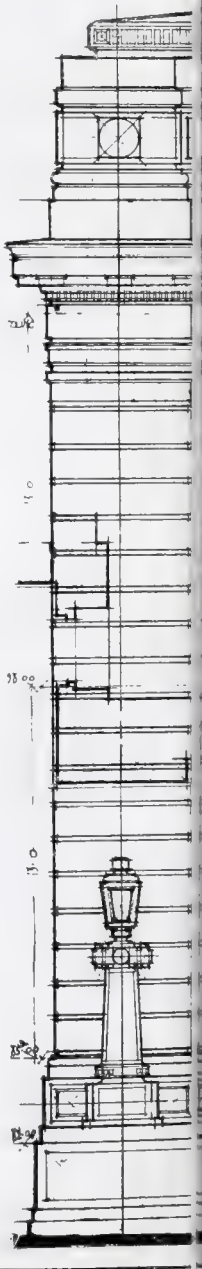
EAST ELEVATION



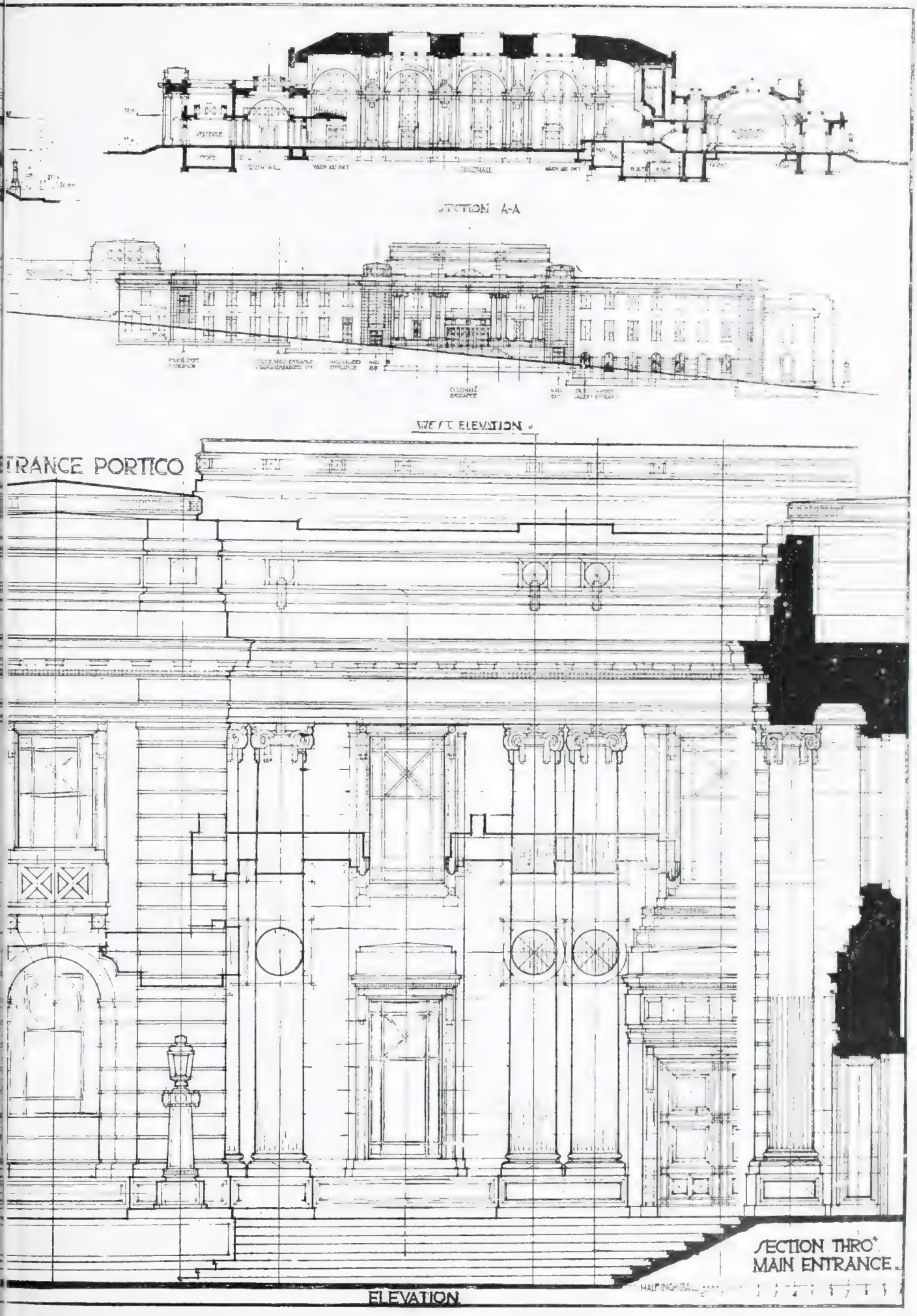
SOUTH ELEVATION



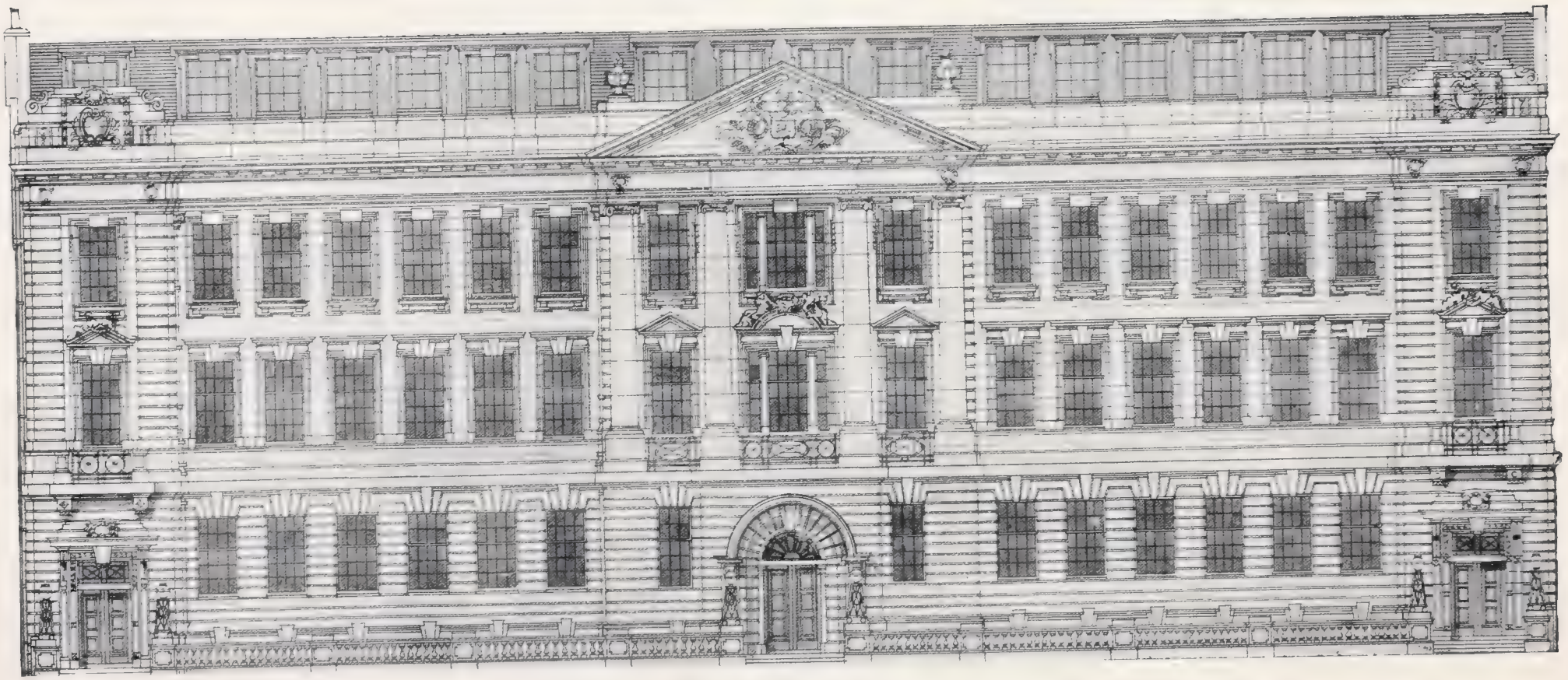
GROUND FLOOR
OF MUNICIPAL OFFICES.



MAIN



ESIGN.—Messrs. H. V. Ashley and Winton Newman, FF.R.I.B.A., Architects.



EDINBURGH LADIES' COLLEGE: QUEEN STREET FAÇADE.

Mr. HIPPOLYTE J. BLANC, R.S.A., F.S.A. (Scot.), F.R.I.B.A., Architect.



THE PRELIMINARY DESIGN FOR THE PROPOSED NEW LAMBETH BRIDGE: DETAIL OF DECORATIVE METALLIC TREATMENT.—Mr. W. E. Riley, F.R.I.B.A., Architect.

COMPETITIONS.

COULSDON. In a limited competition the designs submitted by Messrs. Greenaway and Newberry, A.A.R.I.B.A., of Queen Anne's Gate, Westminster, for the proposed Church of St. James, Coulsdon, near Croydon, have been approved by the building committee.

DEVONPORT MUNICIPAL BUILDINGS.—Mr. Ernest Newton, A.R.A., F.R.I.B.A., the assessor, has just made his award on the designs sent in for the new municipal buildings of Devonport. Eighty-eight designs were submitted, and the first premium of £350 has been awarded to that of Messrs. Ashley and Newman, 14, Gray's Inn-square, W.C.; the second of £150 to Messrs. Harris and Moodie, 8, New-square, Lincoln's Inn; and the third of £100 to Messrs. Knott and Collins, Adelphi-terrace House, Adelphi. We illustrate the selected design this week, and our review of the competition appears on pp. 101-2.

NORTH WALES. The King Edward VII. Welsh Memorial Association of Westgate, Cardiff, require designs to be sent in on September 30 for a £20,000 sanatorium for North Wales, and offer three premiums of £100, £50, and £30. The site is 2½ miles from any railway station. The building is to provide for 154 adults and 30 children, with provision for 100 more patients ultimately, and preferably blocks for about 25 patients should be shown. The site varies considerably in its levels, and is bisected by a road which falls from 409 to 381 in 500ft. The upper part of the site comprises over 13 acres, and the lower part over 17 acres, of an irregular outline. The highest level is 460 and the lowest 340 above datum line. An assessor has been appointed, and the author of the selected design will be elected architect, subject to the usual provisos. The estimate must include clearing the site, architect's fees, quantity surveyor's charges, clerk of works' wages, lithography, and everything else incidental, including hydrants, water-supply from the boundary, laundry machinery, kitchen plant fixtures and fittings, and all other expenditure except furniture. The requirements will, therefore, tax the restrictions imposed by the £20,000 provided. The cost of cartage will be considerable. Drawings to be 1-16th of inch. Two general sections, one elevation at least of each building, and plan of each floor of each building, also block plan, 100ft. to inch. No alternative scheme allowed. Award of the assessor to bind all parties. There is to be a children's block, wards for ambulant patients with cubicles, nursing wards, dining hall, divided into two parts for the sexes; the administration blocks, power stations, and gate lodge. The medical officer to have quarters in the administration block, with a separate entrance.

SUNDERLAND. An assessor is to be nominated by the R.I.B.A. Council to make the awards in a competition which is to be promoted by the Sunderland Town Council for a training college, to be built at a cost not exceeding £15,000.

At the monthly meeting of the Church Building Society, at 7, Dean's yard, Westminster, on Friday, Mr. F. L. Pearson, F.R.I.B.A., was appointed a member of the society's committee of honorary consulting architects in the place of the late Mr. John Oldrid Scott, F.S.A.

The Derwent Valley Railway which unites two branches of the North-Eastern Railway at Foss Islands, York, and Cliffe Common near Market Weighton, has just been opened. It is a single line, and is sixteen miles in length. Mr. E. O. Ferguson, of York, was the engineer, Mr. Joseph Stafford, the resident engineer, and Messrs. Pethick, Dix, and Co., of Westminster, were the contractors.

The Florida State Association of Architects have just held their second annual convention at Jacksonville. The President was Mr. Gedge A. Holmes. The most important discussion related to needed legislation relative to the practice of architecture as a profession. To this end, the Association will endeavour to have a law passed at the next session of the Legislature requiring all applicants to give satisfactory proof of technical ability and experience.

Correspondence.

FAILURE OF CONCRETE ROOF TO KEEP WATER OUT

To the Editor of the BUILDING NEWS

SIR, We wonder if any of your readers have had any experience of the failure of concrete roofs to keep the water out. We have a large engine-house, 90ft. long by 59ft. wide, inside measurements, the outer span of the roof being 61ft. 4in., with a rise of 18ft. This roof is carried by two gable walls and six iron principals, making seven bays of about 13ft. each, with longitudinals at 7ft. centres built into the gables. The roof was built and erected by a contractor who has had experience in roof building. The concrete was made of crushed furnace slag passed through a ½in. mesh, sand, and Portland cement, mixed in the following proportions: Furnace slag 4 parts, sand 1 part, cement 1 part. The concrete was put on 2½in. thick with a layer of expanded metal of 3in. mesh in the middle of the concrete, and the upper surface of the roof was skimmed over with a mixture of spar sand and cement. The water got through this, so another layer of about ¾in. of the sand and cement mixture was put over the whole surface. The water still got through, and cracks appeared all over the roof, especially over the principals. These cracks have been cut out from time to time, and liquid cement has been poured into them, and afterwards painted over with bitumastic solution; the whole roof has also been painted over with two coats of this, and yet, in spite of all, the roof leaks badly when there is any weight of rain. It seems to us that roofs of this kind are better slated; but we cannot put slates on the top of the cement, as the weight would be too great for the principals.

It has been suggested that we should cover the roof with a strong waterproof fibre sheeting; but this is expensive, and would require painting at intervals, and might not last very long.

We should be glad if any of your readers could advise us what is the best to do under the circumstances.—We are, etc.,

THE CLIFTON AND KERSLEY COAL CO., LTD.

Clifton, nr. Manchester, July 21.

The new children's ward which has been added to the North Staffordshire Infirmary at Stafford was opened on Thursday in last week. A new wing has also been added to the out-door home, the total outlay being over £6,000.

The general purposes committee of the Southport Town Council have decided to apply to the Local Government Board for powers to borrow £3,750 to carry out an improvement scheme in Lord-street between London-square and Hill-street.

The new schools at St. James's, Barton, Bristol, which have been built under the direction of the architects, Messrs. Holbrow and Oaten, the contractors being Messrs. Wilkins and Sons, all of Bristol, were formally opened on Friday.

The rector of St. John de Sepulchre, Norwich, recently solicited subscriptions to place a reredos in his church. An anonymous donor has now offered to present a reredos of oak in three panels, having in the centre the Ascension, and on either side the True Vine and the Bread of Life. The Chancellor of the diocese has decreed a faculty for the erection of the reredos.

Mr. Leonard W. King, Assistant in the Department of Egyptian and Assyrian Antiquities in the British Museum, has been appointed by the Principal Trustees to the post of Assistant Keeper in that Department. Mr. King is the author of "Annals of the Kings of Assyria," "A History of Sumer and Akkad," and other Assyriological publications.

At Wednesbury, on Tuesday, the mayor laid the foundation-stone of the new Metallurgical and Engineering Institute which is being erected in Walsall-street by the Staffordshire County Council. The builder's tender for the erection of the premises is £13,468. The building has been designed by Mr. J. Hutchings, A.R.I.B.A., architect to the Staffordshire Education Committee, and the general contractors are Messrs. H. Gough and Son, of Wolverhampton. We illustrated and fully described the building in our issue of June 27 last.

LEGAL INTELLIGENCE

DISTRICT SURVEYORS' FEES FOR SCHOOL BUILDINGS. At [illegible] Police-court, [illegible] Mr. Chester Jones, [illegible] summonses against the Education Committee of the London County Council, [illegible] Works Committee, [illegible] Council, for the contravention of two building [illegible] W. W. [illegible] passed by the [illegible] Mr. [illegible] represented the defendant.—Mr. Edward John Silcock, M.I.C.E., F.S.I., past-president of the [illegible] sample of the mortar taken from the building. A large part of it was almost of the consistency of mud, and the better part was more granular, and the kind [illegible] It did not comply with the terms of the by-law, not being "compounded of good lime and clean, sharp sand [illegible] material." The presence of fine dust and mud in the mortar was very objectionable, as it prevented the mortar from setting, and deprived it [illegible] should be sensibly hard in from four days to a week. The sample he took from the building had been there about a month, and even now [illegible] Cross-examined, witness admitted that his experience was rather with large buildings than with cottages; but when he held the appointment of borough engineer he had to supervise [illegible] unless mortar was mixed with a mill it was not likely to be uniform in quality all over the building; but he examined the mortar from several parts of the walls, in both houses, and [illegible] same. It was of very inferior quality, and in his opinion [illegible] The fact that the houses were to be stuccoed over would somewhat protect them against the weather; but he would not accept that as an excuse for using inferior mortar in the building. Mr. Charles Oldridge, builder, of Norbiton, agreed with the previous witness that the mortar was inferior and not in compliance with the by-laws. As a practical builder, he considered the mortar very bad. Cross-examined, witness said he had never before heard such a suggestion put forward that slaked lime should be used in mixing mortar. People did not, and could not, measure slaked lime. Mr. Seels, assistant surveyor to the district council, gave evidence that he told defendant that the mortar used was very unsuitable for the purpose, and that he could not allow it. Mr. Glen, for the defence, said the defendant had built twenty-two other houses in the same road, using exactly the same materials, the same method of mixing the mortar, and the same proportions as in the present case. He did not suggest that a builder should scamp his mortar because he was erecting buildings for the poor, but he did submit that it was unreasonable to expect as expensive materials when putting up houses of this class as when erecting big property. The Local Government Board had realised the importance of modifying the demands as to materials in the case of small property, and on August 29, 1912, they issued a circular on the question, suggesting that local authorities should meet the [illegible] which they forwarded. He submitted that local [illegible] the Local Government Board evidently desired them to do. Coombe sand was not suitable for [illegible] furnace ashes from the electric-light works and

burnt siftings, which were sharp and hard, and suitable for the purpose, and were generally used in the district. As to the construction of the by-law, a good deal turned on whether the lime to be used was slaked or unslaked. If slaked, then the defendant had complied with it. If the Bench held that it was an unreasonable by-law, then it did not matter whether his client had infringed it or not. Mr. Alexander W. Martin, building inspector for the urban district of Tottenham, said he had inspected thousands of small houses erected in that district, where the by-law was exactly the same as at New Malden. If they got good clean material in the proportion of one to three when the lime was slaked, that was considered sufficient. For this class of property it would be unreasonable to demand that quantity of unslaked lime. Asked to look at the piece of mortar produced by Mr. Silcock, witness said it was not very good, and hardly good enough to be permitted. If it was all like that, he should condemn it. Mr. R. Allsebrooke Hinds, F.R.I.B.A., of Wimbledon, said he was employed by the mortgagees to inspect the houses in Beverley-road, to see whether the builder was putting in good mortar. He examined the buildings carefully, and tested the mortar, and satisfied himself that the average quality of the mortar was such as he would pass if he were called in to survey for advances. He thought the mortar used complied with the by-law as reasonably interpreted, by which he meant three of sharp grit to one of slaked lime. It would be unreasonable to expect that proportion of unslaked lime in any kind of house. Mr. Charles Edward Collis, of the firm of Milestone and Collis, architects, said he was the surveyor instructed by Mr. Stapeley's mortgagees to supervise the erection of the buildings in Beverley-road, and he had charge of the twenty-two houses previously built by the defendant in that road. The two houses involved in the present case were built exactly in the same manner and with the same materials as the others. He had inspected them from the start to the present time, and they were exceedingly well built. He preferred furnace ashes and burnt grit to Coombe sand. Mr. Vincent Davison, architect, formerly assistant surveyor to the district council, said he had practised at New Malden for eighteen years. He had tested the mortar of these houses, and he thought it was very fair mortar indeed. The mortar, on the whole, was hard. The usual practice was to make a ring of approximately a yard of sand, and shoot two bags of lime into it and slake it. There were very few builders in Malden who adopted a different course to that. Nobody used three-to-one unslaked lime. —Mr. Mackenzie: You should not say that, because there was a conviction from New Malden in this court in 1908 on the very point. —Mr. Glen: Assuming that the by-law requires three-to one unslaked lime, is that reasonable or unreasonable? It is most unreasonable. In cross-examination, witness denied that he had had considerable trouble with the district council. Professor Bertram Blount, F.I.C., of Westminster, the author of many pamphlets on the composition of mortar, said he analysed a sample from these buildings sent to him, and found it to contain one part by volume of slaked lime to two parts by volume of aggregate. He had since analysed a second sample, in which the proportions were 1 to 2.9. Both samples, in his opinion, came within the limits laid down of one part to three.—The Chairman: We have been told by the other analyst that some of the samples which he analysed contained proportions of one to fifteen, and, I think, in one case one to nine.—Witness expressed the view that a reasonable proportion of flue-dust was advantageous in the composition of mortar, if it was kept moist until the setting process began to take place. The samples, he agreed, looked dirty; but it was due to their containing a little carbonaceous matter. To insist upon the proportion of one to three of unslaked lime was, in his judgment, an unreasonable requirement, and he should prefer that proportion of slaked lime. Mr. G. H. Woodlands, formerly a member of the Wimbledon Town Council and chairman of the building committee, and manager for Messrs. Holloway Brothers, building contractors, gave evidence to the same effect as other witnesses. After thirty years' experience, he agreed that one to three of slaked lime was the correct way to make mortar. If it was made of one to three of unslaked lime it was too fat, and to so construe the by-law was unreasonable. Evidence was also given by Mr. Edward Buckingham, who has had sixty years' experience as a builder; Mr. Frederick W. Bedford, of Northwood, Middlesex; Mr. John Worsfold, foreman bricklayer to the defendant; Mr. Stapeley, the defendant; and Mr. G. R. Johnson, the freeholder. The Chairman announced that the magistrates found that the by law was good, and that it had not been complied with, and they fined the defendant 40s. and costs. The costs were fixed at 25 guineas, and the Bench agreed to state a case for the High Court.

UNITED STONE FIRMS IN LIQUIDATION. —At the Grand Hotel, Bristol, on Monday, there was a meeting of the creditors of the United Stone Firms, Ltd., Mr. Harry Preen (London), the liquidator, presiding. The liquidator gave a few brief facts relating to the early history of the company. A very complete investigation had been made by himself and his firm, which occupied three months, and a full report dealing with all parts of the business was submitted. Every branch of the business had attention, every quarry had attention, and everything that could be said to inform those connected with the company was duly put forth. The report disclosed weakness, and disclosed in detail reasons for the want of profit, and suggested remedies. Then the directors asked him to assist in reorganising the business and to put into effect suggestions that had been considered. His firm acted from October, 1911. He would deal with the figures, but they must be approximate, as many creditors' statements had not been passed. Unsecured liabilities included some few accounts not rendered, and amounted to about £9,000, which was small, considering the magnitude of the affairs of the company. There were some other claims, including charges by directors, etc., amounting to £1,800, making the total amounts unsecured about £10,800. Then there were creditors whose claims amounted to £32,000. There were sums due to companies, and for liens, etc. He could not give them the exact figures, but he estimated these at about £5,000. There was a small liability for bills discounted. The charge on mortgages and debentures was £335,000. He could not submit to them a statement of affairs, as there had not been time. The last public balance-sheet showed assets £575,000; but it was impossible to say what the fixed plants would realise, though he thought they were very valuable. With due consideration for his responsibility, he felt he could not commit himself to the value of the assets, though he desired to give them all the information he could. His position in that matter was that he was appointed trustee and manager for the Hard Stone Firms. When he took possession, the works were stopped, and a valuation was to be made. The time for that had been extremely short, and he was now engaged in completing existing contracts and keeping the business together. In regard to the future, he was not in a position to make them a definite statement. Until all sorts of investigations had been completed, it was not even safe or desirable for him to make a more definite statement.—After some discussion, the resolution of confirmation of the liquidator's appointment was put and carried unanimously

ROOD-SCREENS IN CHURCHES Sir A B. Kempe, Chancellor of the Diocese of London, heard on Monday an application by the vicar and churchwardens of St. Saviour's, Pimlico, for a faculty authorising the erection of a rood-screen (containing a figure of the Crucified Saviour, with attendant figures of the Virgin and St. John) and a new pulpit in the church. The vicar explained that there was at present in the church a low screen, of the height of a table, with gates, put up many years ago, under a faculty. The new screen would also have gates. There were no "Stations of the Cross," and the services were those ordained by the Prayer-book. The figures on the screen would be erected simply as an architectural decoration. The proposal and design had been unanimously approved by the parishioners in vestry, and no adverse opinion had been expressed by the congregation. The cost would be £340, of which £270 was in hand. A new pulpit, which would harmonise with the screen, had been offered, as the present alabaster one was cracked and much out of repair. The Chancellor had no hesitation in granting the faculty, as no "superstitious reverence" was intended to be paid to these figures on the rood-screen.

LIABILITY TO REBUILD WALL At Shoreditch County-court, on Tuesday, Albert Atelson, timber merchant, of Amhurst-road, Hackney, brought an action against Joseph Blank, a secretary, owner of the house next to his own, to recover £7 10s., half the cost of rebuilding a wall between the two houses. About the middle of last year the wall fell down. Plaintiff's wife said that she went to see defendant, who agreed to pay half the cost of rebuilding. Later, defendant repudiated liability. For the defence, Mr. Robinson suggested that excavations for drainage-work and the carting of heavy materials near to the wall caused vibration. Judge Cluer: Nonsense! "Your honour doesn't know the walls in Amhurst-road," observed Mr. Robinson.—The Judge: The thing I am asked to believe is, if you shoot a load of ballast down, you bring my house down?—Mr. Robinson: If it was a shanty, perhaps it would.—His Honour gave judgment for plaintiff for £4 and costs.

BANK AND LOCAL AUTHORITY.—In the King's Bench Divisional Court, on Friday, July 18, before Mr. Justice Avory and Mr. Justice Lush, Mr. Macmorran, K.C., on behalf of the London City and Midland Bank, moved ex parte for a rule nisi for a mandamus calling upon the Hendon Urban District Council to show cause why they should not approve plans for a branch of the bank proposed to be erected in the district. The point involved, he said, was a very short one. The site abutted on Finchley-road in one direction, and on Golder's Green-road in another, and the local authority had refused to pass the plans, on the ground, as they said, that the air-space stipulated in the by-laws was provided for at the side and not at the rear of the building.—Mr. Justice Avory: Has it ever been held that if you have two fronts you must necessarily have two rears?—Counsel: I think not. It is not contended here that there must be two air-spaces; but I suggest that the matter is the purest technicality.—The rule was granted.

ARCHITECT AND SURVEYOR SUES CANON FOR LIBEL.—Smith v. Streatfeild.—Mr. Justice Bankes, in the King's Bench Division, on Saturday, July 19, heard legal arguments arising upon the jury's finding in this case, and subsequently reserved his judgment. Mr. Justice Bankes on Wednesday last entered judgment against both the defendants for £50. A stay as regards costs was granted to the printers upon the usual terms, and a stay refused in the case of the other defendant.

In the House of Lords, on Wednesday, the Public Rights of Way Bill was read a third time and passed.

It is proposed that the memorial to the late Viscount Wolseley shall take the form of a statue in St. Paul's Cathedral. Subscriptions amounting to about £2,100 have been received in response to the appeal issued by the Wolseley Memorial Committee.

Mr. T. Ekin, one of the Local Government Board inspectors, held an inquiry at Doncaster on Tuesday relative to the application of the corporation to borrow £12,500 for the provision of further plant for the electricity works. The inspector suggested that £11,545 would apparently be ample for the proposed scheme.

An extension of Streatham Common, known as "The Rookery," is now open to the public. The property, which has cost £3,075, comprises about three acres of well-wooded land on the southern side of the common, and includes an Old English garden. The grounds have been laid out from the plans under the supervision of Major Maud, chief officer of the Parks Department of the London County Council.

At the Guildhall, Norwich, Mr. R. G. Hetherington, M.Inst.C.E., has held a Local Government Board inquiry in relation to the application of the council for leave to borrow £575 for the purchase of land required to improve King-street for a length of 61ft. from its present width of 23ft. to 36ft., and also £755 for the purchase and adaptation of Nos. 15 and 15A, Lower Goat-lane, for use as offices and storage accommodation for the Police Force and Fire Brigade.

Among the lecturers who are to speak at the Summer School of Town Planning which is to be held, under the auspices of the University of London, at the Hampstead Garden Suburb, from August 4 to 16, are Mr. E. L. Lutyens, A.R.A., who is lecturing on the New Delhi; Professor Adshead, of the Liverpool University, the first professor of town planning in this country; Mr. Raymond Unwin, architect of the Hampstead Garden Suburb; and other well-nown authorities on this branch of professional work. The Earl of Lytton will be president of the School.

A railway to cost £1,000,000, which is expected to bring about the opening of important industrial centres in the counties of Mayo and Sligo, and will have Blacksod Bay as its terminus, will be begun in September by Messrs. Perry and Co., of Bow. Starting at Collooney, a village where three railways meet, the new line will run along the coast of North Mayo. Except for one section of fourteen miles, where four viaducts 90ft. high and two river bridges will have to be built, the line will be easy of construction. Some 2,000 men will be employed on the undertaking.

PARLIAMENTARY NOTES.

BUILDERS PROFITS AND THE REVENUE BILL.—During the debate on Tuesday over the usual "Massacre of the Innocents," Sir Tudor Walters (L., Sheffield, Brightside), referring to the approaching famine in urban houses, pointed to the necessity for giving adequate time for discussion of the Revenue Bill, so that the scope of the Land Taxes in relation to builders' profits was made quite clear. Such discussion was necessary in order to restore confidence. Once they could get builders, property-owners, and others interested in the building of houses to understand that nothing in land but unearned increment would be taxed it would not matter a jot how much the Opposition whined croaked and velled people would come straight in and invest their money in house building. This matter had become so serious that it could not await another session for treatment. It should be taken in hand forthwith, even if so doing involved the session running into another week.

WATER SUPPLY AND SANITARY MATTERS.

BITTERNE MANOR SEWERAGE.—The Bitterne Main Drainage Committee held their meeting on Thursday evening last week at the outfall works, and inspected the system, which will be handed over to the district council by the contractors next week. The sewage is received at the disposal works into a pump-well 30ft. diameter, and is then lifted by gas-engines into a detritus-tank, from whence it passes on to Dibden slate tanks. The sludge having settled on the slates, the liquid matter is drawn off by means of automatic siphons, and runs into contact clinker-beds, where it lies for a further period of from two to three hours, by which time the effluent is sufficiently clear to be discharged. This is again done by automatic siphons, and the effluent is discharged into the tidal water of the River Itchen. The contractor for the outfall works is Mr. J. Douglas.

COLWALL SEWAGE-DISPOSAL.—The Ledbury Rural District Council have now received the approval of the Local Government Board for the construction of intercepting-sewers and sewage-purification works for the parish of Colwall, near Malvern. The scheme has been prepared by Messrs. Taylor and Wallin, civil engineers, of Newcastle-upon-Tyne and Birmingham, and includes bacterial disposal-works of the most modern type. The estimated cost of the work is about £2,500, and tenders are to be invited for the construction of the works at once.

The Travelling Studentships in Architecture at Manchester University have been awarded to Mr. G. B. Howcroft, B.A., and Mr. W. O. Jones, B.A.

Mr. John William Griffith has been appointed engineer-in-chief to the Dublin Port and Docks Board, at a salary of £750, rising to £1,000, per annum.

Mr. Stanley Matthew, deputy water and borough engineer of Dewsbury, has been appointed assistant engineer and surveyor to the corporation of Chelmsford, at a salary of £150, rising to £180, per annum.

At Monday's meeting of the rural district council of Hinckley, Mr. F. Tuckey, of Earl Shilton, was appointed surveyor of highways, at a salary of £100 per annum, and Mr. M. Roberts, of Castleford, inspector of nuisances, at £120 per annum.

The first sod preparatory to the construction of projected new gasworks at Cleckheaton was cut on Tuesday by the chairman of the gas committee of the district council. The estimated ultimate cost of the works is £57,000; but for the present the expenditure will be restricted to £40,000.

At Bow-street Police-court, on Saturday, on the application of Mr. Sherwin White, Sir John Dickinson appointed Mr. A. L. Guy, F.R.I.B.A., of Gray's Inn, to value the forecourts of certain houses in Green Lanes, Stoke Newington, which are required by the London County Council for street-widening purposes.

A fire-station and Carnegie public library are about to be built for the corporation of Croydon in Brigstock-road, Thornton Heath, at a cost of £7,400 for the station and £4,200 for the library. The scheme has been prepared by the borough engineer, Mr. G. F. Carter, his architectural assistant, Mr. Eric Hodder, being responsible for the design. The building will be a simple type of Renaissance, and will be faced with red bricks, Portland stone being used for dressings.

Our Office Table.

Reporting to the Westminster City Council on the question of the entrance to the Mall at the Trafalgar Square end, the improvements committee state that the Joint Committee, consisting of representatives of H.M. Office of Works, the London County Council and the Westminster City Council, have had before them several schemes for the completion of the improvement. One of these involves a net estimated cost of £115,000. The plans and details of this scheme have been approved by the Westminster City Council's representatives, and they recommend the council to express their willingness to contribute a sum not exceeding £38,333, being one third of the estimated cost. The plans, which were submitted to the Westminster City Council last evening, show a roadway 90ft. in width, to be formed by the demolition of the Phœnix Assurance Office and of a waterproof dealer's shop. No architectural details for the treatment of the exposed flanks of the premises which will adjoin the widened opening have been settled as yet.

Writing to the *Times* as to works of repair in progress upon the timber roof of Westminster Hall, Mr. W. D. Caröe, F.S.A., mentions that in 1885-6 he was engaged under the late J. L. Pearson, R.A.—in examining exhaustively into the history and condition of the fabric. Mr. Caröe adds: "I was within an ace of coming to grief in the historical explosion of 1885, having vacated by barely five minutes a scaffold upon which I was working, and which was blown to pieces. The explosion not only swept clean the roof timbers, but blew the slates off a large part of the roof. As a consequence, the ugly purple Welsh slates were discarded and the present more harmonious ones substituted for them, although Mr. Pearson desired to revert to the ancient covering of lead. At the same time, the disfiguring dormers were, to the great gain of the building, suppressed." Mr. Caröe expresses a doubt whether the present extensive operations under H.M. Office of Works are really necessary, for when he examined the roof twenty-seven years ago there was no dry-rot. Should there be any fresh symptoms of decay, he attributes it to the smoke-polluted and sulphur-charged atmosphere of Westminster.

The Birmingham City Council are shortly to be asked to sanction their fourth town-planning scheme. Pioneers in municipal town planning, the council have now three important schemes under way—Harborne and Quinton, East Birmingham, and North Yardley; and at the next meeting of the council the town-planning committee will ask for permission to apply to the Local Government Board for authority to prepare a town plan for South Birmingham. This will be by far the largest of the committee's undertakings, comprising an area of 8,000 acres—nearly a fifth of the whole city—and including South Yardley, King's Heath, and part of King's Norton. The plan will join up with that of North Yardley and extend to the Pershore-road, thus leaving a comparatively narrow area between it and the Harborne and Quinton scheme. If the required permission be obtained, Birmingham will have 14,000 acres developed on town-planning lines. Considerable opposition is, however, threatened by landowners to the scheme, and a memorial signed by four well-known Birmingham surveyors, Mr. Harry Bewlay, Mr. Edwin John Harber, Mr. Richard Fowler, and Mr. Walter R. Ludlow, has been sent to members of both Houses of Parliament, praying that the scheme may be delayed until further inquiry is made. The signatories object to certain provisions of the scheme as arbitrary and unjust. Particular exception is taken to the manner in which the number of houses per acre is fixed, the arbitrary reservation for factories of two areas specially suited for workmen's dwellings, and the setting back of building lines.

The annual report of the city engineer of Newcastle-on-Tyne (Mr. W. J. Steele), for the year ended March 31, has been published. The report states that the area of the city is 8,452 acres; that the number of inhabited [illegible] is 50,550; that there are 252 miles of highway, [illegible] tion, and 275 miles of sewers. There are [illegible] against 251 in the previous year, which was [illegible] the large increase in the area of the city in 1904 by the addition of Benwell and Walker. One good feature of this remarkable decline in the erection of new dwellings has been the satisfactory decrease in the number of uninhabited dwellings. There has been a reduction of [illegible] the number of empty dwellings which are habitable, between August 3, 1912, and May 16, 1913. The estimated cost of new buildings for which plans had been approved by the committee during the year was £506,541, compared with £341,351 for the previous year, £391,271 for the year ended March 31, 1911, and £476,200 for the year ended March 31, 1910.

Interesting particulars concerning the constructional development of Vancouver, B.C., have been furnished recently by the city engineer, Mr. F. L. Fellowes. The 1912 building total was 19,388,322dol., the classification being as follows: Repairs and alterations, 159,313dol.; residences, 3,954,918dol.; hotels, apartment, and rooming houses, 6,180,805dol.; factories and warehouses, 1,748,582dol.; offices and stores, 7,344,704dol. The estimated building expenditure for the present season is 18,000,00dol. The work of the city engineering department in 1913 involves an estimated outlay of 6,140,502dol. Among the principal undertakings are the Georgia-Harris viaduct, estimated to cost 524,000dol.; causeway at Stanley Park, Burrard Peninsula joint sewerage scheme, and extensive street-paving works.

MEETINGS FOR THE ENSUING WEEK

[illegible]

10.30 a.m.

The London County Council Money Bill and the London County Council (Tramways and Improvements) Bill were read a second time in the House of Lords on Tuesday.

The Ancient Monuments Consolidation and Amendment Bill, which has already passed the House of Lords, was read a second time in the House of Commons on Wednesday.

The corner premises of Messrs. Poole and Lord in Oxford-street, close to Vere-street, and next door to Messrs. D. H. Evans and Co., have been acquired by the latter firm of drapers, and are about to be pulled down, with a view to rebuilding.

The foundation-stones of a Sisters' settlement and training home, a cripples' hall, and social institute for working men, which are being provided, at a cost of £7,000, for the South-East London Primitive Methodist Mission in Old Kent-road, were laid on Saturday.

Mrs. Amy Giovanna Storr, of Willys at Heath, Crockham Hill, Edenbridge, widow, who died on May 22, has left £34,923. To the [illegible] two water-colour drawings—designs for the Thames Embankment, made about 1843 by her father, Thomas Allom, M.R.I.B.A., the well-known architectural draughtsman—to the nation, to be placed either in the South Kensington Museum or the Tate Gallery, conditional on their being placed in a good position on the line, and, if possible, in close proximity to the water-colour drawings of H. M. Turner.

Mrs. Isabella Paine, of Cockshott-hill, Reigate, who died on May 15 last, aged 75, left to the corporation of Newark-on-Trent certain pictures to form the nucleus of an art-gallery in memory of her father, William Thompson, conditional upon the corporation's undertaking to provide a suitable room for their exhibition. Among the pictures are a small landscape with mill, by Constable, group of cherubs by Cipriani, two portraits, by Hoppner; the Artist's Studio, by P. P. Rubens; and a Woman in a Cave, by Angelica Kauffmann.

Trade News.

WAGES MOVEMENTS.

RUGBY DISPUTE SETTLED.—Sir Stafford Howard, who was appointed by the Board of Trade to arbitrate in the recent building trades dispute at Rugby, has communicated his award to the parties concerned. Four sections were specially interested — plumbers, plasterers, painters and labourers, who asked for an all round advance of one penny per hour. The arbitrator has decided that the men shall receive a halfpenny advance from August 1, and a further advance of a farthing per hour from January 1 next. Wages in Rugby will then be: Builders' labourers, 6¼d.; plasterers' labourers, 7¾d.; scaffolders and stone-sawyers, 6¾d.; plumbers, 9¼d.; painters, 8¼d.; and plasterers, 9¾d. The question of working rules was also made the subject of arbitration.

Mr. H. Dyson has been confirmed in the office of District Engineer in the Public Works Department, Fiji.

The foundation-stone of a garden village of 175 houses at Gellifaelog, Merthyr, was laid on Friday by Lady Rodney.

The urban district council of Ilford have approved a scheme for the provision of new public baths at an estimated cost of £21,300.

On land offered on advantageous terms by the Marquis of Lincolnshire, Wycombe Town Council have decided to build fifty-four houses for artisans.

A hippodrome is about to be built in Osborne-road, Pontypool, from plans by Mr. C. F. Wilton. The contractors are Messrs. Poulton and Whiting, of Pontnewydd.

The Doncaster Corporation are applying to the Local Government Board for sanction to borrow £12,500 for the provision of plant in connection with their electricity undertaking.

Birmingham Water Committee issued a report on Wednesday in which they recommend the city council to lay a third line of pipes from the Elan aqueduct in Wales, whence the city obtains its water supply.

The members of the Wolverhampton Archæological Society on Saturday paid a visit to the ruins of the Augustinian Abbey of Haughmond, Shropshire. The party were conducted by Mr. J. Harley over the various buildings.

Damage to the extent of about £4,000 was caused by a fire which broke out early on Saturday morning at the cabinetmaking premises of Messrs. Sternberg, Wilson, and Co., at 31, Charlotte-street, Liverpool-street. The building, which has a frontage of about 60ft., was considerably damaged, while the greater portion of the contents was destroyed.

Mr. G. A. Stevenson, C.B., now a Commissioner of Public Works, Ireland, has been appointed Chairman of the Board, in succession to Sir George Holmes, who will retire under the age limit in October. Mr. T. P. Le Fanu, C.B., now private secretary to the Chief Secretary for Ireland, has been appointed a Commissioner in sucession to Mr. Stevenson.

After some delay the Montreal Board of Control have awarded a contract for the widening of the city aqueduct to the Cook Construction Company, of Sudbury, Ontario, at the price of 2,322,552dol. The next lowest tender was that of Messrs. Quinlan and Robertson, of Montreal (who carried out a previous contract for work on the aqueduct, their price being 2,621,180dol.

It is proposed to carry out further improvements at the North Bay at Scarborough, and the town council in committee have approved plans and estimates for the demolition of the old North Pier pavilion and adjoining buildings, alterations and improvements of the roadway and sea-wall near that pavilion, the erection of a public shelter, shops, and conveniences in the Clarence Gardens, adjoining the Royal Albert Drive.

Under the Royal Commission on Ancient and Historical Monuments in Scotland, an investigation is now being carried out under the supervision of Prof. Haverfield and Mr. M'Donald, on the farm of Bush, Ythanwells, in the civil parish of Auchterless, about one and a half miles from the source of the River Ythan. The object is to settle the question whether the camp is a Roman one or not. The trenches in connection with the camp can be traced not only on the farm of Bush, but through fields on the north-east of the camp on the adjoining farm of Logienewton, and also to the east, on the farm of Logieaulton.

LATEST PRICES.

IRON.

Steel Joists, Belgian and German (ex steamer, London)	per ton	£6	2	6	to	£6	5	0
Steel Joists, English		7	10	0	,,	7	12	6
Wrought-Iron Girder Plates		7	0	0	,,	7	5	0
Steel Girder Plates		7	2	6	,,	8	2	6
Bar Iron, good Staffs		6	5	0	,,	8	10	0
Do., Lowmoor, Flat, Round, or Square		20	0	0	,,	0	0	0
Do., Welsh		5	15	0	,,	5	17	0
Boiler Plates, Iron —								
South Staffs		8	0	0	,,	8	15	0
Best Snedshill		9	0	0	,,	9	10	0

Angles 10s., Tees 20s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £8 15s to £9.

Ditto galvanised, £14 to £15 10s. per ton.

Galvanised Corrugated Sheet Iron—

	No. 18 to 20.	No. 22 to 24
6ft. to 8ft. long, inclusive gauge	Per ton. £13 0 0	Per ton. ... £13 10 0
Best ditto	13 0 0	... 14 0 0

Wire Nails (Points de Paris)—

3 to 7	8	9	10	11	12	13	14	15	B.W.G.
8/3	8/9	9/3	9/9	10/3	11/-	11/9	12/6	13/6	per cwt.

Cast-Iron Columns	Per ton. £7	10	0	to	Per ton. £9	0	0
Cast-Iron Stanchions	7	10	0	,,	9	0	0
Rolled-Iron Fencing Wire	8	5	0	,,	8	10	0
Rolled-Steel Fencing Wire	7	5	0	,,	7	10	0
,, ,, ,, Galvanised	8	15	0	,,	9	5	0
Cast-Iron Sash Weights	5	0	0	,,	5	5	0
Cut Floor Brads	9	15	0	,,		—	
Corrugated Iron, 24 gauge	16	0	0	,,		—	
Galvanised Wire Strand, 7 ply, 14 B.W.G.	14	5	0	,,		—	

B.B. Drawn Telegraph Wire, Galvanised—

0 to 8	9	10	11	12	B.W.G.
£10 10s.	£10 15s.	£11 0s.	£11 5s.	£11 15s.	per ton.

Cast-Iron Socket Pipes—						
3in. diameter	£6	2	6	to	£6	7	0
4in. to 6in.	6	0	0	,,	6	5	0
7in. to 24in. (all sizes)	5	7	6	,,	6	0	0

[Coated with composition, 5s. 0d. per ton extra, turned and bored joints, 5s. 0d. per ton extra.]

Pig Iron—	Per ton.					
Cold Blast, Lilleshall	110s.	0d.	to	117s.	6d.	
Hot Blast, ditto	70s.	0d.	,,	75s.	0d.	

Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—

Gas-Tubes	75 p.c.
Water-Tubes	72½ ,,
Steam-Tubes	67½ ,,
Galvanised Gas-Tubes	65 ,,
Galvanised Water-Tubes	62½ ,,
Galvanised Steam-Tubes	57½ ,,

OTHER METALS.

Spelter, Silesian	Per ton £20	10	0	to	£20	15	0
Lead Water Pipe, Town	24	15	0	,,		—	
,, ,, ,, Country	25	10	0	,,		—	
Lead Barrel Pipe, Town	25	15	0	,,		—	
,, ,, ,, Country	26	10	0	,,		—	
Lead Pipe, Tinned inside, Town	26	15	0	,,		—	
,, ,, ,, Country	27	10	0	,,		—	
Lead Pipe, Tinned inside and outside ... Town	29	5	0	,,		—	
,, ,, ,, Country	30	0	0	,,		—	
Composition Gas-Pipe, Town	27	15	0	,,		—	
,, ,, Country	28	10	0	,,		—	
Lead Soil-pipe (up to 4½in.) Town	27	15	0	,,		—	
,, ,, Country [Over 4½in. £1 per ton extra.]	28	10	0	,,		—	
Lead Shot, in 28lb. bags	24	15	0	,,		—	
Copper Sheets, sheathing & rods	93	0	0	,,	93	10	0
Copper, British Cake and Ingot	81	10	0	,,	82	0	0
Tin, English Ingots	187	10	0	,,	188	10	0
Do., Bars	188	10	0	,,	189	10	0
Pig Lead, in 1cwt. pigs (Town)	21	15	0	,,		—	
Sheet Lead, Town	24	5	0	,,		—	
,, ,, Country	25	0	0	,,		—	
Genuine White Lead	29	15	0	,,		—	
Refined Red Lead	25	0	0	,,		—	
Sheet Zinc	30	0	0	,,		—	
Old Lead, against account	19	5	0	,,		—	
Tin ... per cwt.	11	0	0	,,		—	
Cut nails (per cwt. basis, ordinary brand	0	11	6	,,		—	

TIMBER.

CONSTRUCTIONAL.

Yellow Pine Deals, Quebec, per standard:— 1st quality	£38	0	0	to	£45	0	0
,, ,, ,, 2nd ,,	26	0	0	,,	32	0	0
,, ,, ,, 3rd ,,	16	0	0	,,	18	10	0
Spruce Deals: St. Johns	10	0	0	,,	11	10	0
,, ,, Miramichi	9	10	0	,,	10	10	0
,, Boards: Swag	11	0	0	,,	12	0	0
Red Deals: Archangel 1st quality	21	0	0	,,	24	0	0
,, ,, ,, 2nd ,,	16	0	0	,,	19	0	0
,, ,, ,, 3rd ,,	12	0	0	,,	14	0	0
,, ,, St. Petersburg —							
,, ,, ,, 1st quality	16	10	0	,,	18	0	0
,, ,, ,, 2nd ,,	14	10	0	,,	15	10	0
,, ,, Wyburg & Uleaborg	12	10	0	,,	15	0	0
,, Gefle, Gothenburg, and Stockholm	12	10	0	,,	17	0	0
White Deals: Crown	14	0	0	,,	15	10	0
,, ,, Seconds	11	10	0	,,	13	0	0
Flooring: White and Planed — 1st and 2nd quality mixed	10	15	0	,,	11	15	0
1st, 2nd, & 3rd quality mixed	10	5	0	,,	11	0	0
Red Planed, 1st quality	14	10	0	,,	17	0	0
Pitch Pine: Prime Deals and Boards	18	0	0	,,	23	0	0
Lignum Vitæ ... Per ton	7	0	0	,,	14	0	0

	Per cubic foot.					
Yellow Pine Logs (waney board)	0	5	0	,,	0	5	6
Pitch Pine Logs	0	2	0	,,	0	2	6
Birch: Quebec Logs	0	2	3	,,	0	2	9
Oak: Austrian Wainscot	0	7	0	,,	0	8	0
Mahogany: Gaboon	0	2	0	,,	0	2	3

FURNITURE AND HARDWOODS.

Teak: Burmese, per load, 50ft.	£20	0	0	to	£25	0	0
Teak: Java, per load, 50ft.	16	0	0	,,	21	0	0
	Per cubic foot.						
Oak Planks: U.S.A., imported	0	1	9	to	0	2	6
,, Boards ,, ,, Prm.	0	3	0	,,	0	3	6
,, ,, ,, ,, Mdm.	0	2	6	,,	0	2	9
Sequoia (Californian Redwood)	0	2	4	,,	0	3	6
Birch: Quebec logs	0	2	3	,,	0	2	9
,, ,, sawn planks	0	1	3	,,	0	2	0
Oak: Austrian Wainscot	0	7	0	,,	0	8	0
Walnut: Prime boards and planks	0	6	0	,,	0	6	6
Walnut: Mdm. ,, ,,	0	3	6	,,	0	4	6
Greenheart: Hewn logs	0	3	3	,,	0	4	0
Cedar: Cigar box	0	4	9	,,	0	5	6
Satin Walnut: Imp. sawn boards, prime	0	2	4	,,	0	2	9
Orham: Imp. sawn boards, prime	0	2	0	,,	0	2	3
Mahogany: St. Domingo, Cuba, and Honduras	0	6	0	,,	0	9	0
,, African, Assinee, &c.	0	5	0	,,	0	6	6
,, Lagos and Benin	0	4	6	,,	0	6	0
,, Sekondi and Cape Lopez	0	3	0	,,	0	4	0
,, Gaboon	0	2	0	,,	0	2	3
Satinwood: West Indian	0	10	0	,,	0	14	0
Rosewood ... Per ton	8	0	0	,,	12	0	0
Lignum Vitæ ... ,,	7	0	0	,,	14	0	0

STONE.*

Red Mansfield, in blocks ... per foot cube	£0	2	4	
Darley Dale, ditto ... ,,	0	2	3	
Red Corsehill, ditto ... ,,	0	2	2	
Closeburn Red Freestone, ditto ... ,,	0	2	0	
Ancaster, ditto ... ,,	0	1	10	
Greenshill, ditto ... ,,	0	1	10	
Chilmark, ditto (in truck at Nine Elms) ... ,,	0	1	10½	
Hard York, ditto ... ,,	0	2	10	
Ditto ditto 6in. sawn both sides, landings, random sizes ... per foot sup.	0	2	8	
Ditto ditto 3in. slab sawn two sides, random sizes ... ,,		1	3	

* All F.O.R. London.

Bath Stone, delivered on road waggons, Paddington Depot ... per foot cube	0	1	7½	
Ditto, ditto, Nine Elms Depot ... ,,	0	1	9½	
Beer Stone, delivered on rail at Seaton Station ... ,,	0	1	0	
Ditto, delivered at Nine Elms Station ... ,,	0	1	6	

Portland Stone, in random blocks of 20ft. average:—

	Brown Whit Bed. Per foot cube.			White Base Bed		
Delivered on road waggons at Paddington Depot, Nine Elms Depot, or Pimlico Wharf	... £0	2	3	... £0	2	

SLATES.

	in.	in.	£	s.	d.	per 1,000 of 1,200 at r.stn
Blue Portmadoc	20×10	...	12	12	6	,, ,,
,, ,,	16× 8	...	6	12	6	,, ,,
Blue Bangor	20×10	...	13	2	6	,, ,,
,, ,,	20×12	...	13	17	6	,, ,,
First quality	20×10	...	13	0	0	,, ,,
,, ,,	20×12	...	13	15	0	,, ,,
,, ,,	16× 8	...	7	5	0	,, ,,
Eureka unfading green	20×10	...	15	17	6	,, ,,
,, ,,	20×12	...	18	7	6	,, ,,
,, ,,	18×10	...	13	5	0	,, ,,
,, ,,	16× 8	...	10	5	0	,, ,,
Permanent green	20×10	...	11	12	6	,, ,,
,, ,,	18×10	...	9	12	6	,, ,,
,, ,,	16× 8	...	6	12	6	,,

BRICKS.

(All prices net.)

First Hard Stocks	£1	15	0	per 1,000 alongside, in	
Second Hard Stocks	1	11	0	,, ,,	[river
Mild Stocks	1	9	0	,, ,,	,,
Picked Stocks for Facings	2	5	0	,,	livered at rly. stn.
Flettons	1	10	0	,, ,,	,,
Pressed Wire Cuts	1	18	0	,, ,,	,,
Red Wire Cuts	1	14	0	,, ,,	,,
Best Fareham Red	3	12	0	,,	,,
Best Red Pressed Ruabon Facing	5	0	0	,, ,,	,,
Best Blue Pressed Staffordshire	3	15	0	,, ,,	,,
Ditto Bullnose	4	0	0	,, ,,	,,
Best Stourbridge Firebricks	3	14	0	,, ,,	,,
2½in. Best Red Accrington Plastic Facing Bricks	4	10	6	,, Net, delivered in full truck loads in London.	

Accrington Best Red Plastic Facing Bricks	per 1,000 £2 10 0
3⅛" ditto Second Best Plastic ditto	2 2 6
Ditto Ordinary Second Bricks	1 11 3
Ditto Plastic Engineering Bricks	1 17 6
Sewer Arch Brick not more than 3⅛" in thickest part	2 0 0
3⅛" Chimney Bricks fit for outside work	2 6 0
3⅛" ditto ditto through and through	2 0 0
3⅛" Beaded, Ovolo and Bevel Jambs; Octagons; 2½" and ⅜" radius Bullnoses; Stock patterns	3 7 6
Accrington Air Bricks, 9" × 2 course deep, each	0 0 6
Ditto ditto 9" × 1 course	,, 0 0 3

Accrington Camber Arches:—

3 course deep, 4⅜" soffit, per foot opening						0	1 3
4	ditto	4⅜"	ditto	ditto	ditto	0	1 8
5	ditto	4⅜"	ditto	ditto	ditto	0	2 1
6	ditto	4⅜"	ditto	ditto	ditto	0	2 6
3	ditto	9"	ditto	ditto	ditto	0	2 1
4	ditto	9"	ditto	ditto	ditto	0	2 11
5	ditto	9"	ditto	ditto	ditto	0	3 9
6	ditto	9"	ditto	ditto	ditto	0	4 6

Net free on rail or free on boat at works.

GLAZED BRICKS.

HARD GLAZES, (PER 1,000.)

	Best Salt Glazed.	Buff, Cream, & Bronze.	Other Colours.	Second Colours
Stretchers—	£12 7 6	£10 17 6	£13 17 6	£17 17 6	£13 7 6
Headers—	11 17 6	10 7 6	13 7 6	17 7 6	11 17 6
Quoins, Bullnose, and 4½in Flats—	15 17 6	14 17 6	17 17 6	21 7 6	15 17 6
Double Stretchers—	17 17 6	16 7 6	20 17 6	24 7 6	17 17 6
Double Headers—	14 17 6	13 7 6	17 17 6	21 7 6	14 17 6
One side and two ends, Square—	18 17 6	17 7 6	21 17 6	26 7 6	18 17 6
Two sides and one end, Square—	19 17 6	18 7 6	22 17 6	26 17 6	19 17 6
Splays and Squints—	17 7 6	15 17 6	21 17 6	24 17 6	17 7

Plinth and Hollow Bricks. Stretchers and Headers—5d. each 4d. each 6d. each 6d. each 5d. each

Double Bullnose, Round Ends, Bullnose Stops—5d. each 4d. each 6d. each 6d. each 5d. each

Rounded Internal Angles—4d. each 3d. each 5d. each 5d. each 4d. each

MOULDED BRICKS.

Stretchers and Headers—8d. each 8d. each 8d. each 8d. each 8d. each

Internal and External Angles—1/2 each 1/2 each 1/2 each 1/2 each 1/3 each

Cill Bullnose, Stretchers and Headers—5d. each 4d. each 6d. each 6d. each 5d. each

Majolica or Soft Glazed Stretchers and Headers ..... Per 1,000 £22 17 6

" Quoins and Bullnose... 27 17 6

Compass bricks, circular and arch bricks of single radius £6 per 1,000 over above list for their respective kinds and colours } Not exceeding 9in. by 4½in.

Camber arch bricks, any kind or colour, 1s. 2d. each ..... } by 2½in.

Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.

* These prices are carriage paid in full truck loads to London Stations.

	s.	d.	
Thames Sand	7	6	per yard, delivered
Pit Sand	7	0	" "
Thames Ballast	6	0	" "

	s.	d.		s.	d.	Per ton,
Best Portland Cement	36	0	to	41	0	delivered
Ground Blue Lias Lime	21	0	per ton delivered.			

Exclusive of charge for sacks.

	s.	d.		s.	d.	Per yard,
Grey Stone Lime	13	6	to	14	0	delivered

Stourbridge Fireclay in sacks 27s. 0d. per ton at railway station.

TILES.

	s.	d.	Dlvrd. at
Plain red roofing tiles	43	0	per 1000 ry. stn.
Hip and Valley tiles	3	7	per doz. " "
Broseley tiles	50	0	per 1000 " "
Ornamental tiles	52	6	" " "
Hip and Valley tiles	4	0	per doz. " "
Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000 " "
Ornamental do.	60	0	" " "
Hip tiles	4	0	per doz. " "
Valley tiles	3	0	" " "
Selected "Perfecta" roofing tiles:—Plain tiles (Peake's)	46	0	per 1000 " "
Ornamental do.	48	6	" " "
Hip tiles	3	10½	per doz. " "
Valley tiles	3	4½	" " "
"Rosemary" brand plain tiles	48	0	per 1000 " "
Ornamental tiles	50	0	" " "
Hip tiles	4	0	per doz. " "
Valley tiles	3	8	" " "
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 " "
Hand-made sand-faced	45	0	" " "
Hip tiles	4	0	per doz. " "
Valley tiles	3	6	" " "
Hartshill" brand plain tiles, sand-faced	50	0	per 1000 " "
Pressed	47	6	" " "
Ornamental do.	50	0	" " "
Hip tiles	4	0	per doz. " "
alley tiles	3	6	" "

OILS.

Rapeseed, English pale, per tun	£28	15	0	to £29	5	0
Do., brown ... " ...	26	15	0	" 27	5	0
Cottonseed, refined ... " ...	29	0	0	" 30	0	0
Olive, Spanish ... " ...	39	10	0	" 40	0	0
Seal, pale ... " ...	21	0	0	" 21	10	0
Cocoanut, Cochin ... " ...	46	0	0	" 46	10	0
Do., Ceylon ... " ...	42	10	0	" 43	0	0
Do., Mauritius ... " ...	42	10	0	" 43	0	0
Palm, Lagos ... " ...	32	5	0	" 33	5	0
Do. Nut Kernel ... " ...	35	0	0	" 35	10	0
Oleine ... " ...	17	5	0	" 19	5	0
Sperm ... " ...	30	0	0	" 31	0	0
Lubricating U.S. ... per gal	0	7	0	" 0	8	0
Petroleum refined ... " ...	0	0	6½	" 0	0	6¾
Tar, Stockholm ... per barrel	1	6	0	" 1	10	0
Do., Archangel ... " ...	0	19	6	" 1	0	0
Linseed Oil ... per gal.	0	2	5	"		—
Baltic Oil ... " ...	0	2	8	"		—
Turpentine ... " ...	0	2	5½	"		—
Putty (Genuine Linseed Oil) ... per cwt.	0	9	0	"		—
Pure Linseed Oil "Stority" Brand ... "	0	10	0	"		—

GLASS (IN CRATES).

	15oz.	21oz.	26oz.	32oz.
English Sheet Glass: Fourths	2½d.	3d.	3⅝d.	4⅝d.
Thirds	2¾d.	3⅝d.	4½d.	5⅝d.
Fluted Sheet	2¾d.	3⅝d.	6½d.	7d.
Hartley's English Rolled Plate:	⅛in.	3/16in.	¼in.	
	2½d.	2½d.	3d.	
Figured Rolled and Repoussine	White. 3½d.	Tinted ... 5d.		

VARNISHES, &c.

	Per gallon £	s.	d.
Fine Pale Oak Varnish	0	13	0
Pale Copal Oak	0	12	6
Superfine Pale Elastic Oak	0	14	6
Fine Extra Hard French Oak	0	10	0
Superfine Harddrying Oak, for coats of colour	0	14	0
Fine Elastic Carriage	0	12	0
Superfine Pale Elastic Carriage	0	16	0
Fine Pale Maple	0	16	0
Finest Pale Durable Copal	0	18	0
Extra Pale French Oil	1	1	0
Hasloll Letting Varnish	0	18	0
White Copal Enamel	1	4	0
Extra Pale Paper	0	12	0
Best Japan Gold Size	0	10	0
Best Black Japan	0	12	0
Oak and Mahogany Stain	0	7	0
Brunswick Black	0	8	0
Berlin Black	0	16	0
Knotting	0	10	0
French and Brush Polish	0	10	0

TRADE NOTES.

A Public Works and Contractors Exhibition will be held in London next March, particulars of which will be duly announced.

Bookcase latest patent. Automatic, semi-locking and latest improved automatic sectional bookcase applied to the Wesleyan chapel and school room, Prestatyn.

Mr. Horace H. Hallett, who has been acting as Colonial Surveyor to Bermuda, has been appointed on that office with effect from July 1. Mr. Hallett has been identified with the Civil Service of Bermuda for the past twenty-five years, and has occupied the position of clerk to the Superintendent of Public Works to the office which he has now been called upon to fill. Mr. Hallett succeeds his brother, the late Mr. W. Cecil Hallett.

At a meeting of the Cuckfield Rural District Council on Friday, Mr. Matthew Wickett, who for forty-eight years has filled the post of highway surveyor, tendered the resignation of his account of advanced age. He stated that only twice during his long term of office had he been absent from the meetings of the council and the old Highways Board. The chairman spoke appreciatively of Mr. Wickett's work, and expressed regret that after such long service he was not entitled to a pension. The resignation was accepted as from Michaelmas next.

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BUILDING NEWS

OGILVIE & CO. Many years connected with the late firm of W. B. LASCELLES & CO., of Bunhill Row.
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EXPERTS in HIGH-CLASS JOINERY.
ALTERATIONS & DECORATIONS. ESTIMATES FREE.

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Olivers'
Seasoned
Hardwoods,
APPLY TO
WM. OLIVER & SONS, Ltd.,
120, Bunhill Row, London, E.C.

TENDERS.

*** Correspondents would in all cases oblige by stating their reasons of the parties tendering at any rate, of not accepted tender, as well as the name of the successful tender.

Essex.—For erecting twenty-two cottages on the Mattresse area, for the urban district council. Mr. C. Thomas, A.M.I.C.E., Council House, High-street, Marks Tey, S.W., architect:—

	£ s. d.
Lowe, W., Earls ...	1
Haynes, R. T., Merstham ...	0 0
Lyford, A. G. S., West Acton ...	0 0
Thomas and Sons, Wivenhoe ...	0 0
Lovell, H. L., Dedham ...	0 0
Holloway, H. L., Dedham ...	0 0
Letchers, F., Ltd., Hadleigh ...	0 0
Sykes, E., Marlesk ...	0 0
Smith, W., and Sons, Barking ...	0 0
Mansell, L., Stoke, Essex ...	0 0

* Accepted.

Essex.—For the erection of three cottages on the Mattresse Hall Estate, Brentwood. Mr. A. T. G. Woods, M.S.A., New-road, Brentwood, Essex, architect:—

	£ s. d.
Hammond, J., and Sons, Romford ...	0 0
Harris Bros., Billericay, Essex ...	0 0
Jarvis, F. W., Brentwood ...	0 0
Fairhead, A., and Sons, Enfield, N. ...	0 0
Cronin and Sons, Warley, Essex ...	0 0
Dowsing and Davis, Romford ...	0 0

Kent.—For the erection of new shops in New-road, for National schools managers. Mr. A. T. G. Woods, M.S.A., New-road, Brentwood, architect:—

	£ s. d.
Harris Bros., Billericay ...	0 0
Fairhead, A., Enfield, N. ...	0 0
Roberts, S., Ltd., Plymouth ...	0 0
Dowsing and Davis, Romford ...	0 0
Hammond and Sons, Romford ...	0 0
Clark and Sons, Cambridge ...	0 0
Cronin and Sons, Warley ...	2,047 16 8
Robinson, D., Stansted ...	0 0
Jarvis, F. W., Brentwood ...	0 0
Smith, H., Clacton-on-Sea ...	0 0

* Provisionally accepted.

Durham.—For renewal of the gas mains at the Industrial Colony, for the Metropolitan Asylums Board:—

	£ s. d.
Leeds Fireclay Co. ...	0 0
Sugden, F. C., and Co. ...	0 0
Dempster, R., and Sons ...	0 0
Drakes, Ltd.* ...	0 0

* Recommended for acceptance.

Devon.—For the extension of the fire station, for the urban district council:—

	£ s. d.
Reed, O. M. ...	0 0

(Recommended for acceptance.)

Denbury.—For the erection of a reservoir at Denbury, for the Newton Abbot Rural District Council:—

	£ s. d.
Best Bros., Teignmouth (accepted)	230 0 0

Dover.—For widening Folkestone-road at the foot of Maxton Hill, for the Dover Town Council:—

	£ s. d.
Lewis and Austen ... accepted	0 0

Essex, N.E.—For erecting and furnishing a temporary building for the accommodation of 60 mentally defective children on the Baltic-street site, Finsbury, for the London County Council:—

	£ s. d.
Humphreys, Ltd., Knightsbridge	1,430 0 0
Harrison, J., and Co., Camberwell	1,170 0 0
Rowley Bros., Wood Green ...	1,085 0 0
Harbrow, W., Iron Building Works, South Bermondsey ...	0 0

Architect's estimate, £1,140.

* Recommended for acceptance.

Greenwich, S.E.—For the supply of a 50-ton overhead travelling crane required for the Greenwich generating station:—

	£ s. d.
Heywood, S. H., and Co., Ltd., Redditch ...	3,602 10 0
Carrick and Ritchie, Ltd., Edinburgh ...	2,984 0 0
Booth, J., and Bros., Ltd., Leeds ...	2,970 0 0
Cowans, Sheldon, and Co., Ltd., Carlisle ...	2,850 10 0
Babcock and Wilcox, Ltd., Farringdon-street, E.C.* ...	2,350 0 0

* Recommended for acceptance.

Chief officer of tramways estimate, £2,200.

Hammersmith, S.W.—For the erection of a new trade school for girls at the L.C.C. Hammersmith School of Arts and Crafts, for the London County Council:—

	A.	B.
Wallis, C. E. and Sons, Ltd., Haymarket ...	£21,731 0 0	—
Bowyer, J. and C., Ltd., Upper Norwood ...	21,463 0 0	—
Leslie & Co., Ltd., Kensington-square ...	21,361 0 0	£22,361 0 0
Holloway, H. L. Deptford ...	21,200 0 0	21,600 0 0
Garrett, J., and Son, Balham-hill ...	21,189 0 0	Not tendered
Higgs and Hill, Ltd., South Lambeth ...	20,963 0 0	21,493 0 0
Appleby, J., and Sons, Southwark-park ...	20,592 0 0	21,692 0 0
Patman & Fotheringham, Ltd., Liverpool-road ...	20,473 0 0	21,000 0 0
Downs, W., Walworth ...	20,310 0 0	21,419 0 0
Rowley Bros., Wood Green ...	20,280 0 0	21,480 0 0
Holloway & Greenwood, Ltd., Battersea ...	19,798 0 0	21,000 0 0
Lawrence, W., and Son, Finsbury-crescent ...	19,154 0 0	*19,584 0 0

Architect's estimate, comparable with the second column, £19,954.

* Recommended for acceptance in accordance with revised plans at £19,154. A.—For completion within nine months. B.—For completion within eight months.

Hammersmith, S.W.—For painting the exterior of Flora-gardens school, Hammersmith, for the London County Council:—
Bendon, T., and Co., Ltd. £469 0 0
(Accepted.)

Hammersmith, S.W.—For the supply of a motor generator and switchboard at the new fire station at Hammersmith, for the London County Council:—
General Electric Co., Ltd., Birmingham £181 0 0
Electric Construction Co., Ltd. Wolverhampton* 158 0 0
* Recommended for acceptance.
Chief engineer's estimate, £128.

Hammersmith, S.W.—For the supply of 50,000 creosoted deal paving blocks, 3in. by 9in. by 4½in., required in connection with the diversion of tramway tracks in Wood-lane, for the London County Council:—

	A.	B.
Improved Wood Pavement Co., Ltd., Queen Victoria-street, E.C.	£7 17 0	... £7 12 0
Gabriel, T., and Sons and Burtons, Lambeth, S. E.	7 17 0	... —
Lee, J. B., and Sons, Ltd., Grace-church-street, E.C.	7 9 6	... 7 7 3
Howard, W. W., Bros., and Co., Trinity-square, E.C.	7 9 5	... 7 5 11
Acme Flooring and Paving Co. (1904), Ltd., Victoria-park, N.E.	7 8 6	... 7 5 6
Griffiths, W., and Co., Ltd., Bishopsgate, E.C.	7 6 10	... 7 3 4
Burt, Boulton, & Haywood, Ltd., Cannon-street, E.C.	*7 6 10	... 7 3 4

* Accepted. Total amount of tender about £367 1s. 8d. Estimate of chief officer of tramways, £400. A.—Price a thousand delivered by van on site. B.—Price a thousand delivered by barge to Battersea Wharf.

Hampstead, N.W.—For refitting the offices and reconstructing the drainage system at the Netherwood-street school, Hampstead, for the London County Council:—
Barton, W. S., and Co., Chancery-lane £2,199 0 0
Finch, B., and Co., Ltd., Lambeth 2,125 0 0
Beattie, W., Lower Grosvenor-place 1,625 0 0
Smith, F., and Co., Abchurch-lane 1,300 0 0
Tennant, I. C., and Co., Grange Works, Willesden Green* ... 1,170 0 0
Architect's estimate, £1,475.
* Recommended for acceptance.

Homerton, N.E.—For erecting wards, &c., at infirmary, for the Hackney Guardians. Mr. F. N. Coles, Hackney Union, Homerton, N.E., clerk:—
Hocking, J., and Co., Delafield-road, Old Charlton, S.E. £333 0 0

Lambeth.—For painting the interior and exterior of Waterloo-road school, for the London County Council:—
Smith, W., and Son, Harleyford-road £894 0 0
Bovis, Ltd., Upper Berkeley-st. ... 831 0 0
Holliday and Greenwood, Ltd., Battersea 822 0 0
Reed, W., Brixton 794 0 0
Mills, W., and Sons, Ltd., Blackheath 779 0 0
Sims, J. R., Westminster 737 0 0
Inns, A. H., Bishopsgate* 726 0 0
* Recommended for acceptance.

Lewisham, S.E.—For providing heating apparatus in connection with the rebuilding of the Lewisham Bridge (girls' and infants') school, for the London County Council:—
Arding and Dyne, Southwark Bridge-road £925 0 0
Brightside Foundry & Engineering Co., Ltd., Victoria-street ... 721 0 0
Cannon and Hefford, Peckham ... 719 10 0
Cannon, W. G., and Sons, Ltd., Southwark 698 0 0
Yetton, J., & Co., Ltd., Limehouse 676 0 0
May, J. & F., Lincoln's Inn-fields 669 0 0
Hayward Bros. and Eckstein, Ltd., Union-street, Borough* 647 0 0
Architect's estimate, £675.
* Recommended for acceptance.

London.—For the painting and cleaning of schools, for the London Education Committee:—
Bermondsey—County secondary and the "Alma" elementary school—painting exterior:—
Barker, G., Whitechapel £1,305 0 0
Appleby, J., and Sons, Southwark 998 0 0
Parker, G., and Sons, Peckham* 866 0 0
Smith, F., and Co., Abchurch-lane 837 0 0
Groves, H., Greenwich 810 0 0

Bethnal Green, S.W.—Somerford-street—painting exterior and cleaning interior:—
Fenn, J. S., Woolwich £876 10 0
Monday, G., & Sons, Botolph-lane 861 0 0
Thorne, F. and T., Isle of Dogs ... 857 0 0
Vigor and Co., Poplar 719 0 0
Inns, A. H., Bishopsgate* 636 0 0

Bow and Bromley—St. Leonard's-road—painting interior and exterior:—
Griggs and Son, Cubitt Town ... £957 19 10
Newell, H., Poplar 940 0 0
Kearley, C. F., Ltd., Great Marlborough-street 876 0 0
Holloway Bros. (London), Ltd., South Audley-street 876 0 0
Holliday and Greenwood, Ltd., Battersea 858 0 0
Thorne, F. and T., Isle of Dogs ... 791 11 0
Vigor and Co., Poplar 703 10 0
Bailey, W., East Greenwich* ... 645 6 9

Fulham—William-street—painting interior:—
Lole and Co., Chelsea £899 0 0
General Building Co., Charing Cross 865 0 0
Bristow & Eatwell, Lancaster-road 850 0 0
Roberts, A., and Co., Ltd., Earl's Court-road 754 0 0
Chappell, W., Maida Vale 690 0 0
Bendon, T., Ltd., Hammersmith* 686 0 0

Clapham—County Secondary School, Clapham—painting interior and exterior:—
Johnson W., and Co., Ltd., Wandsworth Common £1,240 0 0
Bowyer, J. and C., Ltd., Upper Norwood 1,017 0 0
Soole, S. N., and Son, Richmond 985 10 0
Holloway Bros. (London), Ltd., South Audley-street 959 10 0
Maxwell Bros., Ltd. Brixton-road 893 0 0
Kearley, C. F., Ltd., Great Marlborough-street 798 0 0
Garrett, F., and Son, Balham Hill 768 0 0
Holliday and Greenwood, Ltd., Battersea 725 0 0
Triggs and Co., Clapham 710 0 0
Rice and Son, Stockwell-road* ... 707 0 0

Clapham—Honeywell-road—painting interior:—
Unsigned £660 0 0
Holliday and Greenwood, Ltd., Battersea 626 0 0
Maxwell Bros., Ltd., Brixton-road 605 0 0
Garrett, J., and Son, Balham Hill 588 0 0
Johnson, W., and Co., Ltd., Wandsworth Common 578 0 0
Triggs and Co., Clapham* 507 0 0

Islington, E.—The "Newington Green"—painting interior and exterior:—
Patman and Fotheringham, Ltd., Liverpool-road £840 0 0
Shurmur, W., and Sons, Ltd., Upper Clapton 817 10 0
Roberts, C. P., and Co., Ltd., Dalston 802 0 0
Bull, F., Upper Clapton 777 0 0
Williams, G. S. S., and Son, Barnsbury 714 0 0
Brand, Pettit, and Co., South Tottenham 686 0 0
McCormick and Sons, Ltd., Islington 629 0 0

Kensington, N.—Sirdar-road—painting interior and exterior—
Strong, J., and Co., Marble Arch £890 11 2
Polden, A. and F., Shepherd's Bush 688 0 0
Crook, H. W., and Son, Ltd., Westbourne Grove* 661 17 5

Peckham.—Ivydale-road—painting interior—
Appleby, J., and Sons, Southwark Park £748 0 0
Parker, G., and Sons, Sumner-road, Peckham 714 0 0
Smith, F., and Co., Abchurch-lane 686 10 0
Loasby, F. W., Hither Green-lane 685 0 0
Line, H., Peckham Rye 648 0 0
Garrett, J., and Son, Balham Hill* 632 0 0

Rotherhithe.—Albion-street—painting exterior—
Appleby, J., and Sons, Southwark Park £933 0 0
Parker, G., and Sons, Sumner-road, Peckham 857 0 0
Smith, F., & Co., Abchurch-lane* 823 0 0
Groves, H., Greenwich 795 0 0

Rotherhithe—Keeton's-road—painting exterior—
Barker, G., Whitechapel £1,271 0 0
Appleby, J., and Sons, Southwark Park 1,240 0 0
Parker, G., and Sons, Peckham ... 1,187 0 0
Smith, F., & Co., Abchurch-lane... 1,102 10 0
Groves, H., Stockwell-street, Greenwich 975 0 0

St. Pancras, E.—The "Medburn"—painting interior and exterior:—
Grover, J., & Son, New North-rd. £1,020 0 0
Barton, W. S., and Co., Chancery-lane 999 0 0
Marchant, Hirst & Co., Highgate-road 990 0 0
Unsigned, Maida-vale 895 0 0
Patman and Fotheringham, Ltd., Liverpool-road 844 0 0
Williams, G. S. S., and Son, Barnsbury 826 0 0
McCormick and Sons, Ltd., Essex-road 799 0 0
Blake, W. E., Ltd., Southampton-street 783 0 0
Inns, A. H., 36, Camomile-street* 757 0 0

Bermondsey.—Weston-street—painting exterior and cleaning interior:—
King, W., and Son, Vauxhall Bridge-road £648 0 0
Sims, J. R., Westminster 617 0 0
Wallis, G. E., and Son, Ltd., Panton-street* 587 0 0

Camberwell, N.—Ilderton-road—painting interior:—
King, H., and Son, Peckham ... £608 0 0
Peyton, A. T., Lewisham 593 15 0
Parker, G., and Sons, Peckham ... 567 0 0
Unsigned 560 6 0
Smith, F., and Co., Abchurch-lane, City* 541 16 6

Hampstead.—Fleet-road—painting interior:—
Marchant, Hirst, and Co., High-gate-road £737 0 0
Lenn, Thornton, and Co., Lower Sloane-street 695 0 0
Stevens and Sons, Crouch Hill ... 612 10 0
Holmes, W. H., and Son, Brondesbury... ... ... 615 5 0
Chappell, W., Maida Vale* ... 525 0 0

Marylebone, E.—Barrow Hill-road—painting interior:—
Tennant, I. C., and Co., Willesden-green £656 12 0
Bovis, Ltd., Upper Berkeley-street 629 0 0
Lawrence, F. W., Belsize Park ... 616 3 10
Strong, J., and Co., Connaught House, Marble Arch* 611 2 2
* Accepted.

Llandilo.—For erecting infirmary, for the guardians. Mr. E. Jones, Glancennen, Llandebie, surveyor:—
Vaughan, M., Tycroes Pantyffynon £4,550 0 0
Vaughan, G., Tycroes Pantyffynon 4,370 0 0
Morris, S. P., Llandilo 4,225 0 0
Davies, D., Llandilo 3,923 0 0
Thomas, W., Rhosmain, Llandilo 3,842 0 0
Mercer, G., and Son, Llanelly ... 3,775 0 0
Davies and Evans, Llandebie ... 3,770 0 0
Howells, J. D., Brynamman ... 3,765 0 0
Thomas, J. S., Pantyffynon ... 3,745 0 0
Morgan, W. D., Llyshendy, Llandilo 3,698 10 0
Thomas, T. C., and Co., Llandilo 3,498 10 0
Howells, D., and Son, Llandebie 3,172 10 0
Evans, E. D. W., 43, Tudor-road, Cardiff (accepted) 3,120 0 0

London, S.E.—For the repair of the carriageway in Blackwall Tunnel, for the London County Council:—
Acme Flooring and Paving Co. (1904), Ltd., Victoria Park, N.E. £2,301 5 10
Dick, Kerr, and Co., Ltd., Cannon-street, E.C. 2,262 4 8
Griffiths, W., and Co., Ltd., Bishopsgate, E.C. 2,192 12 2
Mowlem, J., and Co., Ltd., Westminster, S.W. 2,168 16 0
Anderson, G. J., Poplar 1,932 3 8
Wheeler, W. H., and Co., Ltd., 235, Blackfriars-road, S.E.* ... 1,868 14 6
* Recommended for acceptance.

Neath.—For the erection of 93 workmen's dwellings, including paving of footpaths, for the Neath Corporation. Mr. D. M. Jenkins, Assoc.M.Inst.C.E., borough engineer:—
Hill, A., Llandudno... ... ... £22,505 0 0
Pye, J., and Co., Swansea 20,829 10 0
Jenkins, W. and J., Merthyr ... 19,705 15 3
Card, W. J. and Co., Neath ... 18,519 11 6
Waring, Cole, and Waring, Neath 16,726 0 6
White Bros., Sketty, Swansea ... 16,694 13 9
Rogers, H., Manselton, Swansea... 16,450 0 0
Edwards and Lloyd, Maesteg* ... 16,033 5 0
Snow, J., jun., Ystradgynlais ... 15,838 12 0
* Accepted.

New Cross, S.E.—For alterations and improvements to New Cross fire-station, for the London County Council:—
Rice & Son, Stockwell-road, S.W. £7,979 0 0
Holloway Bros. (London), Ltd., Lambeth, S.E. 7,885 0 0
Ashby and Horner, Aldgate, ... 7,800 0 0
Marsland, J., and Sons, Walworth 7,348 0 0
Garrett, J., & Son, Balham Hill ... 7,271 0 0
Higgs & Hill, Ltd., South Lambeth 7,250 0 0
Downs, W., Walworth-road ... 7,245 0 0
Falkner, J. W., & Son, Old Kent-rd. 7,189 0 0
Kerridge and Shaw, Adelphi ... 6,969 0 0
Holliday & Greenwood, Battersea 6 893 0 0
Triggs and Co., Clapham 6,795 0 0
Holloway, H. L., Deptford ... 6,632 0 0
Bowyer, J. & C., Upper Norwood* 6,594 2 0
* Recommended for acceptance.

Norwood Park, S.E.—For the erection of conveniences at Norwood Park, for the London County Council:—
Rice and Son, Stockwell-road ... £629 0 0
Rowley Bros., Wood Green ... 625 0 0
Bowyer, J. and C., Ltd., Upper Norwood 614 0 0
Johnson, W., and Co., Ltd., Wandsworth Common* 589 0 0
Estimate of the architect, £534.
* Recommended for acceptance.

Oundle.—For providing water supply at Kingscliffe, for the Oundle Rural District Council:—
Kettle and Sons, Peterborough ... £947 2 0
(Accepted. Engineer's estimate, £1,032.)

Southampton.—For works of painting at (A) Bitterne Park, (B) Northam, and (C) Mount Pleasant council schools, for the borough education committee:—
Jenkins and Co. (accepted for all three) (A) £53, (B) £98, (C) £125.

Stepney, E.—For painting the exterior of Settles-street School, for the London County Council:—
Symes, A. E., Stratford £815 0 0
Munday, G., and Sons, Eastcheap 763 0 0
McCormick & Sons, Ltd., Essex-rd. 620 0 0
Thorne, F. and T., Isle of Dogs ... 585 0 0
Fenn, J. S., Woolwich 576 10 0
Unsigned 575 0 0
Vigor & Co., 15, King-st., Poplar* 548 10 0
* Recommended for acceptance.

Thornton Heath.—For additions to Ecclesbourne-road School, for Croydon Education Committee (James Smyth, clerk, Education Office, Croydon). Mr. H. Carter Pegg, F.R.I.B.A., Alnwick House, Thornton Heath, architect. Quantities by Messrs. Kennard and Sons, 104, George-street, Croydon:—
Smith, W., and Sons, Ltd., 202, London-road, Croydon (accepted) £2,208 0 0

Walworth, S.E.—For tar-paving works at Walworth recreation ground, for the London County Council:—
Smart, J., & Son, Victoria-st., S.W. £97 0 0
Hobman, A. C. W., and Co., Bermondsey, S.E. 88 5 0
Chittenden and Simmons 80 15 0
Estimate of the chief officer of the parks department, £90.
* Accepted.

Wellington, Salop.—For erecting bakery and stables for Messrs. Brittain, Ltd. Mr. Wm. F. Edwards, 1, Newhall-street, Birmingham, architect:—
Roper, A., Wellington (accepted) £1,950 0 0

York.—For works of asphalting at Park Grove council school, for the City Education Committee:—
Treasure, E. J., Walmgate, York £156 6 0
(Accepted.)

York.—For painting St. Thomas's Schools for the city education committee:—
Bellerby, W., Peter-gate, York ... £68 0 0
(Accepted.)

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OUR ILLUSTRATIONS.

[illegible] Chesterton, Architect.

[illegible]

Stable and Cottages for Sir Walter Runciman, Bart., Shoreston, Northumberland. View and plan. Mr. R. Mauchlen, Architect.

House at Chislehurst. View and plans. Mr. E. J. May, F.R.I.B.A., Architect.

[illegible] Mountford Pigott, A.R.I.B.A., Architect.

King's College Hospital, Denmark Hill, S.E. Mr William A. Pite, F.R.I.B.A., Architect.

NOVELTY IN DESIGN.

In the beautiful process of endosmosis, nature selects, from crude formative substance, material fitted for incorporation into the living protoplasm. The action bears some comparison with the working of the intellect on the highest plane of design. From the storehouse of the memory, novel form is produced, as the outcome of a selective, refining process. The act is, of necessity, effected unconsciously. A designer, under the influence of an overflowing afflatus, his mind concentrated on present effort, does not, knowingly, refer to the past. Should he need to do so, he is yet in leading strings—he has not grown out of his long clothes, but runs, now and again, to nurse Precedent for guidance in his perplexities.

The distinction between real and spurious novelty in design resembles that between a powerful, discriminating, dominant brain and an intellect enfeebled and which has never risen to its full capabilities and power. In the former case, we obtain novelty as the result of a milling and selective process, unconsciously, as we have seen. Old form is passed through a refinery. It is subjected to the fire of thought; and out of the crucible arises that which we call novel design. Such novelty is unwitting. True beauty was the quest; the apparent novelty is something incidental. It was not sought. In the other way, the novelty is of that order which we have all long known as "for its own sake"—a very good expression, since it is certainly for no one else's. None want it, excepting the "designer." We all welcome originality in design, where such is really beautiful; but if this is not forthcoming, we much prefer the continual repetition of old beauty, day in and day out—just as we look for sunrise and sunset nightly, for the reappearing starry host year by year, for seed-time and harvest, and the full-tide glory of honeysuckle and wild rose. They that sigh for mere novelty ignore the fact that old sights and sounds, and the repetition of old acts and performances, are half the charm of life, and that Nature gives us variety chiefly by the showing of old things under constantly-varying conditions and circumstances. We think that there is but one Parthenon; in effect, there are an infinite number—from the time of grey dawn, round the clock, to set of sun. With good old Pegotty, instead of hankering for so-called novelty, we should take things more as we find them. We cannot invent new forms to supplant cube and sphere; and, surrounded on all sides by straight lines, segmental curves, and rectangles, every true and square stone block every new-turned billiard-ball strikes the eye as a thing of beauty; while the cunning jeweller rings changes on circle, square, and triangle, as the bases of his bijouterie and love-tokens.

It is spurious novelty that offends. To take a Classic capital, and turn volutes upside-down, and make a medley of old-time arrangement may be a feat of architectural jugglery; but it pleases none, it interests no one. If it does not ultimately disgust the author of the abortion, he must be far gone indeed to the bad. The details of contemporary architecture may be an exact reproduction of precedent; maybe precedent modified by intelligent study—honest endeavour to fit the part to its new purpose; a remembrance, reproducing that which we have seen somewhere, gleaned from the tablets of memory. Or it may be a parody, or the mere product of a brain striving to produce beauty—and not novelty—for its own sake, and that without definite reference to precedent or tradition. These several methods may intermesh and overlap; but if classification may thus seem hopeless, there is yet always, on the one hand, the result of thought and endeavour, and, on the other, that which we need not trouble even to designate.

Of such methods that we have likened to the endosmosic process stands on the most exalted plane. All must necessarily study precedent; but whereas, on the one hand, the brain is a mere warehouse—a kind of auxiliary store to the sketch-and-note book—on the other, old facts are sublimed, so to speak, and design becomes something as truly de novo as anything can be under the sun. Of such design we commonly say that it is the result of working "on principle." The phrase, while meaning everything, does not greatly assist in practice; for, if we advise the architectural student to design on principle, we are as though proposing that someone should build without material, but with a plethora of line and plummet. We might almost as well advise one ignorant of the art of navigation to find his way across the ocean with a compass. Given the knowledge of matter-of-fact seamanship and practical ship-working in all its details, compass, chronometer, and sextant will lead into safe haven.

Study of old work, then, is in all cases truly a sine quâ non; and it has long been observed that the most original work is done by those who have most largely studied the work of others. We may gain some idea of how this arises by study of particular instances. If we find that an architect has made a quite unusually profound study of Early English capitals, that which he will produce in his practical design will not be literal copy of any special example, but he having become master, not only of form but also of style principles—something ideal, a sublimation, as we have called it, of the old into new. That which emerges from his brain, if he has a trained eye and hand, will be no mere copy, nor even memorising, but something truly novel, just because he did not knowingly copy anything.

Some may think that the act of design is a superior process to natural endosmosis; but if we remember how architectural form may be split up into simple, elemental, and unchangeable parts, then we shall see that the designer, necessarily employing these unalterable parts of architecture, common to every style of design, is selecting and rejecting, just as Nature, by endosmosic action, selects and rejects in taking in the ultimate elements to become part of the living process. This leads us to conclude that the first requisite in true design—which is the rearrangement of unalterable elemental part into novel whole—requires certain principles as guides to the sympathetic hand, eye, and heart. Chemistry, it has been said, recognises how changes take place in the unchanging. True originality in architectural design, therefore, seems to be the reordering of changeless elemental forms into new combinations.

What we should seek from the old is not exact form and line, but motive and idea. To the real designer, the existent always suggests the possibility of something else—something, it may be, very little amended or altered, but which would yet produce quite a novel object. We all seek to improve—that is the end and aim of criticism. If we earnestly seek real improvement, the adoption of old detail and pre-existent form can never degenerate into mere copying; but our work becomes honest remodelling in the light of principle, experience, and "taste."

NATIONAL COMPETITION WORKS, 1913.

This year the display of successful competitors' drawings and designs in these contests throughout the country, organised by the Board of Education, has the great advantage of being located in the capacious and more adequate gallery attached to the new buildings of the Victoria and Albert Museum on the north side of that institution, thus encouraging an inspection by the public. For a long while, and with only very occasional exceptions, these annual exhibitions have been held in the temporary iron sheds standing for a considerable period on otherwise vacant land at the rear of the Natural History Museum, but [illegible]

tunately, these shanties have now been cleared away, or are in process of demolition, to make room for the new permanent buildings to be erected in extension of the Royal College of Science. The prize medal and other productions of the students thus assembled for public inspection are now seen to far better advantage—with the exception, however, of the stained-glass exhibits, which suffer badly as transparencies, owing to the greater light of the gallery; and though a canopy to moderate this difficulty has been set up, the proportionate effect of the designs is lost, while the artificial light fixed behind the glass to show it off is indifferent and unsuccessful. The partially-lit old corrugated iron sheds facilitated the display of this class of exhibits, as will be readily understood, and in future some better contrivance will be necessary, or the coloured-glass window designs must be displayed by themselves in some comparatively dark corridor with external openings more adapted for this object. The type of this work shown is so good, generally speaking, that some trouble should be taken to exhibit it properly, particularly as gold medals have been accorded some years to contributions by competitors in this section. On this occasion a remarkably original design, well carried out in glass, by Mr. Harry Clarke, of Dublin, has obtained a Gold Medal—the only one accorded to Ireland.

We are again compelled to express regret at the paucity of the architectural designs and measured drawings, which for the past few seasons have not shown any improvement whatever, and still continue to exhibit a falling-off. Taken as a whole, the style of work has long been far from satisfactory. The importance of this branch of study in the scheme of national art education is certainly recognised to the extent that in the officially-published reports of the examiners the architectural section report has at last been placed first in the order of precedence by the authorities, in lieu of the long-prevailing preference accorded to modelling the figure from the antique. The "mistress art" has never before, if we remember rightly, had this pre-eminent recognition accorded to it at South Kensington. The exhibiton itself is far from creditable, although the judges (Mr. R. T. Blomfield, A.R.A., Professor E. S. Prior, and Professor F. M. Simpson) commence their report by saying, "The designs submitted in this class maintain the level of previous years"—as if that afforded any grounds for congratulation. The paragraph adds that, "although work is sent in which shows complete ignorance of the rudiments of design and draughtsmanship, the examiners are glad to see fewer really bad works this year." The satisfaction thus indicated is certainly qualified by the injunction which follows as to the need of more attention to the practical requirements of planning, and the abuse of skiagraphy in some of the drawings, in which the shadows are so exaggerated that it is by no means easy to read the design.

We greatly fear that the teachers paid to give instruction in architectural design and draughtsmanship are incapable of a task of which, in the interest of the art, it would be better they should be relieved. The schooling that apt pupils get must be more of a hindrance than a help. It is a waste of money, energy, and time to perpetuate such a lack of system. What is wanted is a complete revolution, and its imminence is certain.

The highest awards in architectural design this year are three Bronze Medals, and two of these are for the Design for a Royal Palace Facade. Both are properly criticised by the judges as being "well executed; but in both cases the sculpture overpowers the design, and in one is entirely out of scale." The authors are Mr. Leonard Foster, of Leeds, and Mr. Thomas C. Howitt, of Nottingham, and we are under the impression that both of the façades were prepared for some previous students' competition, either at the Royal Academy or at the Institute, and if that be so, they cannot be properly classified as National Competition work. The examiners do not refer to the Design for a University, by Mr. Theodore Herford, of Manchester, to whom the other Bronze Medal was given, though his contribution is capably worked out in an Ionic Order, Greek in feeling, with an ornamental lay-out of terraces between two projecting wings of buildings having grounds overlooking a river. The detail is excellently put in, and the motto "Swastica" left in the corner bespeaks the fact of this set of plans having also been made for some other primary purpose—which failed, we presume. Why secondhand schemes should be thus accepted, as they have been for many years, for National medals we do not know. On the other hand, if these things were produced with the assistance of National Art masters, how came they to be allowed to compete for other prizes elsewhere as the students' own personal work?

A book prize is given to Mr. Cecil J. Cook, of Marylebone, for the Design of a Church, and a like award is made to Mr. Albert E. Lowes, of Newcastle-on-Tyne, for a Village Inn scheme. This exhibitor is disqualified under the rules for the books; but he will obtain a certificate instead. His design, in brick, is illustrated by a fairly good perspective, and the geometrical drawings are workmanlike, even if the design of its chief feature—the portico—is rather thin in its detail. Commendations are accorded to Mr. William O. Jones, of Manchester, for a Mausoleum and House designs; Mr. Clifford Hickson, of Huddersfield, for a Country House design—the same subject for which Mr. John B. Teasdale, of Manchester, is "commended." This student gets a further recognition for his measured drawings of the old Manchester Art Gallery. This building is the subject for which Mr. Gordon Hemm, also of the same school, wins a Bronze Medal. As to this last-named category of measured drawings, we cannot discover much reason for the concluding paragraph in the examiners' report, because the subjects shown are not very inspiring; but we can, and do, thoroughly endorse the last lines of the judges' remarks: "The examiners are glad to note an improvement in the standard of work"—(architectural drawings from actual measurement)—"and generally in the selection of subject; but they desire to repeat their recommendation of last year, that only examples which have genuine architectural value, and which are suitable subjects for architectural draughtsmanship, should be selected. For example, bad modern work and old work of which the detail has perished should be avoided. They regret to note that the examples of architectural drawing submitted by art teachers are by no means satisfactory." Nevertheless, these same teachers are still engaged in "preparing art students" up and down the country. The show of architectural work now on view little more than occupies one small alcove; but it suffices as evidence of the mediocrity of the examples actually prepared in the schools.

In the exhibition generally there is a good deal to praise, and dexterous work in most sections is evident, even if, on the whole, little advance in applied design is evident, and the craft-work is often poor. Fourteen Gold Medals, sixty-seven Silver Medals, and two hundred and thirty-four Bronze Medals have been awarded (three in the lowest medal awards being the highest prizes taken for architectural design).* The three Gold Medal subjects (1, 2, and 3) are most interesting, because each of the authors illustrates such a marked individual difference of draughtsmanship. Mr. Arthur Mason's shaded drawings of the nude from life, from Birmingham, differ absolutely from the old method which used to be insisted on at South Kensington. His graceful and sensitive studies, so true to life, well express the beauty of the modelling, avoiding all over-elaboration by his free use of direct drawing. Mr. William H. Stevens, of Derby, delineates his shaded study of Boy and Goose from the antique in firm and decided lines, following the direction of the structural shape depicted. These lines are so aptly put in that they give a pure, transparent effect of light and shade, with no cross-hatching whatever. The texture in parts, perhaps, may look a little woolly. Miss Mabel Webb, the third Gold Medallist, sends from Hornsey a shaded drawing of a head from the antique. Her style is based upon the Science and Art old rules; but, for all that, her pale and silver-point-looking study is excellent. The Gold Medal etchings series of Lincoln Cathedral, etc., by Mr. S. A. Gammell, of Liverpool, also include shipping and river frontages in Dockland, well handled. We must praise Miss Mary A. Gilfillan, also a Gold Medallist, of Islington, for her gold and silver necklace set with Queensland and black opals, and for her enamelled silver and gold clasp with the figure-panel of a girl in blue on a green ground, and red scroll behind the head. The style is new, but the treatment is traditional in the detailing of the materials employed. Miss Noel Laura Nisbet, of Wandsworth, is the recipient of two Gold Medals for book illustrations. The black-and-white ones (No. 10) are full of grotesque design and abundance of detail, somewhat German in manner, rich in figures, those in the backgrounds of warrior groups being subordinated nicely, though replete in design. Her eagles and trees are finely managed also. Her coloured panel picture, No. 11, shows a Mediæval castle in the rear, with a flock of goats and a piping herdsman in the foreground, where there is a standing figure of a girl. The scheme is in yellow and reds—a fine sample of colouring, broadly handled, with due attention to the draperies, and grass and foliage in the front of the group, all well adapted for reproduction. Mr. George Noble, of Leicester, attracted us by his Silver Medal scheme for a frieze of figure-work (30), and Mr. Harry Bush, of Wandsworth, has a capable design for mural decoration called "The Embarkation" (49). Miss Joan M. Brewer, of Brighton, takes a Bronze Medal for some nice architectural subjects, drawn for book illustration, in pen-and-ink (101), and Miss Ada C. Sargent has a Bronze Medal design for a painted panel worth noting. A similar award falls to Mr. Charles Baker for an inlaid clock-case, with mother-of-pearl flowers set in the foliage on the splays. The outline is lumpish, perhaps, for a clock, but quite above the ordinary, and no mere copy of an old example (191). The very free lines

*9846 works were submitted this year from 270 schools. In Wales one Bronze Medal, one Bronze Medal in Scotland, and in Ireland one Gold Medal, four Silver Medals, and nine Bronze Medals were awarded, these being included in the totals quoted above.

of a toilet-mirror adopted by Mr. Vernon Whitely, of Manchester (Gorton School), may not be quite legitimate for wood treatment, but the piece is dexterous and imaginative. In the same showcase Mr. Charles R. Tye, of Camberwell, exhibits another toilet-glass in mahogany, which we greatly prefer. Its rulings are simple and on good lines. This won a book prize. Hard by is the Gold Medal prize little circular and figure-carved box in French walnut by Miss Alice L. Hitchcock, of Kensington. On the top, for a lid, sit a group of children. The carving is suggestive and clever, with nude girls holding scarf draperies, and all largely handled for so small an object; but the work need not necessarily be in wood, and might be modelled in plastic, being an excellent appreciation of surface treatment. Miss Gwen White, of Marylebone, takes a Gold Medal for a panel of figures which, though good in colour and line, are too slight for such a position as the decoration of a wooden bookcase.

Of the Royal College of Art Exhibition, also opened last Friday, we have little room left to speak. The work shown is not particularly good, and the Architectural School, in the matter of design, appears to be too varied and diverse in its ideals, if we may judge by the designs submitted for a Non-Residential College in a University town. Mr. J. H. Farrar has easily won the Travelling Studentship with his imaginative and grandiose scheme, somewhat over-colonnaded, with a circular auditorium in the centre of a courtyard. The perspective, and also the detail, make striking drawings, done in brown. Mr. H. J. Harding submits a French, or perhaps a Belgian-like, scheme with tall Mansard roofs, very modern in style, with six internal courts, and an aspidal-ended library and chapel. Mr. H. Bannister shows a commonplace design by a poor bird's-eye view, and the Italian-mannered proposal with domes over the circular chapel and library is by Mr. G. H. Strain. The double-quadrangular plan by Mr. G. C. Styles has an octagonal hall in between, the other design being by Mr. W. G. Lockwood. These are so unlike each other, and are based upon such differing conceptions of what constitutes good architecture, that some fault in the method of teaching appears more than possible. The progressive studies of Domical design as exemplified in Wren's original scheme for St. Paul's Cathedral, as shown by his model, are excellent. These are by Mr. Farrar, with other similar capital domical details by Messrs. Bannister and Harding. Mr. H. Brownsword wins the Travelling Studentship for sculpture, and in the School of Painting Mr. C. F. Collin (for posters, decoration, and painting) is the Travelling Scholar; and Mr. P. Lloyd wins another for Lettering design and for the window shown on the main staircase, which is excellently well done and well shown, which is an advantage denied to similar glasswork in the National competition.

THE R.I.B.A. EXAMINATIONS.

PRELIMINARY.

The Preliminary Examination, qualifying for registration as Probationer R.I.B.A., was held in London, Belfast, Bristol, Glasgow, Leeds, Liverpool, Manchester, and Newcastle-on-Tyne on June 10 and 11. Of the 165 candidates admitted, forty-eight were exempted from sitting, and the remaining 120 were examined, the result being that eighty-three passed, thirty-seven being relegated to their studies. The 131 passed and exempted candidates, who have been registered as Probationers, are as follows:

William Allan, 19, Charing Cross-road, W. Cyril Douglas Andrews, 86, Derby-road, Ponder's End, N. [illegible] Aylesbury. Frederick Vatey, West Hill House, Chapel [illegible] Walker, c/o J. Livesay, 4, Whitehall-court, S.W. Irwin Walker, 10, Myddleton-street, Carlisle. Henry [illegible]

Students, viz.:

William Allan, 19, Charing Cross-road, W. (First-Class Certificate, Liverpool University.) Arnold Montague Barrowcliff, B.A.Lond., 6, Burton-street, [illegible] College, London. William Wallace Friskin, 182, Kensington Park-road, Notting Hill, W. (Senior Certificate, Glasgow School of Architecture). John Oliver Brook Hitch, 60, Harleyford-road, Vauxhall, S.W. (Four Years' Course, Architectural Association.) Malcolm Sinclair McCullum, Ivy Cottage, Brodick, Isle of Arran. (Senior Certificate, Glasgow School of Architecture.) Arthur Edwin Maxwell, 3, Margaretta-terrace, Oakley-street, Chelsea, S.W. (Four Years' Course, Architectural Association.) William Paterson, 3, Hope Park-terrace, Edinburgh. (Diploma, Edinburgh and Heriot Watt Colleges of Art.) Louis Em- [illegible] Prizeman, 1912), 25, Cheyne-row, Chelsea, and 12, Rue [illegible] Theodore Francis Hansford White, 14a, Cavendish-place, Cavendish-square, W. (Four Years' Course, Architectural Association.) James Wood, c/o Brown, 52, Elm-row, Edinburgh. (Diploma, Edinburgh College of Art.) Algernon Stuart Whitburn, Elm Croft, Claremont-avenue, Woking. Cyril Warren White, Ivor House, Durdham Park, Bristol. Raymond Charles White, 6, Bierton-hill, Aylesbury. Wilfred Pierce, Wigglesworth, Dirleton, Battlefield-road, St. Albans, Herts. Frank Cyril Willey, Osmington House, Elderfield-road, Clapton, N.E. Rees John Williams, Rum Puncheon Hotel, Swansea. Joseph Wilson, 6, Jedburgh-gardens, North Kelvinside, Glasgow. Douglas Cecil Wiltshire, Hazlemere, Curzon-road, Bournemouth, E. Ernest Wall Winks, 121, Newgate-street, Worksop. Basil Charles Winser, Oak Lea, 27, Gloucester-road, Kingston-upon-Thames. Arthur George Wood, Warrington-place, Paddock Wood, Kent. Henry Wood, 77, Lord-hip-road, Stoke [illegible] Edinburgh. Ralph Wood, Abbey Hulton, Mytton, Stoke-on-Trent. William Walter Wood, 145, Front-street, Arnold, Notts. Stanley William Woodley, 121, Erskine-hill, Hendon, N.W. George Young, 13, Beaumont-terrace, Jarrow-on-Tyne.

[illegible] for registration as Student R.I.B.A., was [illegible] dates were examined, of whom sixty-one [illegible] passed candidates are as follows, the names [illegible]

Herbert Stanley Stephens, Hampden Club, St. Pancras, N.W. John Scott Lawsen, 1, Castle Blair-park, Dunfermline. Lawrence Henry Shattock, 4, Crescent-road, Wimbledon. James Simpson Fyfe, 147, Hunter House-road, Ecclesall, Sheffield. Wesley Dougill, 42, Victor-road, Manningham, Bradford, Yorks. Martin Baitley Taylor, 37, Wheelwright-road, Erdington. Lawton Stephen Ford, Farmule, Cobham, Surrey. Bernard Roberton Saunders, 13, Vernon-road, Edgbaston, Birmingham. Joseph Blackford, Oakfield, Chaddesley, near Kidderminster. Neville Herbert Pratt, Turret House, Meadow-lane, Nottingham. John Allnutt Howell, 3, Southmoor-road, Oxford. Robert Brearly Hall, Y.M.C.A. Hostel, Cardiff. John Dickinson, Westholme, Bolton-on-Dearne. George Crossley, 117, Upper Woodlands-road, Bradford. Robert Frater, 274, Ormeau-road, Belfast. Leslie George Whitbread, c/o Sydney Moss, 4, St. Ann's-square, Manchester. George Noel Hill, 1, [illegible] 293, Oldham-road, Failsworth. Alexander Allen Foote, 3, Parliament-square, Edinburgh. Robert Cawkwell, 1, Standon-road, Wincobank, Sheffield. George Wilfred Callender, 1, Queen Victoria-street, S.W. George Alfred Rose, 17, Stanton-road, Wimbledon, S.W. Andrew Tebbutt Spence, 65, Union-road, Clapham, S.W. George Oswald Venn, Featherfield, Latchford, Warrington. Thomas Roger Liddesdale Palmer, The Vicarage, Roundhay, Leeds. Cecil Grellier, St. Martin's Croft, Epsom. Francis Alfred Barley, 10, Canewdon-road, Westcliff-on-Sea. Rufus Kirby, 88, Turney-road, Dulwich, S.E. Trevor Straker Bowes, 72, Claude-road, Cardiff. Reginald Sidney Johnson, Stafford Lodge, Stafford-road, Croydon. Walter James Brown, 5, Marlborough-terrace, Park-street, Taunton. Charles Edwin Cornish, Yeo Vale Cottage, Pilton Bridge, Barnstaple. Thomas George [illegible], Okus-road, Swindon, Wilts. Ernest Clifford Lavender, Belvidere-road, Walsall. Arthur Ainsworth, 365, Oldham-road, Newton Heath, Manchester. Charles Herbert Aslin, 73, Lennox-road, Hillsboro', Sheffield. George Arthur Booker, 26, Lennox-road, Hillsboro', Sheffield. Charles Bernard Chadwick, Myrtle Bank, [illegible] Bertram Chisholm, 15, Old Quebec-street, Marble Arch, W. Charles Lawrence Clayton, 10, Prince Albert-street, Brighton. George Alfred Cosser, 90, Laburnum-grove, Portsmouth. Ernest Vincent Dyson, 4, Chapel-lane, Headingley, Leeds. Sidney Faraday, 17, Caithness-drive, Liscard, Cheshire. Stuart Simon Fausset, 16, Chichester-avenue, Antrim-road, Belfast. Edwin William Filkins, The Bungalow, [illegible]

[illegible] Tholen Alfred Hugh Concanen, 6a, Churchmead-road, Willesden Green, N.W. Waldo Neville Harris Crook, [illegible] Edmondson, Brunshaw House, Burnley. William [illegible] William Wallace Friskin, 182, Kensington Park-road, [illegible] Craven Park-road, Harlesden, N.W. Wilfred Lethaby Haill, 28, Chesterfield-road, St. Andrew's Park, Bristol. Aubrey Frederick Hall, 20, Britannia-street, [illegible] road, Windsor. Herbert James Hall, 62, Cornerswell-road, Penarth. Richard Leslie Carby Hall, Church [illegible] House, Merthyr Vale. Stanley Borwell Noble Harrop, 6, Hartigan-road, Millhouses, Sheffield. John Lyne Harvey, 2, Argaum-villas, Devonport. Archibald Hawkins, 2, Liverpool-place, High-street, Cheltenham. [illegible] Nether Edge, Sheffield. John Thornton Hood, 3, [illegible] Limpsfield. James Leslie Howard, Turf Lea Fold, Marple, near Stockport. Philip Sidney Hudson, The [illegible] Hurd, Blackhill, co. Durham. Sidney Herbert Jeffery, 31, Hardinge-road, Ashford, Kent. William Court Johnston, 40, Aglionby-street, Carlisle. Owen [illegible] S.W. Michael Richard Kelly, Marlboro' Park, [illegible] Bridgford, Nottingham. Edwin Warry Lankfer, 49, [illegible] way, Letchworth. Samuel Hamilton Lewis, Bath House, London-road, Twickenham. Arthur Victor [illegible] 20, Christchurch-road, Streatham-hill, S.W. Malcolm [illegible] Cromwell-road, Belfast. John Alexander McAulay, 29, Cambridge-road, Great Crosby, Liverpool. Harold Spencer McCartney, 110, Hulton-street, Moss Side, [illegible] Kirkcaldy. Thomas McGarrigle, c/o Dewar, Mitchell-street, Leven, Fife. Harry Metcalfe, 173, Shear-brow, Blackburn. John Sowerby Milner, The Vicarage, [illegible] Vicarage, Handsworth, Birmingham. John Drummond [illegible] Taliesin Merfyn Morgan, Telynfa, Aberdare. Richard [illegible] Bertram Edward Norburn, 16, Albert-grove, Southsea. [illegible] Ashfield. Philip Harold Pilditch, Bartholomew's, [illegible] bridge. Robert William Potts, 21, Upper Gray-street, Edinburgh. Norman Dennis Quick, 51, Bryn-road, Swansea. Eric Reily, 68, Forest-road, Southport. [illegible] Darlington. Harry A. Richardson, Elsinore, Heaton, Bolton. [illegible] Ralph Russell Sanders, 3, Glouc[illegible]-road, Erkdale, Southport. Reginald Sydney Sargent, 98, Victoria-avenue, Ore, Hastings. [illegible] Clapton, N.E. [illegible] Chelsea, and 12, Rue de Seine, Paris. William Needham Spence, Lithgow, Oakley-road, Ranelagh, Co. Dublin. John Arthur Stansfield, 22, Swinless-street, Burnley. Adam Knowles Stewart, Baymount, Ward-avenue, Bangor, Co. Down. Christopher Stott, 23, Queen's-avenue, Old Trafford, Manchester. Vernon James Streadwick, 47, Trent-road, Brixton-hill, S.W. Frederick Robert Streeter, Tyrone-road, Thorpe Bay, Essex. Thomas Wilfrid Sutcliffe, 22, Edmund-street, [illegible] Alfred Howard Sykes, [illegible] road, Huddersfield. Douglas Harry Sykes, 86, Wilton-road, Sparkhill, Birmingham. Mark Neville Sykes, 69, Cardigan-road, Leeds. Edward Clough Tasker, 46, [illegible] 49, Cowbridge-road, Canton, Cardiff. Samuel William Tiffin, 54, Huddleston-road, Tufnell-park, N. Walter George Francis Trollet, 114, Conway-road, Southgate, N. Bernard William Tuppell [illegible] Frederick Wentworth Turner, 26, Wendover-road,

Duthie-street, Gosforth, Newcastle-on-Tyne. Cyril Francis Wallrun Hardaker, 8, St Peter's Churchwalk, Nottingham. Frank Hedley, 2, Oakwood-avenue, Roundhay, Leeds. Ralph Jackson, 58, Cheriton-square, Balham, S.W. Harold Alfred Parker, 5, Wyke-cop, Shrewsbury. William Herbert Martin, 61, Waddenhave-road, Crystal Palace, S.E. Clifford Medley, Lea Mount, Keighley. William Noel Jobson Moscrop, Alverth, Darlington. Arthur James Palmer, 1, Burlington-st., Clifton, Bristol. Bernard Richard Penderel-Brodhurst, Churchdale House, Harvard-road, Gunnersbury, W. William Fulton Pennington, Kendal. Herbert Clifford Richardson, 92, Cannon Hill-road, Birmingham. Frank Douglas Sowerby, 43, Upper Park-road, Belsize Park, N. Frederick Sutcliffe, 25, Kenilworth-road, Rathgar, Co. Dublin. Lawrence Tomlinson, 16, Mount Preston, Leeds. Harold Frederick Walker, 1, New-street, Dorset-square, N.W.

The number of failures in each subject of the Intermediate Examination was as follows:

A. Principal Styles and General History of Architecture	22
B. 1. Simple Applied Construction	[illegible]
B. 2. Theoretical Construction	[illegible]
C. 1. Historical Architecture:—	
(a) Greek and Roman	4
(b) Byzantine and Romanesque	0
(c) French and English Gothic	3
(d) Italian, French, and English Renaissance	[illegible]
C. 2. Mathematics and Mechanics	1
C. 3. Design	18

THE FINAL AND SPECIAL.

The Final and Special Examinations, qualifying for candidature as Associate R.I.B.A., were held in London from June 19 to 27. Of the ninety-six candidates examined, thirty-three passed, and sixty-three were relegated to their studies. The passed candidates were as follows:

Edward Adams, Carfax Chambers, Oxford. Lionel Bailey Budden, Heswall. Joseph John Crowe, 35, Harlow Moor-drive, Harrogate. Thomas Gordon Ellis, 8, St. Stephen's-crescent, Bayswater, W. Henry Hubert Fraser, 7, Upper Montague-street, W. Henry Victor Godfrey, 26, Ingersoll-road, Shepherd's Bush, W. Douglas Horley Griffin, 7, Esplanade, Waterloo, Liverpool. Francis Grissell, 7, Adam-street, Adelphi. Frederick Millett Hammond, 108, Arncliffe-terrace, Begram's-lane, Bradford. Joseph Garnet Hands, 12a, Johnson-mansions, West Kensington, W. Bernard Robinson Hebblethwaite, 29, Hayne-road, Beckenham. Harry Duncan Hendry, 102, Strathyre-avenue, Norbury, S.W. Joseph Hill, 23, Parliament-hill, Hampstead, N.W. George Alexander Kay, 16, Cavendish-road, Southsea, Hants. John Boyd Lawson, 98, Esmond-road, Bedford Park, W. Leonard Linton, 93, High-street, Stockton-on-Tees. Francis Lorne, Monkham's-drive, Woodford Green. Gilbert Marshall Mackenzie, 1, Victoria-street, S.W. John Ewart March, Laleham, Clarence-road, Clapham-park, S.W. Alfred Ernest Mayhew, 20, Gladsmuir-road, Whitehall-park, Highgate, N. William Wilson Nimmo, 23, Parliament-hill, Hampstead, N.W. Herbert Read Peerless, 37, Redington-road, Hapstead, N.W. Aubrey Wyndham Phillips, 67, Gwydr-crescent, Swansea. Claud Vincent Ponder, 42, Craven-street, Strand, W.C. John Charles Rogers, 1, Cumberland-terrace, Lloyd-square, W.C. Tom Sadler Rushworth, Sheering, Harlow, Essex. Thomas Spencer, 25, Fitzgerald-avenue, East Sheen, S.W. Robert Victor Sturgeon, 21, Range-road, Whalley Range, Manchester. Thomas Smith Tait, 26, Holyoake-walk, Ealing. William Voelkel, 29, Hazelwood-avenue, Newcastle-on-Tyne. Richard Walker, 10, Campden House-road, Campden-hill, W. John Wilks, 47, Moubray-road, South Shields. Herbert McGregor Wood, 5, Hornsey Lane-gardens, Highgate, N.

The number of failures in each subject of the Final Examination was as follows:

A. Design	28
B. Construction	
(a) Foundations, Walls, &c.	[illegible]
(b) Iron and Steel	[illegible]
C. Hygiene	34
D. Properties and Uses of Building Material	17
E. The Ordinary Practice of Architecture	27
F. Thesis	[illegible]

THE LONDON COUNTY COUNCIL.

The London County Council, at their meeting on Tuesday, received a recommendation from the Improvements Committee that the completion of the Mall to Charing Cross improvement be undertaken under powers to be sought in Parliament next year. Further, that an expenditure of £215,000 be sanctioned in respect of the scheme, subject to the Government and the Westminster City Council each agreeing to contribute a third, not exceeding £38,333, of the net cost.

Various proposals for the completion of the improvement were, it is reported, prepared and considered by the Joint Committee (the Council, H.M. Office of Works, and the Westminster City Council), who state that in their deliberations they have been greatly assisted by the experience and advice of Mr. Reginald Blomfield, A.R.A., President of the Royal Institute of British Architects, one of the members of the Joint Committee. Of the various schemes considered the one most favoured by the Joint Committee is that for the provision of an opening of a minimum width of 90ft., with a curved treatment for the new frontages of Nos. 11, 13, and 15, Spring gardens, the elevation to consist of a colonnade of the same order as that of Messrs. Drummond's Bank, with the buildings immediately behind the columns, the elevations to Charing Cross and to Trafalgar Square to follow the south-eastern elevation of Messrs. Drummond's Bank. The plan suggests treatment on the same lines for Messrs. Drummond's premises. Particulars of the suggested scheme have been submitted to Mr. George Drummond, and, as the result, the scheme has been slightly amended by the substitution of pilasters for columns on the western side, and on Messrs. Drummond's premises.

On the basis of the necessary Parliamentary powers being obtained, the cost of the scheme is estimated at £115,000 net. The items covered by this estimate are: (1) The acquisition of the whole of the site belonging to the Liverpool and London and Globe Insurance Company (No. 56, Charing-cross and parts of No. 55, Charing-cross and No. 17, Spring-gardens). (2) The acquisition of the premises belonging to the Phœnix Insurance Company (No. 57, Charing-cross and No. 15, Spring-gardens). (3) The acquisition of Messrs. Anderson's premises (Nos. 58 and 59, Charing-cross) and the premises in rear (Nos. 11 and 13, Spring-gardens). (4) Incidental costs and cost of paving works. While the acquisition of the whole of the above-mentioned properties may involve an original outlay of £215,000, including paving works and incidental expenditure, after allowing for recoupment, the net expenditure is estimated not to exceed £115,000. By obtaining control of all the properties as proposed, it will be possible, in dealing with the land not added to the public way, to insure the erection of buildings with approved façades. The Prime Minister has approved, on behalf of the Government, a contribution of one-third of the cost of the scheme, estimated at £115,000 as a maximum, and has agreed to support a Bill in Parliament, if the promotion of a Bill should be found necessary, in order to obtain powers to give effect to the recommendations of the Joint Committee, and the Westminster City Council has agreed to contribute one-third of the net cost on the basis of the estimate of £115,000. The sum of £115,000 now suggested is, the Joint Committee considered, the maximum expenditure which it would be justified in recommending the authorities to incur, and it is satisfied that the scheme now submitted represents the most satisfactory method of dealing with this difficult problem. The Improvements Committee is in full agreement with the Joint Committee in these views. After considerable debate, the recommendation was agreed to.

The Improvements Committee further recommended that Earl Grey be given by the Council an option for the purchase at £1,300,000 of the freehold of the central portion of the crescent site between Aldwych and the Strand for the erection thereon of offices by the Dominion Governments. This recommendation was also adopted after a long discussion.

The Building Acts Committee reported an application by the Barnes Urban District Council for consent, under the Housing and Town-Planning Act, to include 130 acres—mostly between Beverley Brook and Priory-lane—in the County of London in a scheme for the development of land within the urban district of Barnes. The L.C.C. committee did not approve of the scheme, chiefly on the ground that the land will not be ready for development for many years, and that the inclusion of the L.C.C. land within the Barnes scheme is not essential to its success.

The Housing of the Working Classes Committee, having considered representations made by the medical officer of Bethnal Green in regard to the Brady-street area in that borough, declined to advise the council to undertake an improvement scheme "in view of the fact that further legislation on the subject is practically certain at no distant date, and that such legislation will, in all probability, enable the area and other similar areas to be dealt with in a more satisfactory manner, and at less cost to the ratepayer, than is the case under the present law."

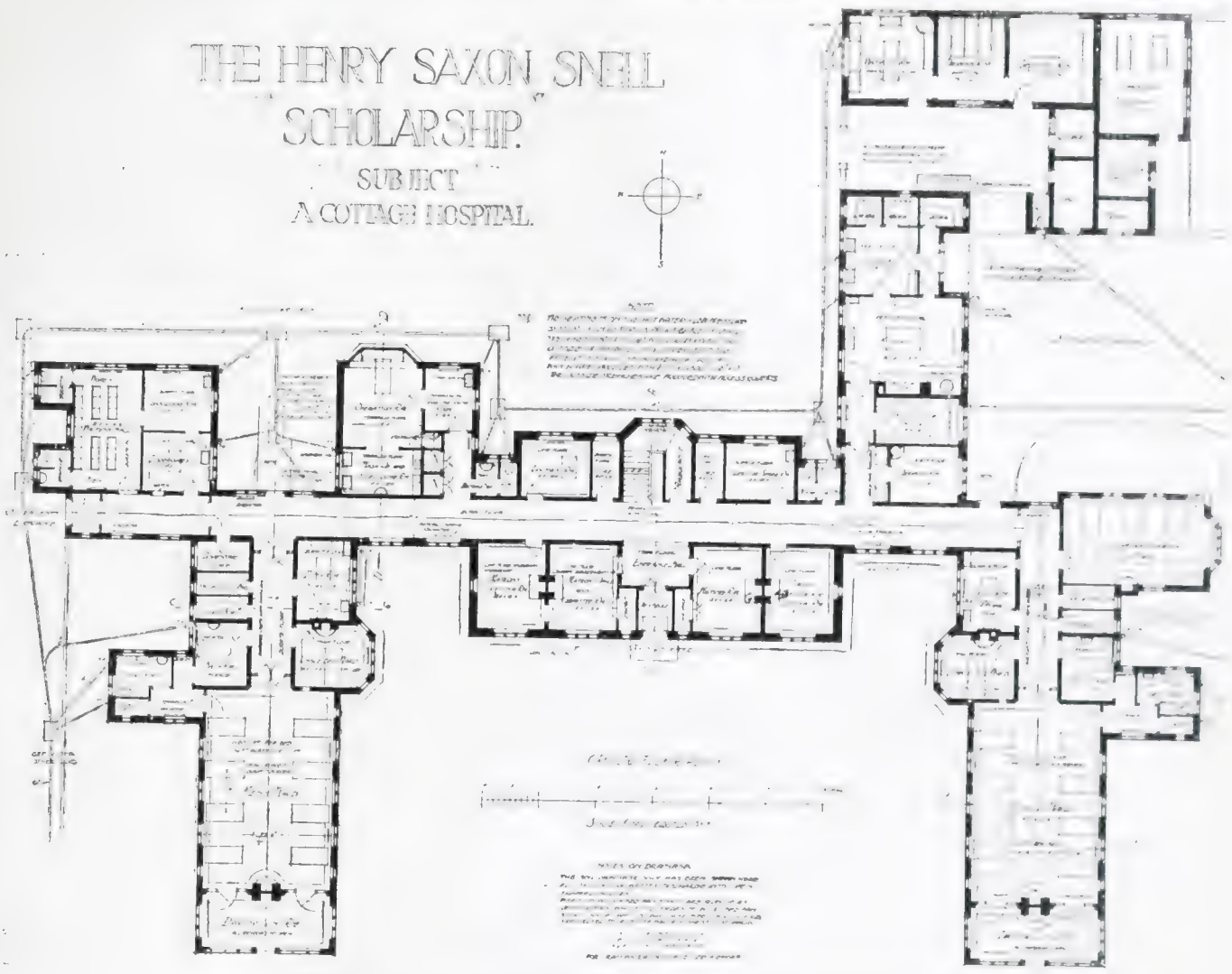
The Council agreed to contribute half, not exceeding £77,500, of the cost of widening St. Martin's-le-Grand and Gresham-street at the site of the old General Post Office and of Cheapside at "Sweeting's Corner."

It was agreed that the contract for the erection of the fire-station at Hammersmith be transferred from Messrs. William Johnson and Co. to Messrs. Walter Lawrence and Son, of Finsbury-circus, E.C.

The Finance Committee recommended the Council to grant the Hammersmith Borough Council sanction for borrowing £28,894, and also an advance of £20,394, for paving and repairing works. The sums required were: (1) £6,500, for repaving with 5in. creosoted deal blocks on a new 12in. foundation, Goldhawk-road from Uxbridge-road Station to Paddenswick-road outside the tramways area; (2) £7,783, for paving Wood-lane and Scrubs-lane (between Shinfield-street and Harrow-road) with creosoted deal wood in place of macadam, and (3) £21,161, repayable as to £14,661 for repaving (a) Goldhawk-road (from Paddenswick-road to Young's-corner) (£6,032) and King-street (£6,875) with creosoted deal wood in place of jarrah wood, and (b) Norland-market (£1,754) with creosoted deal wood in place of asphalt, and as to £6,500 for paving certain other streets with bituminous macadam in place of macadam. In the discussion of this report it was stated that the Council will be faced within the next few years with an expenditure of from three to four millions in order to fit the roads for carrying the present increasingly heavy traffic.

The Education Committee reported that the following schools, now in course of erection or reconstruction, were nearing completion, and would shortly be ready for occupation: Rebuildings at Mantua-street, Battersea, and Leipsic-road, Camberwell (T. D. Leng, contractor), Cook's Ground, Chelsea (G. Godson and Sons), Ravensbourne, Deptford, and Victory-place, Walworth (Holliday and Greenwood, Ltd.); Curtain-road, Hoxton, and Middle-row, Kensington (E. Lawrance and Sons, Ltd.); Vauxhall-street, Kennington (J. and C. Bowyer, Ltd.); Lewisham-bridge (J. Appleby and Sons); and Ricardo-street, Poplar (Patman and Fotheringham, Ltd.). Remodelling works at Randall-place, Greenwich (W. Johnson and Co., Ltd.); special schools, High-street, Shadwell (Lole and Co.); hostels, Avery Hill Training College, Eltham (Rowsley Brothers). The same committee stated that the Council, on April 22 last, approved in principle the conduct of an open competition for designs for two public elementary schools, and agreed that an assessor or assessors should be appointed by the President of the Royal Institute of British Architects. They now reported that the President has appointed Mr. John W. Simpson, F.R.I.B.A., to act as assessor for the purposes of the competition. A scheme for conducting the competition is under consideration by the Committee.

The Establishment Committee reported on the question of reorganising the repairs section of the architect's department. The work of this section consists in effecting repairs to the Council's school buildings, and for purposes of administration the county is at present divided into twenty-two districts. The Buildings Sub-Committee suggested that, owing to the great increase in the work performed by this section since it was rearranged on its present basis in 1903, it should be reorganised by reducing the number of districts to twelve, and that these new districts should coincide, as far as possible, with the twelve administrative districts into which the county is divided for education purposes. It is proposed to utilise the existing offices as far as possible for the present as the offices for the new districts. The Committee recommended that the undermentioned eight of the existing offices should be retained and used as offices for the new districts: (1) Halford-road, Fulham; (2) Kentish Town-road; (3) St. James's-street, Clerkenwell; (4) High-street, Shadwell; (5) Elmira-street, Lewisham; (6)



FIRST PRIZE DESIGN, BY MR. R. MOUNTFORD PIGOTT, A.R.I.B.A.

Broadwall, Stamford-street; (7) Brixton-road, Brixton; and (8) St. John's hill, Wandsworth. The vacant accommodation at Tredegar-road divisional offices will be utilised for the office accommodation in one district, and the Committee are taking steps to obtain suitable accommodation in the three remaining districts. The stores department may require some of the offices which will be vacated.

Mr. Andrew T. Taylor, F.R.I.B.A., chairman of the Building Acts Committee, stated that his committee had in view a very large scheme of town planning for London. Negotiations were proceeding at the present time, and the committee hoped before very long to bring up a large and important scheme before the Council.

After a discussion which lasted over an hour the Council approved the recommendation of the Parks Committee that the winter gardens at Avery Hill, Eltham, be repaired and reglazed at a cost of £2,750, a hostile amendment moved by Mr. H. J. Greenwood on behalf of the Finance Committee being defeated by 42 votes to 27. The gardens, which have been closed to the public for over a year, were built by the late Colonel North at a cost of some £23,000.

A recommendation of the Education Committee was adopted to the effect that before the Senate of the University of London finally decided on a site for new buildings the Council should have an opportunity of considering the financial aspect, both as regarded capital expenditure and any possible increase in the cost of maintenance. In the course of the discussion Mr. Andrew T. Taylor expressed a hope that the new buildings would be erected on a site on the south side of the Thames adjacent to the new County Hall. A deputation of the Senate had waited on the Improvements Committee, who had offered a site in Belvedere-road, next the County Hall, to build an embankment, and held out various other inducements. The committee, however, had heard nothing further of the matter.

A COTTAGE HOSPITAL: SAXON SNELL SCHOLARSHIP, FIRST PRIZE DESIGN.

[WITH ILLUSTRATIONS.]

The first prize was awarded in this competition at the Architectural Association, to Mr. R. Mountford Pigott, A.R.I.B.A., of Wandsworth Common. We illustrate his principal drawings. The conditions asked for a cottage hospital of 22 beds (18 men and women and 4 children), a small out-patients' department and operation block, together with the necessary administration, as well as a laundry and a mortuary, building. The site was two acres in extent, rectangular, with a frontage of 250ft., facing south. This latter condition settled the position of the axial lines of the wards, in order to provide a plan that would give the maximum amount of sun at all times of the day to the patients' rooms. The sanitary annexes have been located in such a position in order that they will cast practically no shadow on to the wards, and yet be sufficiently central for all purposes. The out-patients' department is likewise arranged so that while out-patients never at any time enter the main hospital, yet their department is within easy communication with the operation block and with the administration also. An attempt has been made to avoid any smells, etc., arising from the operation block and kitchens entering the main hospital premises and corridors. At the same time the author has avoided an excessive number of disconnecting lobbies in his scheme. The ward floors are intended to be of teak boards in narrow widths, nailed to screeds in the concrete with a "durato" border and skirting, the walls themselves being finished in Paripan. The heating is on the hot-water system, with radiators placed under windows, and provided with fresh-air inlets. The operation block has a terrazzo floor with heating on the panel system, inserted in 1¾in. thickness of durato on the walls. All pipes, etc., are, as far as possible, kept on the exterior of the walls, so that there is easy access and preventing permanent harbourings for dust.

ART MASTERS IN CONFERENCE.

The twenty-fifth annual meeting of the National Society of Art Masters was held on Friday in the Lecture Theatre of the Victoria and Albert Museum.

The retiring President, Mr. A. Shuttleworth, of Birmingham, delivered an address on Friday, remarking that in the twenty-five years of its existence the society had witnessed many and far-reaching changes in art education, changes, on the whole, for the better. It was satisfactory that the Board of Education had committed itself to the establishment of trade schools. This was an extension of the policy adopted in many schools of art of providing education suited to their occupation for the rank and file of the workers those to whom he understood Mr. Reginald Blomfield to refer as "laborious practitioners," and whom, he gathered, he would exclude from the benefits of school of art education. Mr. Blomfield seemed to him to start from an entirely false position, a position which ignored the existence of a large body of manufactures which required the help of art education, but which could not be included in the term "handicrafts." This ex-

clusion of design for manufactures by Mr. Blomfield was so marked that it attracted the attention of *The Times*. Referring to his opinion that a training in crafts was the proper aim of our State-aided schools, *The Times* remarked: "But there remains the question what crafts are to be taught, and, in particular, whether the designing of patterns for mechanical reproduction is to be one of them?" This was a very pertinent question. Mr. Blomfield's answer was, "Exclude them, and provide an art education for a minority who have 'real gifts.'" But why exclude them? Large quantities of so-called "art" products would, no doubt, continue to be made—products which were universally condemned on the score of bad taste, but which found a market on account of the appalling lack of taste shown by the public. Yet he understood Mr. Blomfield to advise that education in art schools should be positively refused to the artisan, who was engaged in producing, and the general public, which was engaged in buying, these deplorable products. The relation between art education and manufactures was the burning question. He failed to see how the highly-trained few were going to raise the tone of manufactured articles; or how any body of educationists hoped to improve taste in manufactures or in the public by relegating both to a state of contemptuous neglect. The large majority of students, in industrial districts especially, were drawn from those engaged in local trades; and many manufacturers, when they had vacancies to fill, applied to the School of Art. So far as pupils who entered art industries were concerned, the Evening Continuation Schools were a lamentable failure. The demand for some further education of this nature could be effectively met by the establishment, as part of the curriculum of a School of Art, of a junior course for evening students.

The report stated that the number of members had increased to 378. A benevolent fund had been started, and the accounts showed a balance in hand. A resolution was adopted stating: "Any arbitrary system of grading and grouping of Schools of Art will be highly detrimental to the art education of the masses."

NATIONAL COMPETITION.

In the afternoon Mr. W. R. Colton, A.R.A., gave an address on "The National Competition," which, he said, showed continuous advance since the system was initiated, fifty years ago. It was a mistake to suppose that art education could be on the same lines as general education. It had been said that only practical artists and craftsmen should be selected to teach, and also that the schools should be graded and grouped; but our system had developed on national lines, following local supply and demand. As to working artists or craftsmen being teachers, it was to be remembered that they were either successes or failures, and that only the failures would be available. But supposing a good artist were obtainable, he might still be an amateur in the matter of teaching, and it would be irksome for him, and against his nature, to give the elementary instruction that was fundamentally necessary. The grading of schools would intensify the necessity of training art masters. He believed that the greatest good for the greatest number was to be obtained by special rather than general art instruction, so far as reasonably possible. The Art Schools were not justified, except as a means of turning out well-equipped students, and the much-abused national competition was the only test. The State, however, in Mr. Colton's view, had failed to promote a natural process of art development beyond the period of training, and the State encouragement of art should begin where State aided art education left off, otherwise much of the material would be wasted. There was scope for patronage in the decoration of public buildings, and in the purchase of modern art products for the nation. There should, he suggested, be permanent, but changing, exhibitions of art products, and art schools should do more towards providing for the general art education of the public and for the cultivation of taste.

THE ANNUAL DINNER

of the society was held in the evening at the Holborn Restaurant, Mr. A. Shuttleworth presiding. Mr. H. Schröeder, President-elect, gave the toast of "The Visitors," which was responded to by Mr. W. R. Cotton and Canon Swallow. The toast of "The Honorary Members," proposed by Mr. W. Dalton, was responded to by Sir James Yoxall, M.P., who said the old Science and Art Department had looked around for cheap inspectors, and had found them in half-pay engineer officers. But now there was a satisfactory process of administration, and great improvement in the inspection of schools. There was, however, still too much honorary advice in the Central Committee. Art education had altogether been too much overweighted by the architectural side of the Advisory Committee.

Mr. James Grant, M.P., proposed "The Society of Art Masters and the Health of the President."

The President replied.

THE ROYAL ARCHÆOLOGICAL INSTITUTE AT EXETER.

The Congress of the Royal Archæological Institute at Exeter, noted in our last issue, p. 114, was continued on Thursday in last week, when the many antiquities in the city were inspected. In the Castle grounds an address was given by Mr. Harbottle Reed, F.R.I.B.A., and the members proceeded to St. Nicholas Priory, dating from 1089, which the corporation has recently acquired and is having restored under the direction of Mr. Harold Brakspear, F.S.A. Mr. Brakspear explained that the Priory was an ancient foundation given by the Conqueror to Battle Abbey, and has a 15th-century entrance tower. At one time the place was divided into cottages, and only last year its fragments were bought by the city authorities, who now intended to remove all modern accretions. The party next went to the Tuckers Hall, of which Mr. Harbottle Reed gave an account.

An inspection of the Cathedral was made under the direction of Mr. W. St. John Hope, F.S.A., who demonstrated that there was a great deal more of Norman work in the building than was usually accepted. At the west front Mr. Hope pointed out that there is a considerable difference of date between the row of figures representing the Doctors of the Church and Kings in the lower series and those of the upper series, which represent the Apostles and Prophets. This has not been recognised before. The upper series was probably not earlier than the reign of Edward IV. Inside the Cathedral, Mr. Hope referred to the transepts and towers, and said that the great difference in the masonry and the blocked window openings indicated that they were begun as transepts and converted into towers afterwards. The Cathedral generally was extraordinarily rich in small imagery.

The members afterwards visited the Guildhall, which was described by Mr. H. Lloyd Parry, the town clerk. At the Bishop's Palace the visitors were received by the Bishop of Exeter, who gave a short description of the Palace, and said he was unique among Bishops in this country in having a direct entrance from his house into his Cathedral.

On Friday the members visited by motor-car the churches of Dunchideock, which has a fine rood- and side-screens of the 15th century; Ashton, which retains its original waggon roof and series of painted saints on the lower panels of the choir-screen; and Moretonhampstead, all of which were described by Mr. Brakspear. At the prehistoric walled village at Grimpond, on Dartmoor, the visitors were met by the Devonshire Association. Mr. Robert Burnand, who has explored the hut circles and pounds, gave an address. In the evening Mr. Morris Drake read a paper on the glass of Exeter Cathedral. He said that an excellent example of the ravages of stained glass that had taken place in the country was provided by the "diary" of Richard Symonds, an antiquary and Officer of Horse in the Royal Forces, who passed through Exeter in 1644. He went into the cathedral and listed 140 coats-of arms in the stained glass windows. This catalogue had come down to us, and of the coats enumerated, less than twenty now remained. Not only coats-of-arms, but complete windows, have been destroyed, hacked to pieces by ignorant Chapter glaziers to furnish coloured borders for common glazing. In Exeter and the immediate district there were only nine stained-glass windows left—four in the cathedral and five at Doddiscombsleigh. Of the Exeter windows, the earliest was that opposite the Bishop's Throne, which belonged to the first quarter of the 14th century, and consisted of single figures under canopies and grisaille background. Allied to it in design was the east window, painted about 1320, and enlarged from a six to a nine-light window in 1390. In the enlargement the painter, Lyen, of Exeter, who painted the three centre-lights of the new window, copied the style of the work of his predecessor of seventy years before, which was an almost unprecedented thing for a Gothic artist to do.

Mr. Drake illustrated by lantern-slides the Exeter window and the fine series at Doddiscombsleigh Church, and referred to the interesting remains in the neighbouring church of Ashton. Beyond these, no church visited by the Institute could boast more than a few fragments, as at Kenton, Dartmouth, Berry Pomeroy, Awliscombe, and Littlehempston, though at one period the whole of Devonshire was rich in glass of a most interesting character. On Saturday, visits were paid to Crediton, where nine bishops ruled before the see was removed to Exeter in 1050. In the church, which was described by Mr. Brakspear, are some interesting 17th-century monuments. Kenn and Kenton, with their magnificent painted screens, and Powderham Castle, a fortified 14th-century residence, were also visited, Mr. St. John Hope and Mr. Aymer Vallance taking part in the discussions on the buildings. On Monday, a long motor-car drive took the party to Holcome Rogus 15th-century parish church, and Blundell's Grammar-school at Tiverton, Cullompton church, with its great tower and perfect rood-screen, and the 16th-century manor house at Bradford, the seat of the Walrond family.

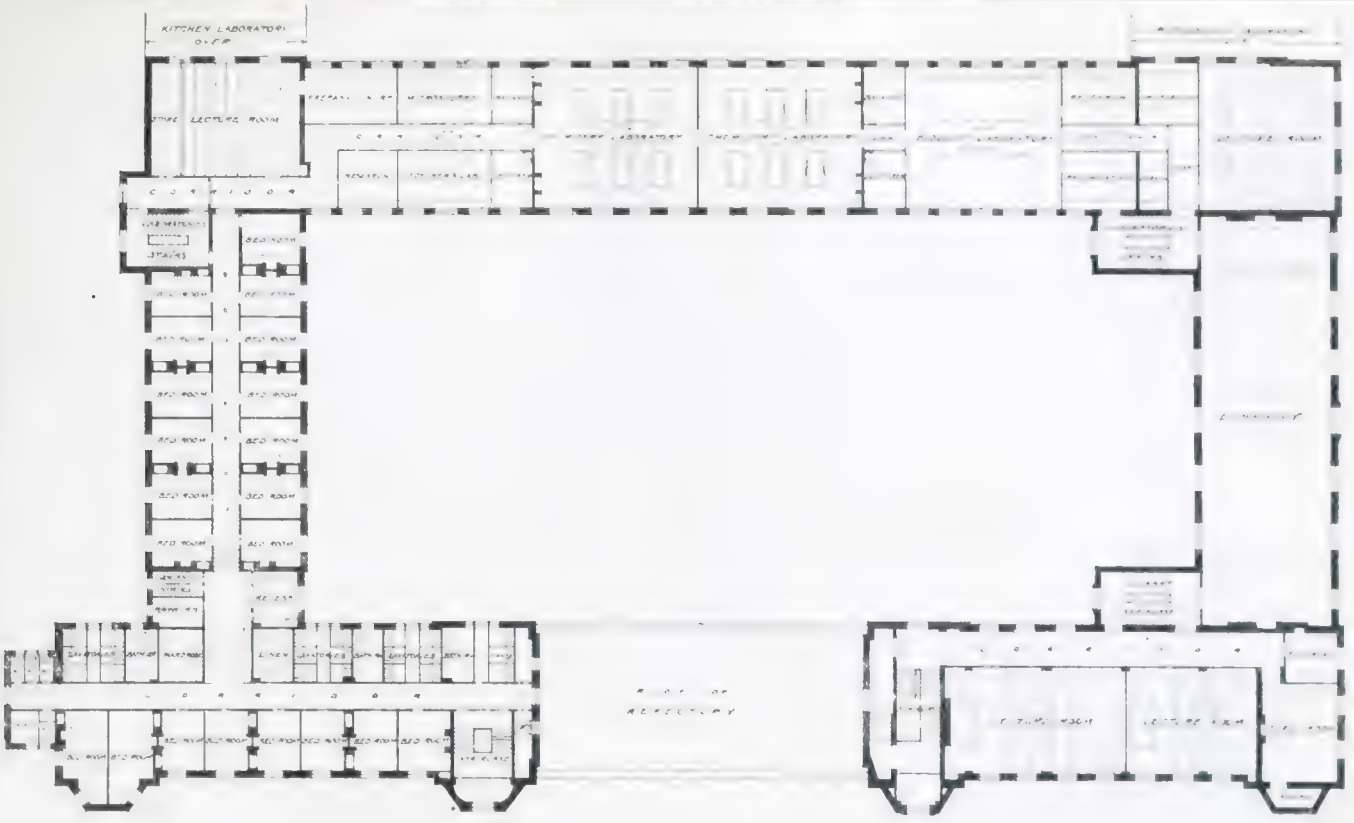
On Tuesday the members visited St. Saviour's Church, Dartmouth, under the guidance of Mr. A. Hamilton Thompson, and afterwards proceeded to Paignton, where the church and Bishop's Palace were inspected, Powderham Castle, a fortified 15th-century manor-house, and Torre Abbey, at Torquay, where Mr. St. John Hope acted as cicerone.

The congress, which has been very successful, was brought to a close on Wednesday by a rail-and-motor tour to inspect Berry Pomeroy Castle, the church, guildhall, and the ancient houses at Totnes, and Dartington Hall.

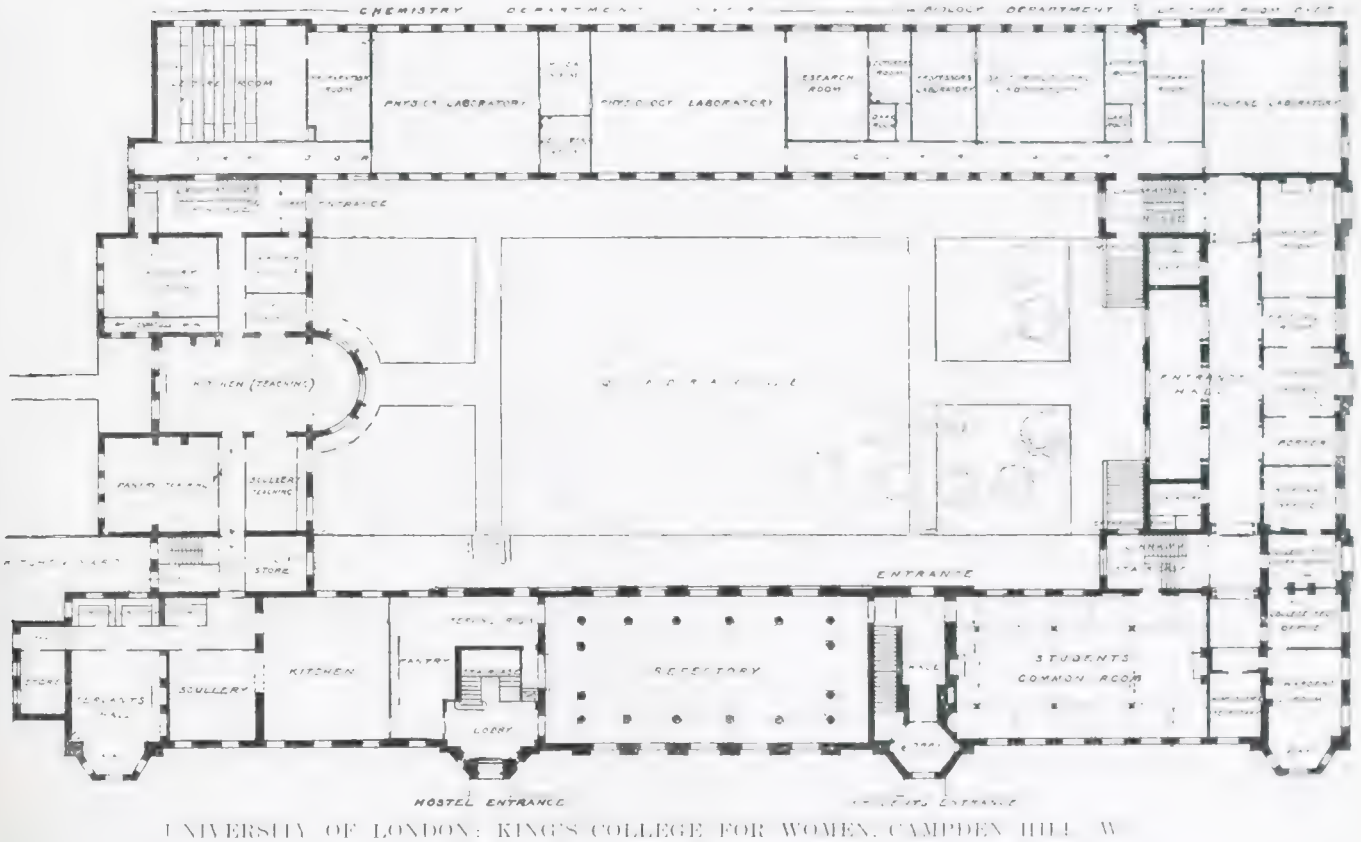
UNIVERSITY OF LONDON: KING'S COLLEGE FOR WOMEN.

[WITH ILLUSTRATIONS.]

The site of this college is situated at the corner of Campden Hill-road and the Duchess of Bedford-walk, and is about 90ft. above Ordnance datum. The buildings are planned around a central quadrangle, and consist of the College, the Laboratories, the Hostel and Refectory. The College faces Campden Hill, and has a central entrance-hall; the various administration rooms are on the ground floor, and also the students' common room, the upper floors consisting of lecture- and classrooms. The Laboratories are all on the north side of the site, mostly two floors high, and consist of physics, physiology, bacteriology, biology, chemistry, psychology, hygiene, and laboratory for special kitchen work, also lecture rooms, research rooms, lecturers' rooms, etc. The Hostel is planned on the south-west corner of the site, the whole of the ground floor being occupied with kitchens and rooms in connection. In one wing are those for teaching purposes, accessible from the Laboratories entrance, and in the other wing are those for service of meals to the large refectory. On the first floor is the Students' Common Room and Staff Rooms, and the floors above contain 63 bed-sitting rooms for students, each with fireplace and window, and all 14ft. by 10ft. or larger. Every room



– SECOND FLOOR PLAN –



UNIVERSITY OF LONDON: KING'S COLLEGE FOR WOMEN, CAMPDEN HILL, W.

Messrs. H. Percy Adams and Holden, Architects.

has east, south, or west aspect. Every student is provided with a small dressing-room, 6ft. by 4ft., fitted with fixed lavatory, having hot and cold supplies. These dressing rooms are grouped together to economise plumbing and utilise the north aspect; four bathrooms are provided to every twenty-one students, also housemaid's closet, linen press, wardrobe room, and tea pantry. The corridors have end windows so that they can be well ventilated, and by the arrangement of staircases every room has two means of escape in case of fire. (The London County Council have given their approval to the plans.) The elevations have been designed in a simple treatment of the Early Georgian style, as being suitable to the Kensington district, and will be faced with red sandfaced bricks, and the cornices, copings, strings, etc., will be of Portland cement. The architects are Messrs. H. Percy Adams and Charles Holden. The drawing here reproduced [illegible] at the Royal Academy Exhibition.

NATIONAL FEDERATION OF BUILDING TRADES EMPLOYERS.

The half-yearly meeting of this federation was held on Wednesday morning in the Balmoral Room, Trocadero Restaurant, Piccadilly. There was a numerous attendance of delegates. The chair was occupied by the President, Mr. Frederick Higgs. At the opening of the proceedings a cordial welcome was extended to the members by Mr. Philip E. Pilditch, vice-chairman of the London County Council, and was briefly acknowledged from the President, who in turn offered a very hearty welcome to the representatives of colonial federations, that of South Africa, represented by Mr. S. F. Warren and Mr. H. Evans, and that of New Zealand, represented by Mr. Samuel I. Clarke, of Auckland, each of whom suitably responded.

THE SIXTY-SEVENTH HALF-YEARLY REPORT

was submitted by the President, who commented in detail on various important points. The council stated that trade continues slowly to improve. Unemployment continues low, and there is some apprehension that there will be a shortage of labour should the trade get busy; this is believed to be due partly to the demands of other industries, and partly to the considerable emigration which has been going on for some years past. The National Board of Conciliation has held two meetings, at which appeals from Birkenhead, Birmingham, Derby, and Malvern as to the classification of trades and demands for increased wages were considered and adjudicated upon. The National Joint Committee of Appeal has also held two meetings, at which rules for the working of Demarcation Committees were passed; these have since been printed and issued. Reference was made to the lengthy interview on April 30 which an influential deputation from the Federation had with Mr. Lloyd George, when the complaints of members of the way in which the Finance Act had operated to depress and discourage building, and the unfair way in which valuations were arrived at, were clearly put before the Chancellor of the Exchequer. In reply, Mr. Lloyd George re-affirmed the position he had asserted at our previous interview, and took practical steps in the shape of the formation of a small Committee to assist him in the preparation of amendments of the Act calculated to give effect to his promises, and on which Committee the Building Trade is represented. As to the control of trade conditions, it is hoped that matters will be sufficiently advanced by the end of this year to enable an agreed scheme of a practical kind to be submitted to the Federation, and for some time past negotiations have been in progress with the Institution of Municipal and County Engineers with a view to the agreement between us of a form of arbitration clause for use in public contracts providing for the reference of disputes to an independent arbitrator. While willing to recommend such a clause, the council of that body thought it necessary to attach to it a long list of subjects, which at the discretion of the engineer of a public body should be exempted from the purview of the independent arbitrator and left to the sole arbitrament of the engineer or the public body. The Administrative Committee felt that it was inexpedient to accept the clause as suggested by the engineers. The Committee of the Institution, however, declined to make any substantial concessions, and the negotiations have therefore dropped for the moment. The Administrative Committee, therefore, now recommends its local branches to seek, by direct negotiations with their public authorities, to obtain the insertion of an arbitration clause in local contracts not less favourable than that of the agreed form of contract. It is the practice of the War Office to require priced schedules to be deposited under seal along with the tender—these are returned unopened in the case of those tenders which are not deemed acceptable. The Lancashire and Cheshire branch complains that this practice involves extra trouble for those tendering, and ought not to be persisted in, besides being against the rule of that Federation which prohibits its members from sending in priced schedules with tenders. Correspondence has taken place with the Director of Army Contracts on the subject, but with negative results so far. Under an Act of 1885, which has not hitherto been applied to the Federation, the Inland Revenue are demanding a payment of 5 per cent. on the Federation revenue, so far as derived from investments. This is by way of succession duty. The Federation is objecting on the ground that the Act was not intended to apply to trade unions, whether of workmen or employers. It is not known yet whether the objection will be upheld. It is proposed to hold a conference of the secretaries of the Federation in October next. Much activity in organisation work continues in most of the Federation area, and especially so in the Lancashire and Cheshire and N. Wales Districts, where a well-planned campaign has been carried on throughout last year and still continues, with gratifying results in the shape of a substantial increase of membership, and the adhesion of thirteen freshly-formed associations. Progress of a similar kind is reported from Yorkshire, with five new associations, South Wales with one, and the Eastern Counties with one. The Dublin association has been reorganised so as to include all branches of the trade, and much credit is due to the hon. sec., Mr. McLaughlin, and those who supported him in the difficult task of bringing the various branch trades into the scheme. Demands from workmen and concessions have been and continue numerous. Generally there is a demand from all trades for advances of about 1d. per hour, and in the majority of cases an advance of about an ½d. per hour is being conceded; but in those districts where the wage level is markedly lower than that of neighbouring districts a determined effort is being made by the operatives to level up. In some cases a substantial shortening of hours has occurred—e.g., Dublin, from 54 to 50 hours.

Mr. W. M. Blackburn, of Newport, Mon., seconded the adoption of the report.

Mr. F. Woods, of Bolton, thought it was a very unsatisfactory state of things that all but some 1,200 to 1,500 of the 5,700 members belonged to the North of England. Efforts ought to be made to strengthen and extend the Federation's membership in London and the Midlands and the South of England. There needed to be a more definite and universal organisation of building trade employers to meet the approaching complete amalgamation of trade unions.

Mr. Amphlett, of Birmingham, Mr. C. W. Green, of Liverpool, Mr. Smith, of Birmingham, and others having spoken, the report was unanimously received and adopted.

THE AMENDING REVENUE BILL.

The President referred to the steps which had been taken by the Federation and by the Institute of Builders to remedy the grievances under the Budget of 1909 with regard to increment duty, valuations, and duties on undeveloped land. After the interview with the Chancellor of the Exchequer which the Federation and Builders' Institute had on April 30th, Mr. Henry Holloway was appointed to confer on behalf of the builders with the Chancellor as to the drafting of an amending measure which would remedy the complaints of the trade, and at their request a skilled lawyer was to be associated with Mr. Holloway in this work. After that they and Mr. Holloway heard nothing at all from the Chancellor until the draft of the amending Revenue Bill was put into their hand. This measure was, as they all knew, discussed in the House of Commons the previous evening (Tuesday), and having passed second reading without a division, was referred to a committee of the whole House. A Committee of the Council of the Federation had considered this Bill carefully, and also a memorandum prepared by Mr. Lloyd George, and had passed the following resolution, which having been endorsed by the Council, he would now move:—

That this Federation recognises that the Revenue Bill just introduced into Parliament, as explained by the memorandum prepared by the Chancellor of the Exchequer, appears likely (provided its interpretation in practice accords with the principles expounded in the said memorandum) to go far to remove the difficulties experienced in the development and sale of land and buildings since the 1910 Finance Act came into operation. The Federation holds that it leaves untouched, however, several important points which were brought to the Chancellor's attention at the interview of April 30 last, and feels that every opportunity should be seized towards effecting a remedy.

Mr. S. Smethurst, of Oldham, seconded the resolution.

Mr. William Shepherd, of Bermondsey, said he thought they would do well to accept the Bill in perfect good faith as an attempt to give the trade an instalment of what was just. He had had a conversation with Mr. Peto, M.P., who, looking at the Bill and Memorandum from the builders' viewpoint, thought the Memorandum genuine and bona fide, and believed that the amending clauses would effect their purpose. He feared that if an extensive list of amendments were drafted and pressed to division, the Bill would doubtless be shelved to another session.

The resolution was carried unanimously.

FORM OF CONTRACT.

The President brought forward certain amendments suggested on behalf of sub-contractors to the agreed-on form of contract, and also the R.I.B.A. Committee's proposals for amending Clauses 20 and 21 of the agreed form. The object was to deal with the case of the sub-contractor, who was employed by the builder but was not directly appointed by the architect, a point of considerable difficulty. It was intended to appoint a sub-committee of the Federation to act with one to be appointed by the Institute of Builders to consider carefully the drafting of the clause, and he would therefore propose that the matter be adjourned until their January meeting.

Mr. Moffatt, of Birmingham, seconded.

After some remarks by Mr. James Brown, the postponement of the matter was agreed to.

THE PLASTERERS' STRIKE.

Mr. S. Easten, of Newcastle-on-Tyne, brought up this topic, remarking that when a dispute arose in Ipswich, Messrs. Walter Lawrence and Son, of London, appealed to a conference of the leading officials of the National Joint Committee, who decided that their appeal was not in order, as it was not competent for Messrs. Lawrence to be outside the purview of the national agreement for the London dispute, and inside it for an extension of that dispute to Ipswich. Messrs. Lawrence naturally felt that unless the Federation could help them at the point, the organisation was useless to London employers, and pertinently asked, why should they belong to a federation which proved of no service directly difficulties arose. Mr. A. G. White, the able secretary of the Federation, had suggested that there was only one real remedy that London should enter both national schemes of conciliation. That would not prevent her retaining her provisional arrangements, subject to an appeal lying from them, in the event of no decision being arrived at, to the central and national conciliation boards.

The President said Mr. Lawrence's position was, he thought, impregnable. He would propose the following resolution:—

That this meeting greatly regrets that, owing to the circumstances, Mr. Lawrence's appeal could not be dealt with by the general body, and urgently requests that London shall come into the National agreement in respect of plasterers.

Mr. Cooke, jun., of Preston, seconded the motion.

After some remarks by Mr. George Macfarlane, of Manchester, Mr. James Brown, Mr. Audley Perkins, of Bristol, and others, the motion was carried.

CONTROL OF TRADE CONDITIONS.

Considerable discussion arose as to the giving of discounts by builders' merchants and manufacturerers to building owners and other persons unconnected with the building trades, and it was asserted that municipal bodies could sometimes claim larger discounts than those given to the trade. It was pointed out that it would be difficult to enforce any control generally throughout the country by refusing to deal with firms who acted thus. The negotiations now in progress by the Midland centre with a certain brick association were referred to, and

eventually it was decided [illegible] sentients, on the motion of Mr. Amphlett, seconded by Mr. Hope

[illegible]

THE PRACTICE IN REGARD TO OPENING TENDERS.

On the motion of the President, seconded by Mr. Blackburn, and supported by Mr. Skinner, of Bristol, and others, it was agreed

That the Institution condemns the present practice by architects and others of receiving tenders without having them opened in the presence of the parties tendering.

It was decided that a copy of this resolution be sent to the Royal Institute of British Architects and other bodies representing architects and surveyors.

A vote of thanks to the President closed the proceedings.

RECEPTION BY THE L.M.B.A.

In the afternoon a reception was given by the President of the London Master Builders' Association (Mr. Walter Lawrence, jun.) to the members and their ladies at the Quadrant, Western Gardens, Earl's Court Exhibition. Afternoon tea and music were provided, and visits were paid to various features of the exhibition.

EXPERIMENTAL FORESTRY IN THE NORTH.

Details of a series of experimental demonstrations, carried out at Cockle Park, in Northumberland, are furnished in the new "Guide to Experiments" just issued by Professor Gilchrist, of the Armstrong College, Newcastle-on-Tyne. Some of these small plantations have been laid out for fifteen years. The Norway spruce and ash have been tried with the object of testing a mixture of shade-bearing and light-demanding species. The spruce, apparently, has done very well, but the ash has been checked by the late frosts. The pure Scotch pine is doing satisfactorily, but the Oregon and Colorado varieties of the Douglas fir, grown in alternate rows, show great irregularity, which is ascribed to the wet, stiff soil.

In the North of England pit wood is valuable, and large quantities are dealt with. The Sitka spruce and the Norway spruce unmixed were tried, the thinning not being hastened. Both plots have done well, but the former affords a clear indication of being much more rapid in growth than the common species in the locality. In alternate rows the European larch grown from Scotch and German seed is being tested, and the Japanese larch as well, but the latter has far outstripped its rivals. It not only retains its leading shoot better than the European variety, but its rapidity of growth on a poor clay soil, as well as its freedom from aphis attack, are remarkable.

Of the European trees the plants raised from Scotch seed are more vigorous than those raised from German seed; but in both cases the larch aphis has been hard at work. By dressing the soil with 16cwt. basic slag before planting, the growth of the silver fir has been increased appreciably, and where the Italian poplar died out the Japanese larch is now outstripping the Douglas fir, the latter from Oregon seed. It may be added that the plantations are protected on the west side by a shelter belt of Scotch pine twenty yards wide.

CHEAP RURAL COTTAGES.

On Saturday Lord Midleton formally declared open, at a gathering arranged by the Rural Co-Partnership Housing and Land Council, a cottage which has been built on Merrow Common, near Guildford, by Mr. St. Loe Strachey, with the object of showing that it is possible for a landlord, who is willing not to reckon the cost of the land, to build a sanitary cottage with three bedrooms, parlour-kitchen, scullery, larder, and coal-shed, at a cost of £150. A landlord could afford to let such a cottage for 2s. 6d. a week, the tenant paying rates, but the site being given. The cottage is constructed of weather-boards fitted to a timber frame, the interior being plastered. The weather-boards have been adopted as being less pervious to rain than cement blocks or slabs or than a thin brick wall. The roof is of red tiles. The cottage has been built by a firm of local builders.

Mr. Strachey admitted that he was not satisfied with his model cottage. The housing problem could not be satisfied until a cottage could be built for £100 providing three bed rooms, a good kitchen, and a scullery. Viscount Midleton, the chairman of the meeting, said if such a cottage could be built for £100 there would be an end to the housing problem. Lord Strachie (Paymaster-General) expressed the opinion that the only solution to the housing question was for the Government to adopt the scheme which had proved so successful with the Irish peasants, and make grants in aid to local authorities which would enable them to build cottages at £150 each.

Earl Lytton said that five years ago he built good cottages at £300 a pair, but he could not do it to-day owing to the increased cost of building.

On behalf of the trustees appointed at the close of the first Cheap Cottage Exhibition (Mr. Strachey, Sir W. Chance, Mr. Cooper, and Mr. Clough). Lord Midleton handed to Mr. R. L. Reiss, as Secretary and Treasurer of the Rural Co-partnership Housing and Land Council, £168, which included a surplus of £150 from the exhibition, with interest which had accumulated since. The money was to be used for the encouragement of cheap construction. Mr. Reiss acknowledged the gift, and explained the operations of his society.



HOUSE AT CHISLEHURST. Mr. E. J. May, F.R.I.B.A., Architect.

HOUSE AT CHISLEHURST.
WITH [illegible] GALLERY.

Externally the walls of this house are plastered and whitened, and all the woodwork is oak, limed over, cleaned off, and left to weather. The roof is tiled. Internally the joinery of the sitting-rooms is executed in oak, also the staircase, as well as the first floor gallery. The joinery of the smoking-room is made out of old oak. We give two plans with the perspective view. The builders were Messrs. T. Rider and Son, of London. The architect is Mr. E. J. May, F.R.I.B.A., of Bloomsbury.

BUILDERS' WATER SUPPLIES.

At Friday's meeting of the Metropolitan Water Board, the Appeal and Assessment Committee reported upon the important case affecting supplies to builders, of the Board v. Johnson and Co. In this action, which has been fully reported in our columns at each stage of hearing, the Divisional Court, by their decision in December last, upheld the judgment of His Honour Judge Woodfall at the Westminster County Court. The circumstances of the case were that the War Office were making extensions to the Hounslow Barracks, and contracted with Messrs. Johnson and Co. to carry out the alterations. The barracks were supplied by meter for domestic and non-domestic purposes, and Messrs. Johnson and Co. obtained their building supply through this meter, with the permission of the War Office. The Board contended that Messrs. Johnson were persons requiring a supply of water for building purposes within the meaning of Section 17 of the Charges Act, and that although they took their supply through the War Office meter,

they were liable to pay to the Board the charges specified in the Section referred to. Judgment of the Divisional Court upheld the Board's contention. Messrs. Johnson and Co., however, took the case to the Court of Appeal, and on June 18 last that Court, consisting of Lord Justice Vaughan-Williams, Lord Justice Buckley, and Lord Justice Hamilton, allowed their appeal, with costs. The committee now reported that as a matter of practice applications for building supplies have always been considered on their merits, and with due regard to a resolution of the Board of December 20, 1907. Where supplies have been taken from metered sources regard has been had to the fact that the Board would be receiving payment for the meter supply in the ordinary way, and had, on appeal, made allowances from the meter consumptions, whilst in other similar cases a modified building rate has been accepted. In the case now in question, however, the Court took the view that there had been no request for a supply under Section 17 of the Charges Act, and that in the absence of a specific request the Board could not regard the builders as falling within the terms thereof. In the course of the case it became evident that the Court were of opinion that the resolution of the Board of December 20, 1907, was of too general a character to conform with the provisions of the Section. The committee therefore held that it would be necessary to rescind the resolution in question and to adopt the one now submitted for consideration, which has been drawn after consultation with counsel. It was, therefore, decided, in accordance with the committee's recommendation—

(a) That the following resolution of the Board of December 20, 1907, be rescinded —

That, pursuant to the authority in that behalf, given to them by Section 17 of the Metropolitan Water Board (Charges) Act, 1907, the Board do hereby determine that, in lieu of affording supplies for building purposes under the said Section by measure, such supplies be afforded, from April 1, 1908, until further order, at the rate of 7s. per £100 of the probable total cost of the building, or part of a building for which the supply is required, after making such allowance as the Board, by their Appeal and Assessment Committee, may think reasonable for decorative or iron or steel work not requiring the use of water.

(b) That, pursuant to the authority in that behalf given by Section 1 (5) of the Metropolis Water Act, 1902, and the third schedule thereof, and in accordance with the powers given by Section 17 of the Metropolitan Water Board (Charges) Act, 1907, it be an instruction to the Appeal and Assessment Committee of the Board to consider and determine as to all rates and charges and matters connected therewith for the supply of water for building purposes, provided always that when the supply for building purposes is not afforded by measure it shall be afforded at a rate of 7s. per £100 of the probable total cost, after making such allowance as the Appeal and Assessment Committee may think reasonable for decorative or iron or steel work not requiring the use of water.

THE PRESERVATION OF DECAYING STONE.

The Science Standing Committee of the Royal Institute of British Architects has recently had some communications from the Society for the Protection of Ancient Buildings, which has courteously placed at its disposal the experience it has gained up to the present in the matter of treating decayed stone, and the chairman of the Science Standing Committee submits a précis of the above Society's statements for the benefit of readers of the R.I.B.A. Journal as a subject of general knowledge. The Society prefaces its remarks by saying that no process can be regarded as final—though many have most valuable results—and that masonry needs continual attention, especially in districts where the atmosphere is charged with sulphur.

Previous to any treatment the Society recommends the removal with stiff hair brushes of the crumbling surface, except where this would obliterate fine carving, and the raking out of loose joints, and that in these operations steel tools and wire brushes are never to be used. When bituminous deposit is present on the surface of decaying stone it must be removed before the preservative solution can reach the stone. Where this cannot be effected by brushing alone, a jet of steam will soften the deposit. An acetone paint-remover may be used to assist this process. Joints are then made good in "good hydraulic lime mortar," and where the mortar would otherwise be in large masses pieces of well-burnt hand-made tiles saturated in water should be inserted, to prevent shrinkage in setting and so causing cracks. Also by wedging pieces of tiles firmly into the joints or into chases cut for the purpose the mortar gains much strength.

The writer may here draw attention to the growing recognition of the truth of the contention that Portland cement exercises a deleterious action on stone, a matter upon which researches are being made by an International Committee.

For treatment of stone containing a large percentage of lime, hydrate of barium is recommended (about 1lb. of the crystals to a gallon of soft water, frequently agitated in a closed vessel). It might be remarked that this quantity would hardly dissolve in cold water, which can carry in solution about 7 per cent. at 40deg. C., 18 per cent. at 60deg. C., and as much as 90 per cent. at 80deg. C. The solution is very caustic, and should be preserved out of contact with the air, or it will soon exhibit a milky deposit and lose its virtue, but it may be kept in closed vessels indefinitely. It should be freely dabbed on with a soft brush, and the drier the stone and atmospheric conditions the better the result. As many as fifty coats at intervals are recommended in bad cases. The Society gives an interesting report received from Mr. Riley, F.R.I.B.A., the Superintending Architect to the London County Council, of the recent treatment of York Water-Gate by the above method. Here, after the removal of two hundredweight of deposit of dirt and soot, in addition to stalactites and bituminous matter which had to be softened by the use of steam, 354 yards super. of Portland stone, after repointing with mortar, were treated during the advantageous conditions of the dry summer of 1911. Twelve to thirty coats of baryta (eighteen on the average) were given to the stone, and an analysis after a month proved that penetration had taken place to a depth of ⅜in. It should be explained that unless the lime in the stone has been converted into sulphate baryta water will not enter into combination, and so the particles of still sound stone may remain open to attack by sulphur-laden atmosphere. The monument above mentioned is in so central and accessible a position, and so near (much of it below) the surrounding gardens, that it should form a valuable object-lesson to Londoners interested in assessing the merits of the process.

Another process referred to is that in which a solution of sodium silicate (water-glass) is applied, and subsequently one of sodium arsenate (a chemical used in calico-printing). The result is stated to produce a binder and filler—possibly chemically unstable—rather than a stone reconstructor; certainly any chemical interaction between these compounds seems doubtful on theoretical grounds. For sandstones the Society has no specific except to suggest the application of fillers such as alum and soft soap or paraffin wax in solution in some mineral oil, neither very lasting, as the report itself states. Finally, a thin coating of lime-wash made from fresh lime and boiling water and applied in two or three coats is strongly recommended as a general preservative, with such inert colouring matter (as, for example, umber) in the last coat as is required to tone with the surrounding work. It is stated that this process has been adopted at Westminster Abbey. The writer certainly knows of one case in which this method was most effectively applied to a decayed Jacobean coat-of-arms in limestone in high relief, and in a damp and sunless situation, whilst almost adjoining a new building was suffering from rapid decay after recent treatment with a patent preservative.

As to sandstones, it would be interesting to try the effect in some practical case of allowing a solution of pure silica to flow slowly (as from a sparge pipe) over the decayed work for a reasonable period. A 5 per cent. solution of silica in water is obtainable, and on evaporation the silica deposited will readily become insoluble, and should thus act as a cementing agent, though the process would be slow.

OBITUARY.

The death occurred on Monday, after a protracted illness, at his residence at Strood, next Rochester, of Mr. William Ball, J.P., one of the best-known men of the district. Besides being a member of the City Bench, he was also a magistrate for the county. Until 1902 he had been for twelve years an Alderman of the Rochester Town Council. He was also a member of the Medway Conservancy and the Rochester Bridge Wardens and a director of the local gas company. For many years Mr. Ball carried on business as a contractor, and had undertaken many extensive works in the county, including the construction of several road and railway bridges and the rebuilding of Queenborough Pier. Seventy-three years of age, he leaves one son and two daughters, while two brothers and a sister (widow of the late Joseph Maas, the famous tenor) also survive him.

CHIPS.

The death is announced, in his eightieth year, of Mr. Charles J. Greaves, who for fifty years had been in business at Homerton as a builder and contractor.

At Bristol University the Rev. D. H. S. Cranage, D.Litt., F.S.A., will deliver a course of lectures during the autumn term on "Reason in Gothic Architecture."

A new Evangelical Protestant church at Fecitt Brow, Blackburn, has been opened. Mr. F. J. Parkinson was the architect, and Messrs. Marshall and Tinning, of Blackburn, were the contractors.

In the case of the application on behalf of George Woolaston, residing and carrying on business at Rookmead-road, South Hackney, builder and decorator, the order of discharge has been suspended for three years.

The Cook Construction Company, of Sudbury, Ontario, and A. B. Wheaton, of Amherst, are joint contractors for the Halifax Terminal Railway at a contract price of 1,500,000. The line is five miles in length, and is to run from Rockingham to the site of the proposed terminal works.

The new buildings of the Hospital for Epilepsy and Paralysis, Maida-vale, which were opened by Princess Louise last week, provide for seventy patients and twenty-six staff. The cost of the total building has been £35,000. The architect is Mr. Keith D. Young, F.R.I.B.A., and the builders for the completing wing just added were Messrs. J. W. Falkner and Son.

At a meeting of the Barnet Board of Guardians on Friday it was reported that the Local Government Board would not sanction any enlargement of the present infirmary, but recommended the erection of a new one in the workhouse field. After discussion, the guardians adopted the infirmary committee's recommendation that a new infirmary, to contain 192 beds, should be built, at a cost of not more than £80 per bed.

Messrs. E. A. Roome and Co., the well-known builders, held their annual staff outing on Saturday, July 26. A large party travelled by special saloon carriages to Clacton-on-Sea, where a capital dinner and tea were provided at the Warwick Castle Hotel. The chair was taken by the managing partner, Mr. F. J. Gayer, and following the usual toasts, a most successful concert was held. The party spent a most enjoyable day, which should still further strengthen the good feeling which exists between the firm, the foreman, and the staff.

While Talbot cars were winning their prizes at the Leicestershire A.C. hill climb last Saturday, the staff and employees of Clement Talbot, Ltd., were holding their annual sports in the fine twenty-five-acre field adjoining the Barlby-road works. No less than twenty-six events comprised a lengthy programme, of which the principal item was the mile run for the championship gold medal, won by W. T. Bishop after a most exciting struggle over the last 200 yards. An inter-departmental tug-of-war was decided in favour of the finishing shop, and a similarly-contested one-mile relay race was won by the office team against four teams representing the works. A score of other races and varied competitions kept the hundreds of onlookers interested until the distribution of prizes by Mr. T. Long concluded a most successful afternoon's sport.

Currente Calamo.

All will hope that the expectations of the National Federation of Building Trades Employers, and their acceptance of the clauses in the Revenue Bill which are to relieve builders from the injustice they have suffered during the last three years, are justified. We sincerely trust so. But, as the Resolution adopted at Wednesday's meeting has it, the Bill will only satisfy us "provided its interpretation in practice accords with the principles expounded in the . . . . Memorandum." Mr. Lloyd George's sentiments are as exalted and unexceptionable as those of Mr. Joseph Surface. But he lacks the faculty of utilising the co-operation of those who know more than himself. Had he, after the meeting of April 30, adhered to the arrangement by which the help of Mr. Henry Holloway and a skilled lawyer was to be secured, the amending clauses would in all probability have been drafted in a clear and satisfactory manner. Instead of that, weeks passed, and no further communication with the builders was vouchsafed till the draft of the amended Revenue Bill was put into their hands. The result is that the operation of the amended Bill will entirely depend on its interpretation. If that is in accordance with the principles expounded in the Memorandum, we shall be satisfied; but our past experience justifies doubts which only events can dispel.

Mr. Reginald Blomfield, in a letter in *The Times* of Tuesday last, states the facts with regard to the present condition of art teaching in this country under the auspices of the State. His argument and his facts are identical with those we have striven for several years past to make clear, and no mere ad captandum criticism or abuse of architects, such as we have been favoured with, can upset them. Mr. Blomfield says:

"The State pays a large sum of money annually in the subvention of schools of art with a view to raising the level of the arts, more particularly in connection with manufactures. Evidence which cannot be put aside proves that after more than fifty years of experiment that object has not been attained. Art has been spread so widely and so thinly that its quality has been lowered: the manufacturers do not care for it, and the majority of students turned out by these schools cannot live by their art or craft. On the other hand, there has come into existence an entirely new type and a new profession, that of 'the art master.' He did not exist a hundred years ago; but he is now both energetic and aggressive, and we are asked to subordinate the aims, methods, and ideals of our art training to the exigencies of his career. It is from this ever-deepening rut that the State-aided art training of the country has to be rescued."

And quickly, or we fear the "art master" will effectually end by the extinction of every spark of originality or ability among State-trained art students, or their stunted and useless development into art masters.

The disgraceful way in which absurdly excessive estimates for public buildings are "rectified" at the fag end of the session by diverting huge surpluses to other objects, consent to which is extorted from Parliament in highwaymanlike fashion, is simply "monstrous," as Mr. Gordon Harvey, a Ministerial M.P., says. On Tuesday Standing Committee B met to consider the Public Buildings Expenses Bill, introduced on behalf of the First Commissioner of Works by Mr. Wedgwood Benn. The Bill appropriates the surplus of £145,000 from the sum of £600,000 which was allocated under the Finance Act of 1908 to the building of the new Local Government Board offices in Parliament-street and Great George-street, in the following manner: Home Office Industrial Museum, £25,000; Admiralty (additional accommodation), £55,000; and the College of Art, South Kensington, £65,000. As Mr. Hicks Beach pointed out, the Committee has sanctioned the diversion of money which Parliament had voted for a particular purpose to other and totally different objects. Mr. Wedgwood Benn's excuse was that the difference between the latter estimates and the actual expenditure was due to the fact that the Government made an exceptionally favourable contract for the completion of the Local Government Board Offices. Our own information points to a totally different reason, of which the public may hear more by and by. Mr. Gordon Harvey, a Ministerialist, denounced the monstrous inaccuracy of the estimates framed by the Office of Works Department.

That inaccuracy has, of course, been before exposed, notably last year by the Estimates Committee. It is inevitable, however, it seems, so Mr. Wedgwood Benn says! Accuracy would mean "delay." All the Office of Works is capable of doing is "to calculate the cubical contents of the building they propose to erect and get the nearest estimate they can in each case. That was what had been done, and he did not think it was possible to say more than that these were the best estimates they could frame." We suppose the estimates for the £145,000 now appropriated otherwise have been prepared in the same fashion? The "Industrial Museum" at the Home Office, it seems, is intended for an "exhibition" of safety appliances used in mines and factories. Two old buildings in Whitehall are to be pulled down to extend the Admiralty buildings, and an unsuitable iron structure is to be replaced at the College of Art.

Mr. Bennett-Goldney proposed an amendment to the effect that the designs for these new buildings should be thrown open to competition, and that the choice of the most suitable should rest with a body of persons competent to adjudicate upon matters relating to architecture. Commenting unfavourably upon some of the Government buildings, he alleged that when the new Admiralty Offices were projected the wrong design was shown by some officials to a member of the Government, who submitted it to certain members of the Royal Family. When the Minister discovered his mistake he felt it was impossible to go back upon what had been done, and the result was that the wrong building was erected. Mr. Wedgwood Benn, of course, contended that the matter should be left to the Office of Works, which had some "very expert designers," and was, as a matter of fact, considering whether or not the design should be thrown open to competition. Let us hope, if it decides to have a competition, the right design will be carried out this time. These "mistakes" of officials, first with regard to designs chosen, and then as to the cost of execution, are perhaps standing jokes at the Office of Works, but they are very serious matters for the taxpayer. That once again it all emphasises the absolute necessity for a competent Ministry of Fine Arts goes without saying, in spite of Mr. Asquith's dictum that such a suggestion is "not practicable."

The National Land and Home League has addressed a memorial to the Prime Minister, urging the importance of fresh legislation for dealing with rural housing. The memorial states that as a result of a circular letter addressed to the rural district councils of England and Wales last year, 182 councils replied that cottages were required in their districts, 261 councils replied that cottages could not be built without placing a burden on the rates, and 169 councils declared themselves in favour of State aid for building. So far as we know, no official inquiry has been made by the President of the Local Government Board to ascertain the views of the rural district councils in regard to housing, so these figures obtained by this League are of considerable value. The memorial expresses its approval of the principles embodied in Sir Randolph Baker's Housing Bill, which passed its second reading by a majority of 140 last April, and points out the obvious advantages of a grant in aid in respect of the annual loss, instead of a capital grant to local authorities. The League's memorial is signed by men of all parties and many well known social reformers besides. We heartily support it. We have said before, and we say again, it is a scandal that Sir Randolph Baker's Bill was smothered; and presently, when humbug is talked by the mile in autumn speeches by members and their partisans about the good intentions of the Government, we advise their hearers not to forget it.

The Metropolitan Water Board determined last Friday to build its new offices on its own property at New River Head, Rosebery-avenue. We are rather glad the Gray's Inn-gardens site was not selected, though hardly for Mr. FitzRoy Doll's reason! Mr. Doll says that every man in the Strand who has a complaint says, "Oh, here's the Metropolitan Water Board; I'll go and talk about that stop-cock. No one would go to Rosebery-avenue unless he was on business. Our experience is that a good many people have very good causes of complaint, and that it is a poor prospect for us all if the Board is going to house itself in Rosebery-avenue to escape worried customers. However, it is only a penny tramway or 'bus-ride to New River Head nowadays from almost anywhere! We rather regret to gather from the report of the meeting that the Benchers of Gray's Inn seem ready to sell their stately garden for £55,000. It has narrowly escaped what we should regard as misappropriation more than once, but surely public opinion will never allow it to be built over!

The excuse offered at its last meeting by the Metropolitan Water Board, as reported in another page, for its high handed treatment of Messrs. Johnson and Co., who successfully took their case to the Court of Appeal, seems to us of the flimsiest character. It is so far satisfactory, however, that the decision in the Appeal Court has taught the Board common sense, though the recommendation rescinding the Resolution of December 20, 1907, is still open to misinterpretation in individual cases, and builders will have to keep their weather eye open on the Appeal and Assessment Committee and its "allowances." The fair and honest way of supplying water for building operations is by meter at a reasonable charge, and it will become a question, we fancy, before long, to be agitated by the representative institutions of the trades concerned.

The debate last Friday in the House of Commons on the extraordinary methods of the Road Board must surely lead to the thorough reorganisation of that body of it

does not reform its procedure. Hitherto, its financial policy has been much the same as that which governed the expenditure of the daughters of the Vicar of Wakefield, who were always allowed to have a guinea in their pockets, but might on no account spend it! The Board's last balance-sheet showed over two millions and a half of investments, and by the end of the present financial year it will have a clear balance of at least £1,600,000 to its credit. The Board's income is £1,200,000 a year. London in three years has contributed £600,000, and, so far, received £43,000. Meanwhile, the London ratepayer, who contributes to the petrol tax and carriage duties heavily, has also to reconstruct or patch up his own roads, while the proceeds of the taxes allocated to the Road Board might as well be "hypothecated" to road improvements in Timbuctoo for all the benefit London derives.

The outcome of the long wrangle about the Admiralty Arch is so far satisfactory in that the scheme now adopted is better than that it supersedes. It is, of course, not all that could be wished. The clearance, now settled, will be less inconvenient and more suitable as a fitting approach to the Processional road than seemed probable. It can never be what it might have been made. That, as usual, is "nobody's fault." When separate and, to some extent, rival authorities squabble, London, as a whole, usually comes badly off. With more forethought at the outset, inspired by some common authority to which all concerned might have listened, the "finest site in Europe" might indeed have been nobly utilised as a splendid adjunct to the Memorial. It is only one more of the mistakes made, with the best intentions—of the sort that pave the road to the hell in which Mr. Asquith and other sticklers for the "practical" doubtless delight to contemplate the tortures of those who believe in fitness and beauty.

The Parliamentary Committee of the Trade Union Congress last Friday issued the figures of the ballot among unions in the building trades on the question of amalgamation into one large union, to be known as the Building Workers' Union. Unions with a membership of over 300,000 were originally concerned in the proposal, but owing to dissatisfaction with the details of the scheme, the Carpenters and Joiners' and other unions dropped out, leaving sixteen unions with an aggregate membership of 112,235 to take part in the final ballot. Votes were taken on two separate schemes, one providing for amalgamation for "trade" purposes only, and the other for complete fusion for all purposes. The first scheme was to be obligatory on all unions taking part in the ballot, and the second was optional. The ballot resulted as follows:—Scheme 1: For, 14,279; against, 11,483. Scheme 2: For, 9,611; against, 12,001. The majority in favour of the first scheme on the aggregate vote is only 2,796, which is far short of the statutory two-thirds majority, and the total votes cast represent less than one-fourth of the total membership. The second scheme is rejected by a clear majority of 2,390. The result is "not deemed satisfactory," but it has been decided to hold, on September 15, a further conference of interested societies to discuss a new scheme.

It is stated that the lowest price which the Duke of Bedford and his trustees will accept for the 2¼ acres proposed as the site of the new buildings of the University of London is £210,000, plus the cost of the vaults, £8,000. This, it is stated, was made clear in a report of a sub-committee of the University Senate considered at an extraordinary meeting on July 17, 1912. In our opinion, the site is not worth the money, when the inconvenient severance of the proposed buildings is borne in mind, and the practical impossibility of dealing in a fitting architectural manner resulting therefrom.

During the King's visit to Liverpool, a correspondent of one of the local papers writes: "The genius who had the roads tarred for the occasion is a public benefactor. He kept my little girl still for hours, leaning on a barrier while we saw the procession. In fact, when I wanted to move homewards, she still stood still! The reason was that both her feet were firmly stuck to the road. We had to unbutton her shoes and lift her out of them. A kind man pulled them up and scraped them with a penknife." We can quite believe it!

COMPETITIONS.

BRADFORD.—An estate for workmen on town-planning lines is the subject for a competition at Bradford. The city council offer premiums of £300, £200, and £100 respectively for the three schemes to be selected by Mr. Henry T. Hare, F.R.I.B.A., the appointed assessor. The dwellings are to be shown in detail. The date for reception of the drawings is fixed, October 4 next being the day appointed.

BRISTOL.—At the last meeting of the Bristol Education Committee, the sites and buildings sub-committee reported that ten sets of designs from nine competitors had been sent in for the proposed Penpole School, Shirehampton. Mr. W. L. Bernard, F.R.I.B.A., of Bristol, the assessor, had reported on the plans, and on his recommendation it was resolved that No. 4 be adopted, subject to the usual conditions. The chairman of the education committee proposed to open the envelope containing the names of the authors of No. 4 set, which were found to be Messrs. Herbert J. Jones and Son, 52, Broad-street, Bristol. The building is to accommodate 520 scholars, and the estimated cost will be £4,155 if stone is used for construction, and £4,255 if built of brick.

CANBERRA.—In connection with the proposal of the Australian Federal Government to call for competitive designs for the public buildings at Canberra, the site of the new Commonwealth capital, conditions have been drafted for competitions as far as the Parliament House is concerned. The Government desire to secure the widest possible competition for the structure, the design of which will set the keynote for all the other public buildings at the capital. It is intended to provide in Parliament House office accommodation for each member of Parliament somewhat similar to that which is supplied for United States members at Washington. Before making the conditions public, it is intended to submit them to certain architectural bodies in England and in Australia. The amount of public money already expended on the capital is £420,000, and the total area of land acquired for the site is 88,594 acres.

REIGATE.—Six thousand pounds is estimated as the cost of an Infirmary to be built at Reigate. Twenty guineas is the premium to be given to the design placed second by the guardians, and the author of the chosen plan is to be employed to carry out the work, his fees being fixed at three hundred guineas, with travelling expenses added. Rather less than 40 architects sent in applications to be chosen to compete, and the London firms selected to send in plans are Messrs. Edwin T. Hall, Saxon Snell and Spooner, and Herbert W. Wills. The local architects admitted to the competition are Messrs. D. J. Barry, T. R. and V. Hooper, C. Nicholas, E. Penfold, J. M. Pym, and C. E. Salmon; also Messrs. G. Gordon Stanham (Copthorne) and P. Watson (Merstham), all in the union; and Messrs. Wheeler and Goodman, of Horsham.

NEWCASTLE-ON-TYNE.—Mr. A. W. S. Cross, V.P.R.I.B.A., is the author of the designs placed first for the Public Baths at Benwell, Walker, and Heaton, for the council at Newcastle-on-Tyne. The plans sent in by Messrs. Wallis and Bowden, of Westminster, were placed second, and Messrs. Wright and Chapman, of Newcastle-on-Tyne, won the third premium. Mr. H. W. Wills, F.R.I.B.A., was the assessor.

UNIVERSITY COLLEGE.—The following awards have been made at the University College School of Architecture:—Donaldson Silver Medal: Ian Hamilton, B.A. (Oxon.). Carpenters' Company Travelling Studentship: W. G. Whincop. (The winner of last year's travelling studentship, Mr. S. R. Miller, presented a set of measured drawings and sketches of Prior Park, Bath, Wilton House, etc., and has now complied with all the conditions of the studentship). Evening Design Class: First prize, J. G. Swinton; second prize, H. S. Taylor; third prize, G. G. L. Teyte; honourable mention, R. A. Walter. The prize given by the Technical Journals, Ltd., of their portfolio of "Standard Examples of Architectural Details," has been awarded to H. S. Taylor for his sketches and measured work.

ARCHÆOLOGICAL.

RECENT EXCAVATIONS AT ABYDOS.—At the rooms of the Royal Society, Burlington House, on Friday, Mr. T. E. Peet gave a lecture with lantern illustrations on the discoveries made during the past year at Abydos, which had been concentrated on two sites, that of the Ibis cemetery, and a mound near a deserted Coptic village. The mound was stratified, an exceptional arrangement, and they had an opportunity of investigating several periods of Egyptian history on the spot. On the top of the mound were the Coptic houses, and below them tombs of the XIIth and XVIIIth Dynasties. Two objects which they found here had been claimed by the Cairo Museum. One was a bronze lamp with swinging lid and a cock on the top, and a leaden vase 2ft. high. Under the floors of the houses were skulls of domestic oxen which had probably been placed when the foundations were put in for good luck. Below an amastabas cemetery, and forming the lower strata, were kilns of the predynastic period, used for pounding wheat.

The building of a new mission room at the Old Bell, Harpenden, is now in hand, and the extension of Sunday-school premises at Cold Harbour, which comes under the same contract, has also been commenced. The builder is Mr. E. C. Jarvis, of Harpenden.

Mr. E. S. Stewart, Local Government Board Inspector, has held an inquiry into the application of the Bridlington Town Council for sanction to borrow £1,340 for a scheme to erect in North-Back-lane twelve two-roomed houses to be let to old people at 3s. a week, under the Housing of the Working Classes Act.

The City of York Waterworks Company, Ltd., have instructed the Trussed Concrete Steel Company, Ltd., of Westminster, to erect, adjoining the Severus Hill reservoir, York, a water-tower on the Kahn system of concrete construction, to have a capacity of 300,000 gallons. The tank will be about 28ft. in height by 48ft. in diameter, and will be carried at a height of 72ft. from ground level on a series of octagonal columns, 26in. diameter, with braces measuring each 16in. by 8in.

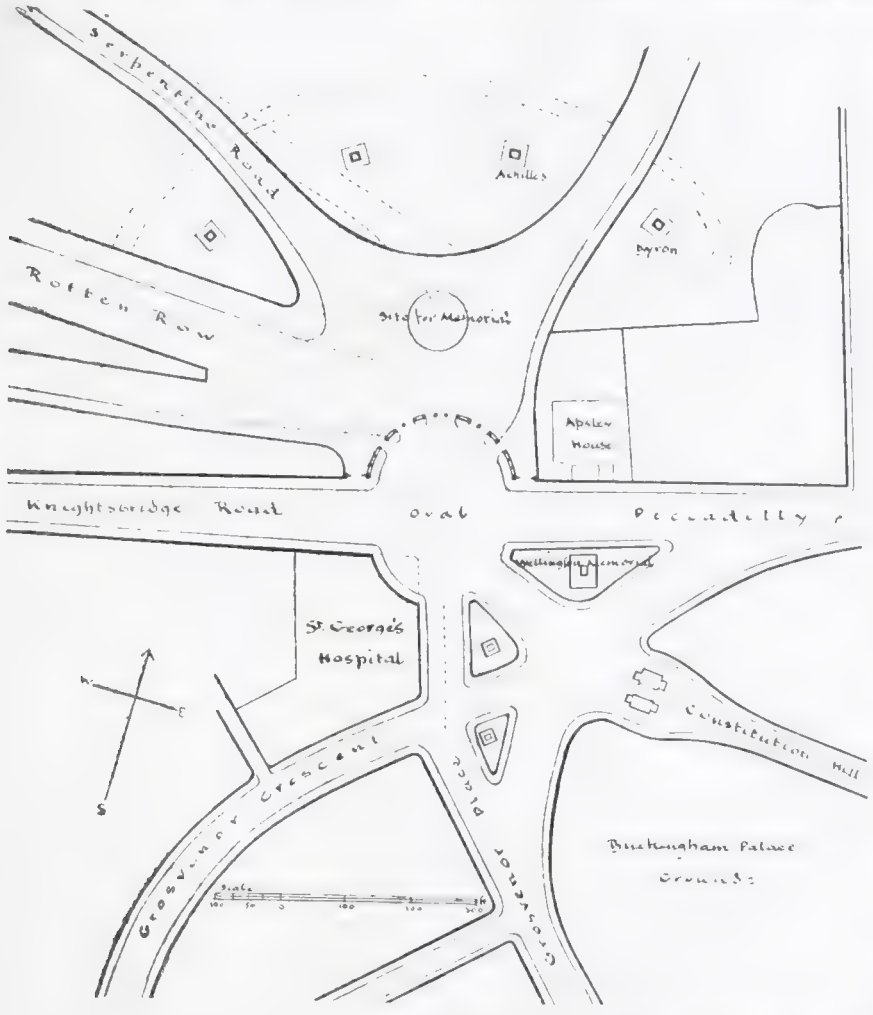
At the last meeting of the City of London Corporation, plans by Mr. Edwin Cooper for the new offices of the Port of London Authority, to be erected upon a site abutting on Trinity-square, Savage-gardens, and Seething-lane, and the formation of two new thoroughfares on the North and South sides, were approved, subject to the roadways and sewers being constructed to the satisfaction of the Corporation, and the roads being opened and dedicated to the public. We illustrated Mr. Cooper's designs in our issues of July 12 and 19 last year, immediately after the selection by Sir Aston Webb, R.A., the assessor.

Correspondence.

HYDE PARK CORNER.

To the Editor of the BUILDING NEWS.

SIR,—The purchase of St. George's Hospital by Mr. Wallaby-Deeley, with the intention of building a large hotel on the site, leads me to put forward a scheme that occurred to me some time ago for dealing with the area at Hyde Park Corner, but which, as a practical project, was barred by



the existence of the hospital. The removal of this barrier, however, as now proposed, will present an opportunity for realising a scheme such as I suggest, if only a small portion of the north-eastern corner of the site could be obtained for the purpose.

My suggestion is, as explained by the accompanying plan, to move the central line of the gate entrances to the Park westwards about 70ft., or so far as to bring it in line with the axis of the northern end of the Grosvenor place roadway, so as to gain frontage space for the formation of a recessed semicircular area outside newly-placed park gates. This, with a corresponding area on the south side of the Piccadilly axis, and the intervening width of the Piccadilly roadway, would present a large oval-shaped area about 220ft. by 290ft., bisected transversely and longitudinally by main lines of thoroughfare, and affording direct driving lines to and from Constitution Hill on one side, and the Park avenues on the other.

Inside the Park, a deflection of the southern end of Serpentine-road towards Rotten-row, to bring the driving line of the former to bear on one of the new gate entrances, would be the sole disturbance of the interior lines, which, with this slight alteration, present a fairly symmetrical arrangement.

The large space inside the central gate would provide a favourable site for the erection of an important memorial, such as that to our late King Edward.—I am, etc.,

W. H. LYNN, Architect.

Belfast, July 26.

BARNET COUNCIL OFFICES.

SIR,—I enclose herewith cutting from this week's issue of the *Barnet Press*, which I thought, perhaps, you might like to see.

"The BUILDING NEWS noted with satisfaction that however the competition for premiated design for Barnet's proposed new council offices did not conform to the rules of the R.I.B.A. fewer than one hundred sets of plans were sent in. Barnet's answer is that there was keen competition amongst good men, that the council is a competent judge of what plans fulfil its wishes, and that in such circumstances to have paid a big fee to a R.I.B.A. assessor would have been a waste of public money. What would be said if the Honourable Society of Tooley-street Tailors told us that before deciding upon a suit of clothes we should pay a premium to one of its members to decide for us the pattern and cut?"

I would also like to draw your attention to the fact that Barnet architects should look to their laurels. We have had two competitions in Barnet within a year, one a Children's Home, for the Union, and these Council Offices referred to, and in neither case was a competent assessor appointed, and in both cases the local "house agent" was placed second.—I am, etc.,

A. E. WATSON, Licentiate R.I.B.A.

The Cottage, Puller-road, High Barnet, Herts, July 28.

FAILURE OF CONCRETE ROOF TO KEEP WATER OUT.

SIR,—I am afraid the Clifton and Kersley Coal Co. will get little help. Their experience is common to almost all builders of concrete roofs of the kind.

Water *will* get through such, and you may pour and pour liquid cement into the cracks, and paint over with bitumastic solutions till you are tired, and still fresh cracks will appear, and the roofs will leak.

It will cost more at the outset, but will save money in the long run, if the roof is covered with some good asphalt, such as Claridge's or Val de Travers, provided the work is properly done, in accordance with the instructions those firms issue.

I have never had a roof covering that could which water has ever made its way through, and I should never think of exposing concrete to rain without such protection.—I am, etc.,

FIFTY YEARS' EXPERIENCE.

CHIPS

The new art school at Great Yarmouth is a plain, red-brick, rectangular building, with [illegible] windows, now opened by the mayor of that borough last week. It has been built from plans by Mr. J. W. Cockrill, borough surveyor.

Mr. Norman W. McLachlan, B.Sc. (Lond.), A.M.I.E.E., A.I.C.M., has been appointed superintendent of the Walton and Kirkdale Technical Institute and special lecturer of engineering in the several institutes of Liverpool.

The Devon Education Committee, at their last meeting, decided to purchase a field of seven acres at Kingsbridge for £2,000, as a site for a new grammar school, and instructed their school architect, Mr. Percy Morris, of Exeter, to prepare the necessary plans.

The town council of Pudsey, near Leeds, have unanimously adopted a scheme for the erection of swimming-baths, slipper-baths, fire-brigade superintendent's and manager's houses, fire-brigade station and surveyor's offices on land owned by the corporation, at an estimated outlay of £3,000.

The Admiralty have accepted the offer of Messrs. Mackay and Son, contractors, Edinburgh, at £30,000 for the construction of a laboratory in connection with the explosives work now in course of erection at Crayford. The new building will include magazines. Schedules for further work will be issued shortly.

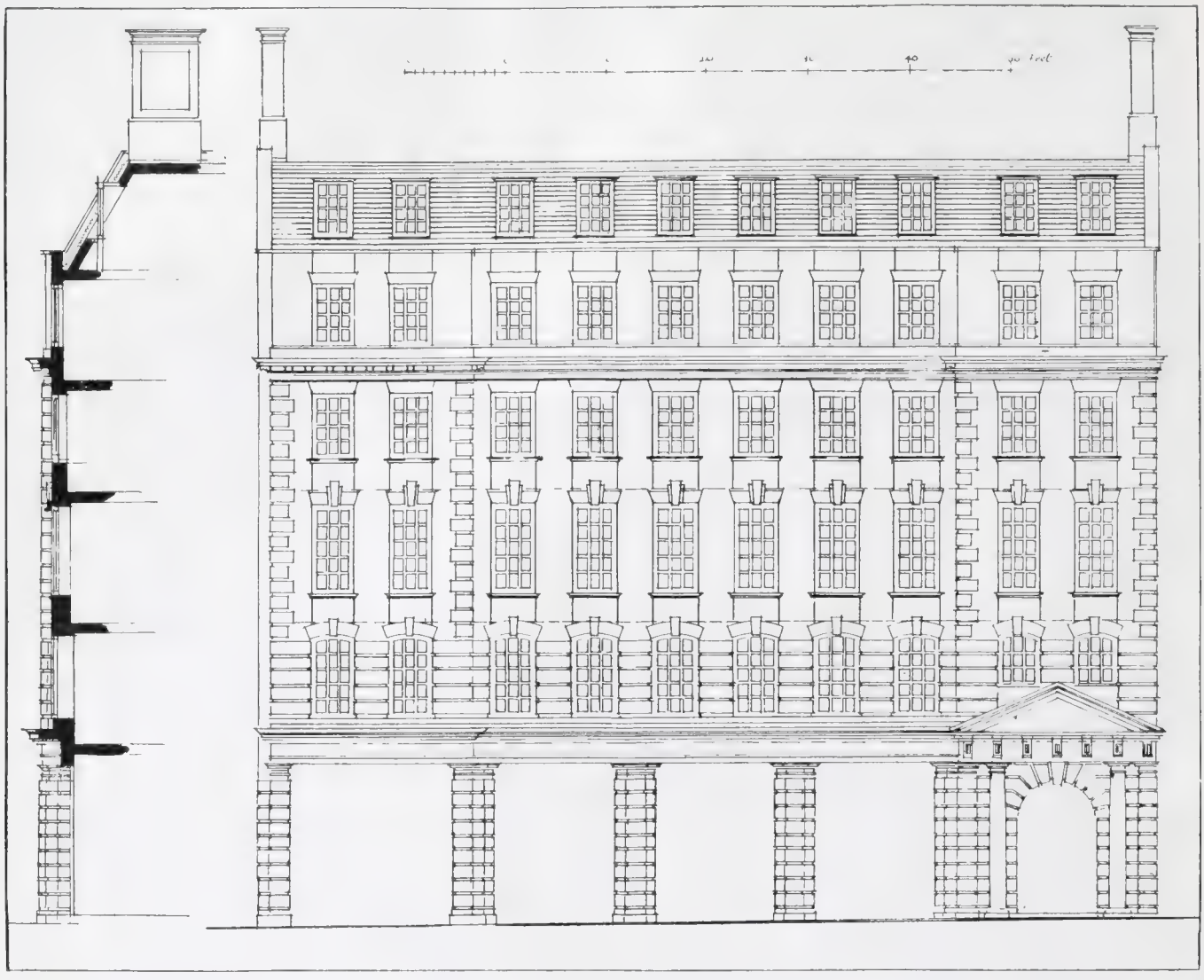
Mr. John Chew, manager of the Blackpool Corporation Gasworks, and the oldest municipal gas manager in the country, resigned his position on Monday on account of failing health. He is eighty years of age, and has been manager of Blackpool gasworks since the year 1862. His services will be retained as consulting engineer.

A Local Government Board Inspector has reported to the applications made to the Board by the Doncaster Rural District Council for a town-planning scheme in an area comprising the whole of the parish of Askern, and portions of the parishes of Sutton, Campsall, Norton, Burghwallis, Owston, Moss, and Fenwick, in the rural district, was held at the Union offices at Doncaster by Mr. Thomas Adams on Friday.

A memorial to the late Dr. Ernald Lane, Dean of Rochester, was unveiled in Rochester Cathedral on Saturday. It is a mural tablet of a brass kneeling figure of the late Dean with a canopied marble frame, and also three shields with the armorial bearings of the Diocese, the Chapter, and the late Dean's family. The memorial was designed by the cathedral architect, Mr. Temple Moore, F.R.I.B.A., of Hampstead, and has been placed on the wall of the South choir aisle.

The parish church of Zeal Monachorum, near Crediton, is in course of restoration. An eighteenth-century stained-glass window, formely in St. Matthew's, Friday-street, E.C., has been erected in memory of the late rector. The oak screen, erected in 1511, which was cut up for use in a gallery in 1854, is being restored to its original position, and the long-lost font-cover, discovered by the rector in a fowl-run some distance from the church, is being restored for replacement over the much older Norman font. It is almost a replica of the font cover in Exeter Cathedral.

Mr. William Richards, master builder and contractor, of Thornleigh, Tennyson-street, Ilkeston, and a member of the corporation of Bolton, succumbed to cancer last week, aged 55 years. Councillor Richards was a son of the late Alderman Samuel Richards, who was Mayor of Ilkeston during the Diamond Jubilee year of Queen Victoria. The latter died twelve years ago. Councillor Richards joined his father on the council more than twelve years ago, and gave ungrudging service to the municipality. He has been for some years chairman of the tramways and electricity committee. He was also a member of the Ilkeston and Heanor Water Board. He had carried out much work in the district as a builder, including the erection of Nonconformist chapels at Stapleford, Heanor, Mapperley, and Hathwaite.



PONTIFEX HOUSE, SHOE LANE, E.C.: PRINCIPAL FRONT.—Mr. F. S. Chesterton, Architect.

Our Illustrations.

UNIVERSITY OF LONDON: KING'S COLLEGE FOR WOMEN.

(On pp. 142-3 will be found a description and plans of this building.)

PONTIFEX HOUSE, SHOE LANE, E.C.

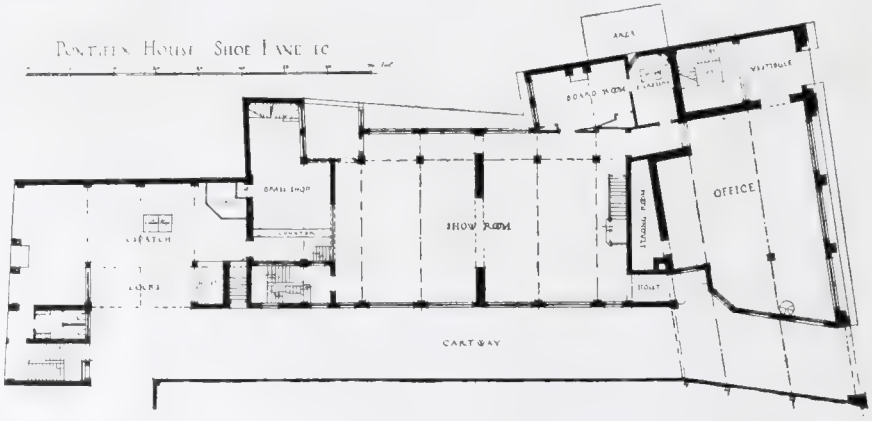
This building is steel-framed throughout, divided by fire-walls into blocks of just under 250,000 cubic feet each. The ground floor and basement are to be used as show-rooms and workshops by Messrs. Pontifex and Sons for sanitary and brass goods. The front is of grey and red bricks and Portland stone, with bronze windows on the ground floor and sash windows above. The heating is done by Messrs. Pontifex, together with the sanitary work. The general contractors are Messrs. Leslie and Co. The architect is Mr. Frank S. Chesterton, of Cheapside.

DAILY SKETCH NEW BUILDING, SHOE LANE, E.C.

These premises adjoin the Farringdon Works, also illustrated to-day. The architects of the *Daily Sketch* building are Messrs. J. W. Beaumont and Son, of Manchester, and the work has been done for Messrs. Hulton and Co.; but we have no further particulars as to the work itself.

STABLE AND COTTAGES, SHORESTON, NORTHUMBERLAND.

These buildings have been erected for Sir Walter Runciman, Bart., on the site of some old cottages, and stand in a sheltered position near the sea. The walls are built of rubble from a local quarry, mixed with old stone from original cottages, resulting in a pleasant mixture of colour. The roofs are covered with pantiles, and the door-hoods are formed with large flags from the floors of old cottages, and the design generally is on local traditional lines. Mr. R. Mauchlen, of Newcastle-on-Tyne, is the architect.



HOUSE AT CHISLEHURST.

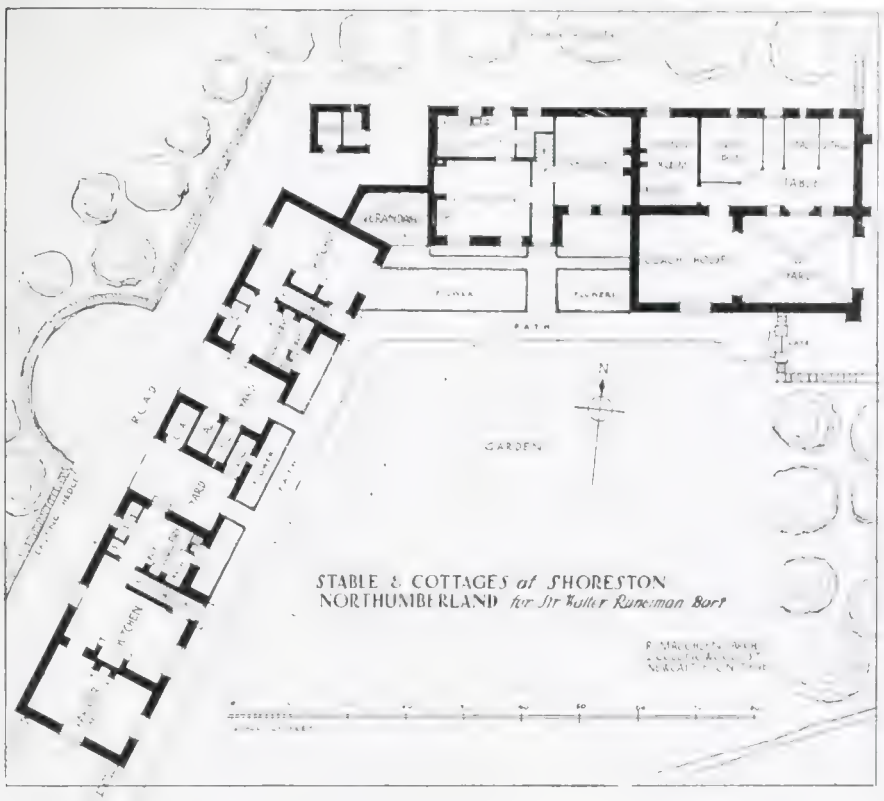
(A description and plans of this house are given on p. 145.)

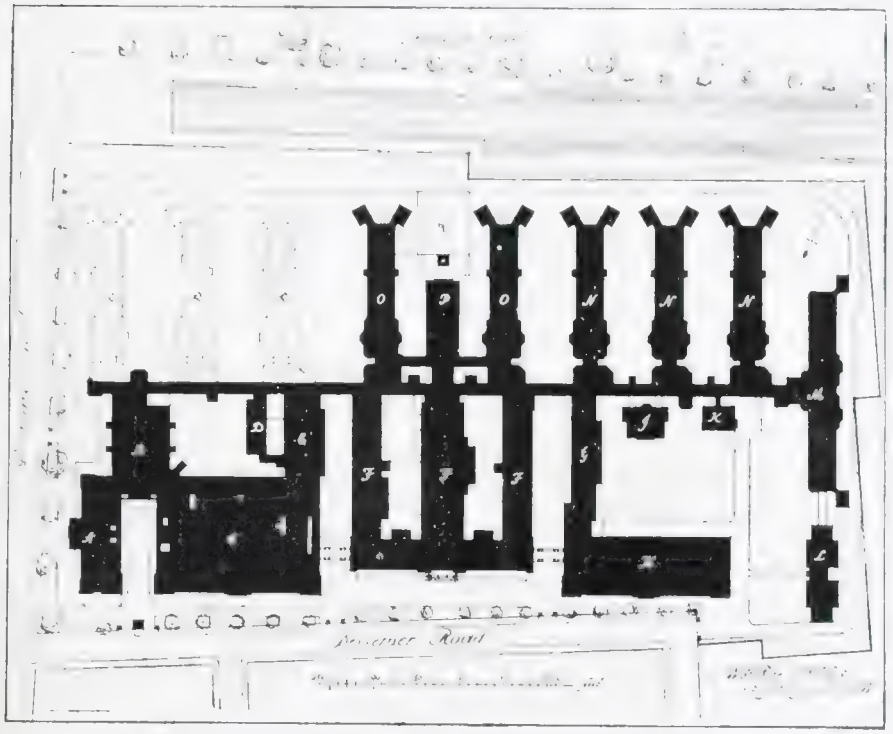
A COTTAGE HOSPITAL: SAXON SNELL SCHOLARSHIP, FIRST PRIZE DESIGN.

(For description and ground-floor plan, see p. 141.)

KING'S COLLEGE HOSPITAL, DENMARK HILL, S.E.

The King and Queen inaugurated these buildings last Saturday. The main entrances to the hospital are all on the Bessemer-road front, shown running parallel with the bottom of the drawing. Central on this front stands the Administration Block, flanked on the east (left side) by the Out-patient Department, and on the west (right side) by the Medical School. Again west of this is the small Isolation Block. Denmark Hill is shown on the left of the drawing, the Bathing and Electrical Departments, which immediately adjoin the Out-patient Department, fronting on the hill. Approximately cutting the site in two, and running almost due east and west, is the main hospital corridor, from which jut out the nine ward blocks. Central with the Administration Block is the chapel, and behind it the power station, the greater portion of which is below the ground level. Two Operation Theatre Blocks stand out on the north side of the corridor, near its western





KING'S COLLEGE HOSPITAL, DENMARK HILL, S.E.

end. Between the eastern one and the Administration Block is the Pathological Department. Ruskin Park stretches away on the south side of the site, separated from it by the South-Eastern and Chatham Railway. Mr. William A. Pite, F.R.I.B.A., is the architect. The following are the references to the block plan given here as explanatory of the bird's-eye view: A, Casualty Department; B, Baths and Electrical Department; C, Out-patients' Department; D, Almoner; E, Dispensary; F, Administration Block; G, Pathological and Post Mortem Block; H, Medical School; J, Operating Theatres; K, Gynæcological and Clinical Theatres; L, Isolation Block; M, Special Ward Block; N, Two Story Ward Block; O, Three Story Ward Block; P, Chapel; Q, Central Station; R, Ward Blocks, future extension. We illustrated the selected competition drawings for this great work on June 2, 1905. The elevations of the first part, with key plan, appeared in our issue for July 5, 1907, and the general elevations of the whole front will be found in the BUILDING NEWS for May 21, 1909.

The chancel which has been added to the chapel-of-ease at Rudheath, near Davenham, Cheshire, was dedicated last week. It is 20ft. by 17ft. 6in., and is built of red brick with stone dressings and has boarded ceiling and tiled floor. The old vestry has been converted into a baptistery, and a new vestry and boiler-house have been built. Mr. A. E. Powles, Northwich, was the architect, and Mr. J. H. Molyneux the builder. The chancel fittings are of carved oak

PROFESSIONAL AND TRADE SOCIETIES.

ARCHÆOLOGISTS AT HOLY ISLAND.—The third excursion meeting of the Durham and Northumberland Archæological Society was held at Holy Island on Tuesday. About sixty travelled from Newcastle by the 9.35 train augmenting the members from Durham. On arriving at Beal they drove across the sands to Holy Island. The party visited the Priory, and was conducted by Mr. W. H. Knowles, F.S.A., F.R.I.B.A., of Newcastle, who referred to the historical associations of the place with St. Aidan and St. Cuthbert. Mr. Knowles commented upon the resemblance of the Priory to Durham Cathedral in its architectural features. The parish church, chiefly of Early English architecture, was also visited, and after lunch an inspection was made of the castle, by leave of the owner.

BUILDERS' BENEVOLENT INSTITUTION.—The sixty-sixth annual general meeting of the Builders' Benevolent Institution was held at Koh-i-Noor House, Kingsway, W.C., on Wednesday, July 23, when the annual report and the audited accounts for the past year were received and adopted. The following election of officers for the coming year took place:—President, Mr. Fred Shingleton (Messrs. Leslie and Co., Ltd.); treasurer, Mr. Frank May, J.P. (Messrs. Holland and Hannen and Cubitts, Ltd.); hon. auditors, Mr. Hubert S. Ward, F.C.A., and Mr. John T. Bolding. The annual dinner will be held at the Whitehall Rooms, Hotel Metropole, Charing Cross, W.C., on Thursday, November 27, next.

KENT ARCHÆOLOGICAL SOCIETY.—The annual summer meeting of this society was held at Sevenoaks on Monday and Tuesday. On the opening day, having assembled at Sevenoaks, the party motored to Westerham, where they were received by Lord Northbourne, president, who occupied the chair at the annual business meeting, which was held at the King's Arms Hotel. It was announced that Mr. R. Cooke had accepted the hon. secretaryship, and a membership of over 850 was reported. After the meeting the members proceeded to the parish church, which was described by Dr. Maude and the Revs. G. M. Livett and C. E. Woodruff. Following lunch the members motored to Squerrys Court, which, together with the British oppidum in the park, was inspected by permission of Mrs. Warde. A visit was next paid to Sundridge Church, which was described by the Rev. G. M. Livett. Proceeding to Chipstead Place, Mr. J. Duveen described the house. The annual dinner was held at the Royal Crown Hotel, Sevenoaks, and was followed by an evening meeting. On Tuesday the members visited Edenbridge Church and Hever Castle and church.

The salary of Mr. J. E. Haynes, surveyor to the Stroud Rural District Council, has been increased to £225 per annum.

The salary of Mr. W. H. S. Dawson, city surveyor of Bradford, is to be increased by £100 immediately, and by a further £50 next year.

Mr. Charles F. Brown, deputy water engineer and surveyor at Gainsborough, has been appointed water engineer, surveyor, and inspector to the urban district council of Leiston, East Suffolk.

The extension of the Agricultural and Dairy College at Kingston, Notts, which has been foreshadowed for some time, will involve an expenditure of about £60,000. A new building is to be erected at Sutton Bonnington, where agricultural students will receive attention, and the present college will continue to be carried on for the benefit of students in dairying.

A special meeting of the Dartford Urban District Council was held on Wednesday in last week to receive the report of the recent deputation to the South-Eastern and Chatham Railway Company with regard to the condition of the station. The deputation reported that the directors have decided to enlarge the platform accommodation, and to construct an additional footbridge; but to effect the improvements it would be necessary to construct a terrace overhanging Mill Pond-road. The council decided to assent in principle to the erection of the overhanging terrace.

THE HENRY SAXON SNELL SCHOLARSHIP.



A COTTAGE HOSPITAL.—FIRST PRIZE DESIGN, BY MR. R. MOUNTFORD PIGOTT, A.R.I.B.A.



"PHOTO-TINT." by J. Akerman, 15 A.R.I. Eagle N. do. born W.

UNIVERSITY OF LONDON. KINGS COLLEGE FOR WOMEN, CAMPDEN HILL.



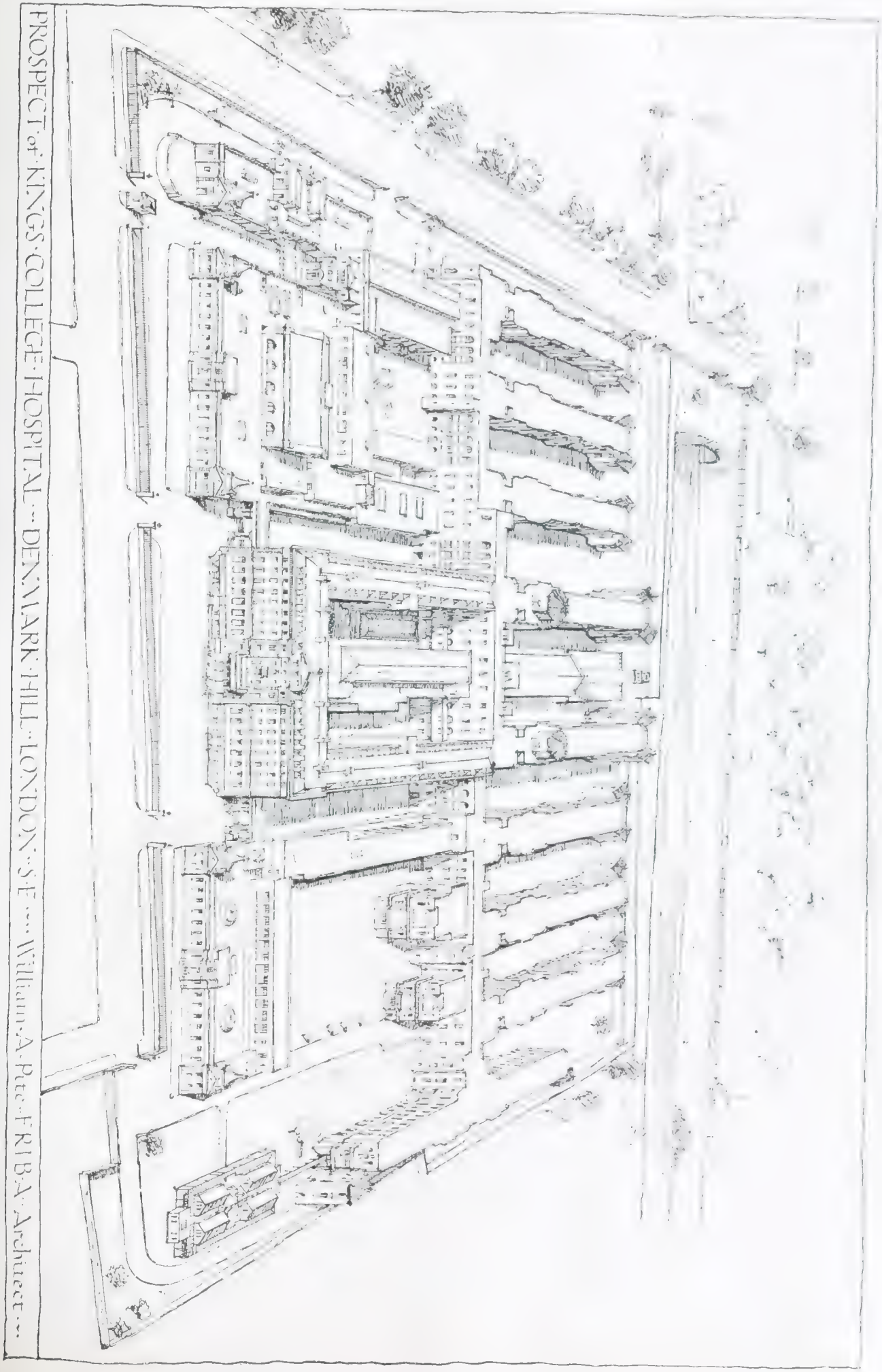
MESSRS H. PERCY ADAMS, F.R.I.B.A. AND CHARLES HOLDEN, A.R.I.B.A. ARCHITECTS



"DAILY SKETCH" PREMISES, SHOE LANE, E.C.
Messrs. J. W. BEAUMONT and SON, Architects.



PONTIFEX HOUSE, SHOE LANE, E.C.: DETAIL OF FRONT.
Mr. F. S. CHESTERTON, Architect.



PROSPECT of KING'S COLLEGE HOSPITAL, DENMARK HILL, LONDON, S.E. — William A. Pite, F.R.I.B.A., Architect.

Building Intelligence.

CROSSRAGUEL ABBEY. At the historic abbey of Crossraguel, in South Ayrshire, a scheme of restoration is being carried out under the superintendence of the Commissioners of Public Works, assisted by Mr. C. R. Peers, F.S.A., the Government Inspector of Ancient Monuments, and Mr. T. Baines, Government Architect in Charge of Ancient Monuments. The abbey has been held in tack, at a nominal rent, from the Chapel Royal, by the Fergussons of Kilkerran; but Sir Charles Fergusson has now renounced his tack in order that the abbey might pass into the charge of the Board of Public Works. In the Board's scheme of preservation it is proposed to uncover the walls of the building, which have long been hidden under fallen rubbish and sunk below the present ground level, in order to present a clear idea of the general outline of the abbey, and to effect restoration work on different parts of the buildings. A new entrance will be made from the public road direct to the arched gateway of the late Abbot's Palace, giving access to the various parts of the building. The grounds will also be laid out. It is estimated that the total cost will be £3,000.

PARK PREWETT. A county lunatic asylum is about to be built at Park Prewett, and will, when completed, have accommodation for 1,600 patients; but, in the first instance, though the entire administrative department will be erected, wards will only be provided for 1,400 patients. The approved plans comprise (1) the main asylum for 810 patients; (2) a detached reception hospital for fifty recent cases of each sex; (3) eight detached blocks, of which four will each be for forty quiet, chronic working patients—two will each accommodate forty epileptics, and two will each be devoted to thirty convalescent patients; (4) a detached block for fifty private patients of each sex; (5) two sanatoria, each with forty-five beds, for the separate treatment of patients suffering from phthisis and dysentery; (6) a detached chapel with seating accommodation for officers, attendants, and 752 patients; (7) a detached house for the medical superintendent; (8) residence for other members of the staff, including a house for the steward and sixteen cottages for married attendants and artisans; and (9) a detached isolation hospital with six beds. The water-supply will be derived from a well on the site. The sewage will, after treatment by bacterial process, be disposed of by surface irrigation. The buildings will be warmed by a forced circulation of hot water, and lighted by electricity. The total estimated cost of erecting the asylum for 1,400 patients, including administrative block, cooking apparatus, and all machinery, the laying out of grounds and airing courts, fencing, future farm buildings, architect's commission, etc., is £355,000. This represents an average cost of £253 11s. per bed. The builders are Messrs. Mussellwhite and Sapp, of Basingstoke.

WALLSEND.—The new central council schools erected by the Wallsend Education Committee, were formally opened on Wednesday. The schools, which are situated on a site near Burn Closes, Church Bank, and in close proximity to the new secondary school now in course of erection, are divided into three departments, to accommodate 520 boys, 520 girls, and 400 infants. The cloakrooms are at each end of the school, with the classrooms — numbering ten — between. The assembly-hall is placed centrally. The architects were Messrs. Marshall and Tweedy, Eldon-square, Newcastle, whose design was selected from a number of competitive plans. The contractor was Mr. W. T. Weir, Howdon. Mr. Cook acted as clerk of works.

A bronze panel was unveiled on Saturday at Lugar, Ayrshire, in memory of William Murdoch, the inventor of coal-gas lighting. The panel, which takes the form of a life-size portrait medallion in relief, was placed on the wall of the cottage in which Murdoch was born. The cost has been defrayed by the North British Association of Gasmakers.

Engineering Notes.

TUBE LINE EXTENSION AT CHARING CROSS.—The Charing Cross extension of the Hampstead Tube Railway forms a direct passenger connection between the Hampstead Tube and the District system, and between the Hampstead and the Bakerloo Tubes, will be opened for traffic by the end of this year. The tunnel for the extension is now finished, and the track is laid for about three-quarters of its length, that tunnel being a continuation of the present down-running tunnel from Hampstead and Highgate. It passes under the Charing Cross District Station, and makes a loop below the bed of the river, extending some sixty yards from the face of the Embankment. The loop returns again under the Charing Cross District Station, to the up-running tunnel of the Hampstead line, which at present terminates beneath the forecourt of the Charing Cross South-Eastern Station. The new Hampstead Station under the Embankment will be situated next to, and about on the same level as, the present Bakerloo Station, and will be connected with it by a straight subway. For the purpose of connecting both these stations with the District Railway two pairs of escalators are to be installed, and will open on a circulating area situated under the present District Station. The sub-station for the supply of electricity to the three lines is now being enlarged. The roof of the loop tunnel under the Thames lies only 9ft. below the actual river bed. Messrs. John Mowlem and Co. are the contractors and Mr. Dalrymple Hay is the consulting engineer. The Charing Cross (Embankment) District Station is being rebuilt from plans by Mr. H. W. Ford, L.R.I.B.A., of Westminster.

A new Roman Catholic church is about to be built at Straide, Co. Mayo, from plans by Messrs. W. H. Byrne and Son, Dublin.

A new county secondary school for 300 boys will be opened by the Middlesex Education Committee at The Green, Ealing, on September 25.

Mr. William Forrest, of Hughenden-terrace, Glasgow, timber merchant, who died on February 9, left personal estate of the value of £81,387.

The Board of Trade has made a special order excluding stone-carvers and sculptors from the unemployment provisions of the National Insurance Act.

The Faversham Rural District Council have appointed Mr. Howard Humphreys, water engineer, of Westminster, to carry through the extension of the water service to Boughton-under-Blean.

Mr. D. S. Davies, of Manchester, has presented to the Welsh National Memorial Association a piece of land, near Denbigh, 244 acres in extent, and valued at £5,000, as a site for a proposed sanatorium for consumptives.

A river excursion to Pershore and Bredon, under the auspices of the Gloucester Committee of the Bristol and Gloucestershire Archæological Society has been arranged for Tuesday, August 12, when it is proposed to visit Pershore Abbey and Bredon Church.

Mr. Frederick Collins, of Claremont, Sherwood Rise, Nottingham, for many years manager to Messrs. Logan and Hemingway, railway and general contractors, who began his business life as a fireman, afterwards becoming an engine-driver, and who died on June 1 last, aged 75 years, left estate of the gross value of £66,888, with net personalty £63,001.

Mr. Meade-King, an inspector of the Local Government Board, held an inquiry at Kidderminster on Friday relative to an application by the town council to borrow £600 for street improvements in Park-butts, Mill-street, and Comberton-hill. Mr. Thursfield, town clerk, said the object in all three cases was to carry out street widening, and in Park-butts was to remove an awkward corner.

The City Church of St. Augustine with St. Faith's, one of Wren's works, is about to be repaired under the supervision of Mr. Detmar J. Blow, F.R.I.B.A., of Westminster. The gallery, now propped up with timber beams, has been condemned by the City Surveyor, Mr. Sydney Perks, F.S.A., and will be removed; electricity will be substituted for gas, and gas radiators for the existing stoves.

LEGAL INTELLIGENCE.

RATING OF TRAMWAYS.—A point of great interest to tramway undertakings was decided in the House of Lords on Friday. The Urban District Council of Tottenham assessed the Metropolitan Electric Tramways on the full net annual value in respect of a tramway which continued into a light railway, and was practically indistinguishable from it; but the tramway company contended that they were entitled to be assessed under the Public Health Act, 1875, at a lower rate (one fourth) as if it were a railway, and refused to pay the larger amount. The justices had ordered the company to pay the ordinary rates, and this decision was upheld by the King's Bench; but the Court of Appeal reversed it on the ground that the land in question was used only as a railway, the tramways and the light railway in this particular case being identical. The case now came before the Law Lords on the appeal of the urban council. Their lordships held that in public legislation the word "railway" did not include tramways. The appeal was allowed, with costs.

BREACHES OF BUILDING BY-LAWS.—Robert William Tonge, builder, of Sevenoaks, was summoned at Sevenoaks Police-court on Friday for erecting a house without connecting the drains with the sewer, contrary to the by-laws of the local authority. Mr. J. S. Richardson, Sevenoaks, appeared for the Sevenoaks Urban District Council. Mr. C. H. B. Ince represented the defendant. The Bench fined defendant £2 and costs. Defendant also pleaded not guilty to a summons for covering up the foundation of a house without notifying the Council of his intentions to do so. In this case the Bench inflicted a fine of 5s. and 9s. costs.

ACME FLOORING AND PAVING CO. (1904), LTD., HAS TO PAY £23 FOR AN INJURED FOOT.—At the Clerkenwell County Court, before Judge Howland Roberts, an action was brought by Joseph March, a lithographer's manager, of Hewitt-road, Wood Green, against the Acme Flooring and Paving Company (1904), Ltd., of Lee Conservancy-road, Hackney, for £25 damages in respect of personal injury and loss sustained. Mr. Hilbury was counsel for plaintiff, and Mr. Ringwood for defendants. In opening, Mr. Hilbury said the claim arose out of an accident which occurred at the Holborn end of Gray's Inn-road, whilst the latter was in the hands of the defendant company for repaving. Plaintiff said that on the evening of May 11 he was standing on the West side of Gray's Inn-road, near the Holborn tram terminus, waiting for a tramcar. Working operations were proceeding on the roadway. A truck was being wheeled in his direction, and when it got opposite to where he was standing, the wheel struck the kerb. The hub broke in several pieces, and the iron rim fell upon his right foot, injuring two of his toes.—Mr. Hilbury: were you standing close to the kerb?—Plaintiff: I should say about 2ft. from the edge. I was not beyond the lamp standard. Plaintiff added that later in the evening one of the toes became swollen and black, and was very painful. He went to Dr Anderson, who dressed it, and advised him to lay up. As a result of the injury he was unable to follow his work for three weeks.—Mr. Ringwood: Was there a notice on each side of the road, stating: "No thoroughfare"?—Plaintiff: I did not see it. Was there a rope extending from Holborn in the direction of King's Cross, from 80 to 100 yards in length?—I should say it was not 80 yards from the corner. Would this wheel have struck you if you had been outside the rope?—It did. For the defence, Louis B Conroy, a pavior in the employ of the defendant company, said the re-paving work had been in operation for a fortnight or three weeks when the accident happened. There were two notice boards at the Holborn end, announcing no thoroughfare. A rope extended above the pavement in the direction of King's Cross to a length of 160ft. or 170ft. The rope was about 2ft. 6in to 2ft. 9in. inside the pavement from the kerb. After the accident, witness saw that the plaintiff was standing inside the rope.—His Honour: Do you mean on the road side?—Witness: Yes. Witness said he was one of the men wheeling the truck. When the wheel broke, the rim came down on the pavement, about 2ft. from the kerb.—Mr. Ringwood: If plaintiff had been outside the rope could this rim possibly have touched his foot?—Witness: If he had been outside it would have fallen against the rope, and would not have touched him.—George Gatty, who was working with the previous witness, said plaintiff was inside the rope—Mr. Ringwood: Did you see him?—Witness: Yes. I saw him standing at the corner by a heap of ballast.—In giving judgment, his Honour said he found, as a fact, that plaintiff was not standing on the road side of the rope, but on the other side. So the question of law raised by counsel for the defence that plaintiff was in the position of a trespasser

did not arise. Had his Honour found that plaintiff was on the road side of the rope it would have raised that interesting question. He thought there was a good deal to be said on the point that a person venturing upon a roadway under such circumstances would undertake certain risks. He would take the risk, for instance, of tripping over a tool left there by a workman; but he did not undertake the risk of a vehicle collapsing suddenly and a wheel coming upon him. But the point did not arise on his finding, and the only question left was one of damages. His Honour awarded plaintiff £23 and judgment was entered accordingly, with costs.

WATER USED FOR NON-DOMESTIC PURPOSES. METROPOLITAN WATER BOARD v. AVERY.—In the Court of Appeal on Friday judgment was given by Lords Justices Vaughan-Williams, Buckley, and Hamilton, in the appeal of the Metropolitan Water Board from a decision of the Divisional Court (Justices Channell and Bray) reversing a judgment of the Westminster County-court Judge. The defendant, Mrs. Avery, was sued as the lessee and occupier of the Crutched Friars public-house in the Minories for a sum of five shillings in respect of two quarters' rates for water alleged to have been used on her premises for non-domestic purposes. It was contended by the Water Board that water used for the purpose of cooking and washing-up in connection with a small catering business conducted at the house was water used for the purpose of "trade or business" within the meaning of Section 25 of the Metropolitan Water Board (Charges) Act, 1907, and that, therefore, such supply was not covered by the ordinary charge made for the supply of water for domestic purposes." The County-court Judge gave judgment for the Water Board; but the Divisional Court reversed that decision, holding that the whole of the water was used for domestic purposes. Hence the present appeal. It was mentioned that the annual income involved by the decision was more than £30,000. Mr. Clavell Salter, K.C., and Mr. Goodland appeared for the appellants, and Mr. Ryde, K.C., and Mr. Konstam for the respondent. Lord Justice Vaughan Williams, giving judgement, said that the appeal failed, the point being covered by the decision of the House of Lords in the case of "Colley's Patents (Limited) v. the Metropolitan Water Board," 1912, in which it was held that water used in a factory for sanitary purposes was used for domestic purposes. It was contended that that decision did not cover a case where the water was used in connection with the business, and was the means of yielding a profit. He, however, thought that the Divisional Court was right. Lord Justice Buckley was also of opinion that the appeal should be dismissed. It was plain that what had to be looked at was the character of the purpose for which the water was used, and not the character of the premises in which the water was used or the character of the person using it. It could not be disputed that the purposes for which the water was used in the present case were domestic purposes. The authorities, also, pointed all one way. Lord Justice Hamilton concurred. The appeal was accordingly dismissed with costs.

AN ANCIENT CHESHIRE PRIORY.—An application came before Sir P. Baker Wilbraham at the Chester Consistory Court on Monday for a faculty to preserve Birkenhead Priory Chapter House, which dates back to 1143. It is proposed to remove the modern roof, and replace it with an oak-timbered roof of a design in harmony with the period of the edifice; to furnish the lower chamber of the Chapter House as a chapel, with communion-table reredos, communion rails, and seats for worshippers, and to construct an external staircase to the upper chamber, and a drain around the exterior of the building to keep the foundations dry. The vicar said the works would be watched, from an antiquarian point of view, by Mr. Fergusson Irvine, F.S.A., and Mr. Paul Rufands, F.S.A. The walls were very good, and the proposed roof would be quite in harmony with the period. Part of the Chapter House had been a scriptorium. There were recesses in the wall, probably for manuscripts and pens and ink. The Chancellor said he would like to see the architect, and postponed the application to the next court.

A GARDEN PARTY WALL.—Wolfe Barry v. Minturn. Judgment has been delivered in the House of Lords, in the case of Sir John Wolfe Barry v. Eliza Theodora Minturn, the arguments in connection with which were heard by Lords Halsbury, Loreburn, Atkinson, and Parker, early in June. The litigation arose out of a dispute as to an alleged defect in a party garden-wall between two houses, 14 and 15, Chelsea-embankment, one of which belongs to Sir John Wolfe Barry, and the other to Miss Minturn. Their Lordships were informed that though any defect should there be [illegible] at the [illegible] [illegible] [illegible]

PARLIAMENTARY NOTES.

WESTMINSTER HOSPITAL.—A Bill authorising the Governors of Westminster Hospital to build a new hospital on land to be acquired within the County of London and to sell the site of the existing institution was considered by a House of Lords Committee on Tuesday. Mr. Squarey, K.C., for the promoters, explained that the Westminster Hospital was first erected in 1719 in James-street, Buckingham-gate; but in 1832 the present site was purchased in Broad Sanctuary for £6,000, and the existing institution was erected under the terms of a conveyance between the Commissioners of Works and the hospital trustees. Arrangements had been made with H.M. Office of Works, and also with the London County Council, and it had been agreed that in the event of a new building being erected on the site, the Broad Sanctuary and Princes-street should be made 7ft. wider. The Westminster City Council offered no general opposition to the Bill, but asked for a clause providing that nothing in the measure should affect their powers under Michael Angelo Taylor's Act, 1817, which sanctions compulsory purchase of land for public improvements. The Committee allowed the Bill to proceed, with the insertion of the clause asked for by the Westminster Council.

WORKING-CLASS HOUSING.—The Chancellor of the Exchequer, replying to Mr. Royds, M.P., gives figures showing the amount of loans approved by the Public Works Committees under the Housing of the Working Classes Acts, to Public Utility Societies, and to private individuals and companies, together with the number of houses to be erected for the years 1909-13. The total amount of loans in 1912-13 is given as £472,833, and the number of dwellings to be built as 3,301. The second highest amount of money sanctioned was £387,405 in 1910-11 in respect of 1,956 dwellings. The loans in 1909-10 and 1911-12 respectively were £185,535 and £170,978 affecting 1,726 and 1,178 houses respectively.

MILLBANK EMBANKMENT IMPROVEMENT.—Mr. King asked whether the Westminster Embankment gardens adjoining the House of Lords would eventually be thrown into one open space along with the L.C.C.'s new gardens. Mr. Wedgwood Benn replied that the matter had been receiving consideration. It was intended to have a single sweep of garden.

REGENT-STREET QUADRANT.—Mr. Boyton asked the President of the Board of Agriculture on Friday whether it was the intention of the Office of Woods to appoint an architect to prepare a design for completing the rebuilding of the Regent-street Quadrant, together with the buildings in Piccadilly-circus and the County Fire Office, to which all parties must conform, or if the lessees' architects were to be invited to send in drawings based on the findings of the Committee recently appointed by the Department.—Mr. Runciman: The Office of Woods has no present intention of appointing an architect to prepare designs; but any sent in by architects acting for lessees will receive careful consideration based on the report of the Committee to which the hon. gentleman refers.

INTERCOMMUNICATION ON TUBE RAILWAYS.—The London Electric Railway Company sought power to make certain improvements in their system by a Bill considered by a House of Commons Committee on Wednesday. It is proposed to link up the Hampstead and Highgate Tube with the City and South London line at a point near Euston. Another improvement is to enable passengers from the Piccadilly and Brompton Tube to travel through to Kew, Richmond, and the Thames Valley, without having to change at Hammersmith. The only opposition to the Bill related to one clause, to which the London County Council took exception. This provided that the railway company should be entitled to use the subsoil of public streets under their existing Acts without paying any compensation to the Council. The Committee passed the Bill, including the clause in question.

The directors of the Midland Railway have appointed Mr. W. H. Christy Claye as estate agent of the company, in succession to Mr. P. S. McCallum, resigned.

Mr. John Bourne, who relinquished his duties as surveyor to the Rawmarsh (Yorks) Urban District Council on April 1 last, died last week at the age of seventy-one.

Sir Edward M. Merewether, the Governor of the Colony of Sierra Leone, has unveiled at Freetown the memorial erected to the negro savant, Dr. Edward Wilmot Blyden. The memorial consists of a pedestal of Portland stone surmounted by a life-size bust of the subject in bronze, and fitted with bronze fountains.

STATUES, MEMORIALS, &c.

STATUES FOR CARDIFF CITY HALL.—The adjudicators in the competition initiated by Mr. D. A. Thomas, the Welsh coal-owner, to decide the names of the ten greatest Welshmen before the reign of Queen Victoria have divided the prize of £20 among seven persons, who named eight or ten whom the adjudicators had themselves agreed upon as the greatest men of Wales. Mr. Thomas will have statues executed of all the ten, and placed in Cardiff City Hall at a cost of over £10,000. The list is as follows: Dafyed ap Gwilym the Bard, St. David, Gerald the Welshman, Owen Glendower, Henry the Seventh, Howell the Good, Llewellyn, last native Prince of Wales, Bishop Morgan, translator of the Bible, Sir Thomas Picton, and the Rev. W. Williams, the hymnologist. The competition excited the keenest interest, and 374 persons sent in lists with explanatory notes in justification of their selections. Sir Goscombe John, R.A., is one of the sculptors selected, and it is expected the scheme will be completed within two years.

WATER SUPPLY AND SANITARY MATTERS.

KIRKCALDY WATER SUPPLY.—At a meeting of Kirkcaldy District Committee on Saturday, a letter was read from Messrs. Leslie and Reid, C.E., Edinburgh, along with the tenders for the new waterworks at Glenfarg. It was decided to accept the offer of Messrs. Jackson and Anderson, Edinburgh, for the construction of the reservoirs and pipe-laying, at a cost of £61,728 5s. 8d., and the offer of Messrs. Robert M'Laren and Co., Glasgow, £8,187 17s. 9d., for the pipes—a total of £69,915 3s. 5d. The Clerk explained that this was about £5,000 greater than the Parliamentary estimates, due largely to the rise in the price of material and wages.

Mr. David Francis Roberts, master builder, of Parkhill, Prescot, injured in the Ditton railway disaster last September, died on Friday, having never recovered from the injuries and shock he then received.

The supplementary estimates for the Court Services provides £5,660 for adapting Stafford House partly as a museum (including cost of removal of exhibits from Kensington Palace) and partly for Government hospitality and entertainment, and £1,800 to provide new museum cases and fittings and other furniture at Stafford House.

Mr. Spencer W. Morris, C.C., the Master of the Carpenters' Company, has had framed and glazed and hung in the reception-room at the hall the documents of the company, including the grant of arms (1466); the charters granted by James I. (1607), Charles I. (1640), Charles II. (1674), and James II. (1686); the license in mortmain (1680); and an exemplification of the Statute (1607).

The Milnrow Urban District Council propose to spend £16,248 4s. 3d. on the reconstruction, widening, and improving of the Rochdale and Shaw main road between Firgrove and Huddersfield road. Towards the cost grants have been made by the Road Board and the Lancashire County Council, the sum that the Milnrow Urban Council will have to pay being £14,900.

The Leeds Art Collections Fund, established last October, has been successful in obtaining many interesting gifts and acquisitions. Among these are a Temple Figure of Buddha, in burnished white metal and enamel; the late Arthur Melville's large oil painting, "The Return from the Crucifixion," presented by Mrs. Arthur Melville; A. Mancini's "Portrait of the Artist's Father"; an oil landscape, "Wells Farm Bridge, Acton," by Lucien Pissarro; a water-colour, "Bend of the Seine at Auteuil," by Maurice Asselin; a statuette, "The Music of the Wind," by T. Stirling Lee; Mrs. Laura Knight's water-colour, "Cheyne Walk"; a drawing by H. S. Hopwood; and an etching by Hanslip Fletcher.

Mr. G. H. Fellowes Prynne, F.R.I.B.A., has made a careful examination of the tower of St Giles, Cripplegate, and has advised the vicar and churchwardens to have the stonework overhauled. The stone in the Mediæval (lower) part of the tower is chiefly Kentish rag, which is apt to crumble and flake off after long exposure to weather. A few years ago wire netting was affixed to a portion of the tower facing south, to hold in the stone flakes, but that has proved only a temporary remedy. The work will be put in hand at an early date, and will consist of the substitution of new masonry for old. All the stone with sound facings will be retained, and the architectural character of the structure will be in no way altered.

Our Office Table.

The arrangements for the opening of the new School of Architecture at University College, Gower-street, are approaching completion. The following will be the staff of the new School: Architecture: F. M. Simpson, F.R.I.B.A., Professor and Director of the School; R. Elsey Smith, F.R.I.B.A., Professor (formerly of King's College); J. J. Burnet, A.R.S.A., LL.D., F.R.I.B.A., Special Visitors for Academic Design Class; Leonard Stokes, F.R.I.B.A., and Edward Warren, F.S.A., F.R.I.B.A. Special Visitors for Evening Design Class; Leslie Wilkinson, A.R.I.B.A., Assistant Professor; and Arthur Stratton, F.R.I.B.A., F.S.A., Lecturer (formerly of King's College). Engineering: J. D. Comack, D.Sc., M.Inst.M.E., Professor, and E. Sprague, A.M.Inst.C.E., Assistant. Painting and Sculpture: Frederick Brown, Slade Professor; H. Tonks, Assistant Professor; W. W. Russell, Assistant; and Havard Thomas, Teacher of Sculpture. Archæology: E. A. Gardner, Litt.D., Yates Professor. Hygiene and Sanitation: H. E. Kenwood, M.B., D.P.H., F.R.S.E., Professor, and J. Sherwood New, M.B., B.S., D.P.H., Assistant and Lecturer.

The Select Committee of the House of Lords appointed to consider whether it is desirable to enable purchasers under the Lands Clauses Acts to take advantage of procedure under the Housing of Working Classes Acts, 1890, in acquiring insanitary property, issued their report on Monday. The London County Council desired a clause making special provision for compensation to parties interested in insanitary property in all Bills under which they take powers to purchase property compulsorily for school sites. The Council urged that, by adopting this procedure, taken from the Housing Acts, a considerable economy in price and in cost of the procedure of purchase might be effected. On the other hand, the report mentions, it is urged that the adoption of any such policy must inevitably react detrimentally on the efficient working of the Housing Acts themselves. The Committee are of opinion, after a very careful consideration of the case, that the balance of advantages and disadvantages inclines against the proposed clause, and they are not prepared to recommend its embodiment in Bills for the acquisition of sites. They accept the view that there is a danger that if such a clause were inserted in the Bills or Provisional Orders of local authorities, there would be a very great temptation to let the Housing Acts look after themselves, in the hopes of subsequent contingent advantages to the authorities concerned. Such a contingency would have a seriously detrimental effect upon the efficient administration of the Housing of the Working Classes Acts. The Committee believe that a simplification of the procedure of the Land Clauses Acts would be preferable to the adoption of a procedure from the code of Acts passed originally for a different purpose.

The two voluminous reports—one covers nearly 300 and the other nearly 130 pages—by Dr. Meredith Young, M.D., D.P.M., D.S.Sc., Barrister-at-Law, the Medical Officer of Health and Chief School Medical Officer of the County Palatine of Cheshire, are in every way models of what such publications should be. Not only are the ordinary subject-matters of such reports treated upon with a perspicuity and comprehensiveness too seldom met with, but a vast amount of most useful information with regard to such matters as the sanitation, lighting, and general arrangements of schools are embodied which are well worth study by all concerned. We note Dr. Meredith Young confesses to a little disappointment that the work of preventing pollution of rivers has progressed so little as it has. Good work has been done, it is true, but in a county like Cheshire there are really not many serious difficulties in the way of securing greater purity of rivers and streams, and one is therefore always hoping that progress will be fairly rapid. The fault, Dr. Meredith Young says, ingeniously, is largely his own, for with the constant additions to work which are

taking place every few months he has not been able to carry out as many inspections as he had planned. His suggestion for the remedy of this state of affairs proves to us that the "fault" is by no means his own, but the result of arrangements which he is not responsible for, and which his suggestion would avoid.

The Birmingham City Council, at their meeting on Tuesday, authorised the town-planning committee to proceed with a scheme of town-planning for South Birmingham, the area being 8,400 acres, and comprising practically the whole of the undeveloped land within the city boundaries. The area of the city before the recent extension was only 13,000 acres. The committee seek power to control the future development of the city at the same meeting. The water committee were empowered to apply to the Local Government Board for power to obtain loans to carry out works already authorised. It is proposed to lay down a third pipe from the watershed in the Elan Valley, Radnorshire, for the conveyance of a larger supply of water. Last month the city was taking the full yield of the present aqueduct—viz., 25,000,000 gallons a day.

According to the annual report of the Birmingham city surveyor, Mr. H. E. Stilgoe, the expenditure for the past year in connection with the department has been equal to a rate of 2s. 1.79d. in the pound; this, as compared with the previous year's working (of the old city area) is an increase of 1¾d. in the pound. During the year 2,196 buildings were completed, including 1,474 houses and shops, 157 warehouses and shopping, three schools, eight churches, and two chapels, as compared with a total of 1,670 for the previous year. Plans for fifty-three new factories and 324 extensions of existing ones were approved during the twelvemonths. There are open in the city sixty-one cinema halls, nine others are in course of erection, and plans for yet another ten halls have recently been passed. Many drainage schemes have been prepared, the most important being those for sewerage of Hall Green, at an estimated cost of £19,000, and of Hay Mills, £8,700. The total mileage of roads in the extended city is over 336½ miles.

The Archbishop of Canterbury and the Archbishop of York have received a deputation at Lambeth Palace from the Society for the Protection of Ancient Buildings, which was introduced by Lord Curzon, and included Lord Crawford, Lord Ferrers, Dr. Philip Norman, and several other members of the committee of the society. While not advocating any withdrawal or transference of the responsibilities now belonging to the Ecclesiastical authorities, the deputation advocated the utmost care in the treatment of ancient churches and other buildings. The Archbishops received the representations with sympathy, and called attention to the steps which they are taking, as already announced by the Archbishop of Canterbury, in the House of Lords during the discussion on the Ancient Monuments Bill.

The third annual report of the Road Board states that the total receipts for the year ending March 31 last was £1,229,000. Payments totalled £471,000, of which £78,000 was paid under grants. The excess of receipts over net payments is over two and a half millions sterling for the three years since the operation of the Act. Grants and loans made fell short of grants and loans indicated by £1,613,000 up to March 31 last, and by 1,960,000 up to June 30 last. In settling the amount available for additional grants at any dates the Board explain that they must have regard mainly to the amount of indications, as these represent definite promises or commitments to individual highway authorities in respect to works for which preparations are being made in reliance upon grants and loans indicated. In settling the amount to which advances may safely be made at any date the Board say they are prepared to anticipate their income to a certain extent, but in view of the limited experience available they have not thought it advisable to anticipate more than a year's income. At the present time the Board are making grants on the assumption that they can safely indicate a sum of £1,700,000 in addition to the indications made up to June 30 thus anticipating their income up to March 31, 1914.

Members of the Torquay Corporation visited the waterworks at Tottiford on Friday, the arrangements being carried out by Mr. S. C. Chapman (the water engineer) and Mr. F. S. Hex (town clerk). Special attention was paid by the members to the afforestation scheme. Since the corporation became the owners of the watershed, two years ago, 124 acres have been planted with trees, at a total cost of £800, and future operations will be on a far more extensive plan. The young plantations are protected by wire fencing from the depredations of rabbits. The larch will reach maturity in about thirty-five years, while the beech takes between sixty and seventy years. Other trees grown are Scotch fir, spruce, and Douglas fir, and crack willow. It is considered that when the cutting time comes, Torquay ratepayers will benefit to the extent of between £600 and £700 a year from the sale of timber. The value of the trees at present on the watershed is placed at £1,013. The corporation at the present moment has something like 300,000 young trees in its nurseries, fully half of which have been put in during the last planting season. The section of land now being planted is on the eastern side of the watershed, and forms part of the Clampitt and Laployd farms.

Trade News.

WAGES MOVEMENTS.

LIVERPOOL BRICKLAYERS' LOCK-OUT.—Over 3,000 men employed in the building trade at Liverpool have been thrown idle as the result of the drastic action decided upon by the Master Builders Association. Every bricklayer and labourer has been locked out. The trouble follows a strike which commenced some time ago at the new Adelphi Hotel owing to a demarcation dispute between the bricklayers and plasterers. The Master Builders Association then demanded an immediate resumption of work, but the bricklayers determined to stand out until the settlement of their grievances was assured, although the employers threatened a lock-out. The result was that on Saturday the men were paid off, and told that they need not present themselves on Monday. Trade is very good, and there are hopes that arbitration will smooth the differences.

Mr. W. O. Hughes, Conway, has been appointed surveyor and inspector to the Bettws-y-Coed Urban District Council.

Mr. F. Tuckey, the present surveyor and inspector of nuisances, has been appointed surveyor of highways, and Mr. M. Roberts, of Castleford, inspector of nuisances to the Castleford Urban District Council, has been appointed inspector of nuisances to the Hinckley Rural District Council.

The commemoration celebrations of St. Anne's College, Abbots Bromley, took place on Tuesday, when the foundation-stone was laid of a main block of additions to the college buildings. The extensions comprise a hall, mistresses' common room, servants' quarters, kitchens, power-house, dormitories, and matron's rooms, and will provide accommodation for ninety girls. The cost of the additions will be about £8,500.

The fourth report of the Royal Commission on Ancient Monuments in Wales and Monmouthshire, issued on Wednesday, refers to the generosity of Sir Foster H. E. Cunliffe and the Earl of Denbigh in making over to the Commissioners—the former a Late Celtic bowl found near Caergwrle, Flintshire, and the latter a couple of prehistoric urns discovered in Flintshire. These objects have been presented to the National Museum of Wales.

Mr. Richard Walters, of New-road, Llandilo, has been appointed surveyor and sanitary inspector to the Llandilo Urban District Council.

The Ontario Government has appointed Mr. Charles A. Magrath, C.E., member of the Canadian Section of the International Waterways Commission; Mr. William A. McLean, C.E.; and Mr. Rankin, member of the Legislature, to investigate and report on the construction and maintenance of public roads in the province.

LATEST PRICES.

IRON.

Steel Joists, Belgian and German		
(Lancaster Section)	per ton	£6 5 0 to £6 [illegible]
Steel Joists, English		7 11 0 ,, 7 17 [illegible]
Wrought Best Garter Plates		7 5 0 ,, 7 [illegible]
Steel Garter Plates		7 [illegible] ,, 8 [illegible]
Tin Iron, Steel Stuff		[illegible] ,, [illegible]
Do., Lowmoor, Flat, Round or Square		8 0 0 ,, 8 10 0
Do., Welsh		5 15 0 ,, 5 17 0
Boiler Plates, Iron—		
South Staffs		8 0 0 ,, 8 15 0
Best Staffordshire		9 0 0 ,, 9 10 0
Angle Iron, Tee Iron	per ton delivered	£8 [illegible] to £9
Bars	delivered, £11 to £11 10s	per ton
Galvanised Corrugated Sheets—		
	Nos. 16 to 20	Nos. 22 to 24
6ft. to 8ft. long, medium gauge	Per ton £13 0 0	Per ton £[illegible]
Best ditto	13 0 0	14 0 0
Wire Nails, Pointe de Paris—		
5 to 7	8 9 10 11 12 13 14 15	B.W.G.
8.3 8.9 9.3 9.9 10.3 11/	11.9 12/ 12/	per cwt.

	Per ton.	Per ton.
Cast Iron Columns	£7 12 2	to £[illegible]
Cast-Iron Stanchions	7 10 0	,, [illegible]
Rolled-Iron Fencing Wire	[illegible]	[illegible]
Rolled-Steel Fencing Wire	7 5 0	,, 7 10 [illegible]
,, ,, Galvanised	8 15 0	,, [illegible]
Cast-Iron Sash Weights	5 0 0	,, 5 5 0
Cut Floor Brads	9 15 0	,, [illegible]
Corrugated Iron, 24 gauge	16 0 0	,, —
Galvanised Wire Strand, 7 ply, 11 B.W.G.	14 5 0	,, —
B.B. Drawn Telegraph Wire, Galvanised—		
0 to 8	9 10 12	12 B.W.G.
£10 10s. £10 15s	£11 0s. £11 5s.	£11 15s. per ton

Cast-Iron Socket Pipes—

3in. diameter	£6 2 6	to £6 7 0
4in. to 6in.	[illegible]	,, [illegible]
7in. to 24in. all sizes	5 7 6	,, 6 0 0

[Coated with composition, 5s. 0d. per ton extra. turned and bored joints, 5s. 0d. per ton extra.)

Pig Iron—	Per ton	
Cold Blast, Lilleshall	116s. 6d.	to 117s. 6d.
Hot Blast, ditto	70s. 6d.	,, 75s. 6d.

Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—

Gas Tubes	75 per cent.
Water Tubes	72½ ,,
Steam Tubes	67½ ,,
Galvanised Gas Tubes	[illegible] ,,
Galvanised Water Tubes	[illegible] ,,
Galvanised Steam Tubes	57½ ,,

OTHER METALS.

Spelter, Silesian	Per ton £20 [illegible]	to £2[illegible]
Lead Water Pipe, Town	[illegible]	—
,, ,, ,, Country	[illegible]	—
Lead Barrel Pipe, Town	[illegible]	—
,, ,, ,, Country	[illegible]	—
Lead Pipe, Tinned inside, Town	27 7	—
,, ,, ,, Country	[illegible]	—
Lead Pipe, Tinned inside and outside ....Town	29 17	—
,, ,, ,, ,, Country	30 12	—
Composition Gas-Pipe, Town	28 7	—
,, ,, Country	29 2	—
Lead Soil-pipe (up to 4½in.) Town	28 7	—
,, ,, ,, Country	[illegible]	—
[Over 4½in. £1 per ton extra.]		
Lead Shot, in 28lb. bags	24 15 0	,, —
Copper Sheets, sheathing & rods	[illegible]	[illegible]
Copper, British Cake and Ingot	71 10 0	,, 72 0
Tin, English Ingots	190 0 0	,, [illegible]
Do., Bars	191 10 0	,, [illegible]
Pig Lead, in 1cwt. pigs (Town)	22 7	,, —
Sheet Lead, Town	24 17	,, —
,, ,, Country	[illegible]	,, —
Genuine White Lead	30 5 0	,, —
Refined Red Lead	25 10 0	,, —
Sheet Zinc	30 0 0	,, —
Old Lead, against account	19 17	,, —
Tin per cwt.	11 [illegible]	,, —
Cut nails (per cwt. basis, ordinary brand	0 11 6	,, —

TIMBER.

CONSTRUCTIONAL.

Yellow Pine Deals, Quebec, per standard:—		
1st quality	£38 0 0	to £4[illegible] 0 0
,, ,, ,, 2nd ,,	26 0 0	,, 32 0 0
,, ,, ,, 3rd ,,	16 0 0	,, 18 10 0
Spruce Deals: St. John's	10 0 0	,, 11 10 0
,, ,, Miramichi	9 10 0	,, 10 15 0
,, Boards: Swag	11 0 0	,, 12 0 0
Red Deals: Archangel 1st quality	21 0 0	,, 24 0 0
,, ,, ,, 2nd ,,	16 0 0	,, 19 0 0
,, ,, ,, 3rd ,,	12 0 0	,, 14 0 0
,, ,, St. Petersburg—		
,, ,, ,, 1st quality	16 10 0	,, 18 0 0
,, ,, ,, 2nd ,,	14 10 0	,, 15 10 0
,, ,, Wyborg & Cleaborg	12 10 0	,, 15 0 0
,, Gefle, Gothenburg, and Stockholm	12 10 0	,, 17 0 0
White Deals: Crown	14 0 0	,, 15 10 0
,, ,, Seconds	11 10 0	,, 13 0 0
Flooring: White and Planed—		
1st and 2nd quality mixed	10 15 0	,, 11 15 0
1st, 2nd, & 3rd quality mixed	10 5 0	,, 11 0 0
Red Planed, 1st quality	14 10 0	,, 17 0 0
Pitch Pine: Prime Deals and Boards	18 0 0	,, 23 0 0
Lignum Vitæ Per ton	7 0 0	,, 14 0 0

	Per cubic foot.
Yellow Pine Logs (waney board)	0 5 0 ,, 0 5 [illegible]
Pitch Pine Logs	0 2 0 ,, 0 2 [illegible]
Birch: Quebec Logs	0 2 3 ,, 0 2 [illegible]
Oak: Austrian Wainscot	0 7 0 ,, 0 8 0
Mahogany: Gaboon	0 2 0 ,, 0 2 3

FURNITURE AND HARDWOODS.

Teak: Burmese, per load, 50ft.	£20	0	0	to	£25	0	0
Teak: Java, per load, 50ft.	16	0	0	,,	21	0	0
	Per cubic foot.						
Oak Planks: U.S.A., imported	0	1	9	to	0	2	6
,, Boards ,, ,, Prm.	0	3	0	,,	0	3	6
,, ,, ,, ,, Mdm.	0	2	6	,,	0	2	9
Sequoia (Californian Redwood)	0	2	4	,,	0	3	6
Birch: Quebec logs	0	2	3	,,	0	2	9
,, ,, sawn planks	0	1	3	,,	0	2	0
Oak: Austrian Wainscot	0	7	0	.	0	8	0
Walnut: Prime boards and planks	0	6	0	,,	0	6	6
Walnut: Mdm. ,, ,,	0	3	6	,,	0	4	6
Greenheart: Hewn logs	0	3	3	,,	0	4	0
Cedar: Cigar box	0	4	9	,,	0	5	6
Satin Walnut: Imp. sawn boards, prime	0	2	4	,,	0	2	9
Orham: Imp. sawn boards, prime	0	2	0	,,	0	2	3
Mahogany: St. Domingo, Cuba, and Honduras	0	6	0	,,	0	9	0
,, African, Assinee, &c.	0	5	0	,,	0	6	6
,, Lagos and Benin	0	4	6	,,	0	6	0
,, Sekondi and Cape Lopez	0	3	0	,,	0	4	0
,, Gaboon	0	2	0	,,	0	2	3
Satinwood: West Indian	0	10	0	,,	0	14	0
Rosewood Per ton	8	0	0	,,	12	0	0
Lignum Vitæ ,,	7	0	0	,,	14	0	0

STONE.*

Red Mansfield, in blocks per foot cube	£0	2	4
Darley Dale, ditto ,,	0	2	3
Red Corsehill, ditto ,,	0	2	2
Closeburn Red Freestone, ditto ,,	0	2	0
Ancaster, ditto ,,	0	1	10
Greenshill, ditto ,,	0	1	10
Chilmark, ditto (in truck at Nine Elms) ,,	0	1	10½
Hard York, ditto ,,	0	2	10
Ditto ditto 6in. sawn both sides, landings, random sizes per foot sup.	0	2	8
Ditto ditto 3in. slab sawn two sides, random sizes ,,		1	3

* All F.O.R. London.

Bath Stone, delivered on road waggons, Paddington Depot per foot cube	0	1	7½
Ditto, ditto, Nine Elms Depot ,,	0	1	9½
Beer Stone, delivered on rail at Seaton Station ,,	0	1	0
Ditto, delivered at Nine Elms Station ,,	0	1	6

Portland Stone, in random blocks of 20ft. average:—

	Brown Whit Bed. Per foot cube.	White Base Bed
Delivered on road waggons at Paddington Depot, Nine Elms Depot, or Pimlico Wharf	£0 2 3	£0 2

SLATES.

	in.	in.	£	s.	d.	per 1,000 of 1,200 at r.stn
Blue Portmadoc	20 × 10		12	12	6	
,, ,,	16 × 8		6	12	6	,, ,,
Blue Bangor	20 × 10		13	2	6	,, ,,
,, ,,	20 × 12		13	17	6	,, ,,
First quality	20 × 10		13	0	0	,, ,,
,, ,,	20 × 12		13	15	0	,, ,,
,, ,,	16 × 8		7	5	0	,, ,,
Eureka unfading green	20 × 10		15	17	6	,, ,,
,, ,,	20 × 12		18	7	6	,, ,,
,, ,,	18 × 10		13	5	0	,, ,,
,, ,,	16 × 8		10	5	0	,, ,,
Permanent green	20 × 10		11	12	6	,, ,,
,, ,,	18 × 10		9	12	6	,, ,,
,, ,,	16 × 8		6	12	6	,,

BRICKS.

(All prices net.)

First Hard Stocks	£1	15	0	per 1,000 alongside, in
Second Hard Stocks	1	11	0	,, ,, (river
Mild Stocks	1	9	0	,, ,, ,,
Picked Stocks for Facings	2	5	0	,, livered at rly. stn.
Flettons	1	10	0	,, ,, ,,
Pressed Wire Cuts	1	18	0	,, ,, ,,
Red Wire Cuts	1	14	0	,, ,, ,,
Best Fareham Red	3	12	0	,, ,,
Best Red Pressed Ruabon Facing	5	0	0	,, ,, ,,
Best Blue Pressed Staffordshire	3	15	0	,, ,, ,,
Ditto Bullnose	4	0	0	,, ,, ,,
Best Stourbridge Firebricks	3	14	0	,, ,, ,,
2½in. Best Red Accrington Plastic Facing Bricks	4	10	6	,, Net, delivered in full truck loads in London.
"Accrington Best Red Plastic Facing Bricks per 1,000				£2 10 0
3½" ditto Second Best Plastic ditto				2 2 6
Ditto Ordinary Second Bricks				1 11 3
Ditto Plastic Engineering Bricks				1 17 6
Sewer Arch Brick not more than 3½" in thickest part				2 0 0
3½" Chimney Bricks fit for outside work				2 6 0
3½" ditto ditto through and through				2 0 0
3½" Beaded, Ovolo and Bevel Jambs; Octagons; 2½" and ½" radius Bullnoses; Stock patterns				3 7 6
Accrington Air Bricks, 9" × 2 course deep, each				0 0 6
Ditto ditto 9" × 1 course ,,				0 0 3

Accrington Camber Arches:—

3 course deep,	4½"	soffit,	per foot opening	...	0	1	3
4	ditto	4½"	ditto	ditto	ditto	...	0	1	8
5	ditto	4½"	ditto	ditto	ditto	...	0	2	1
6	ditto	4½"	ditto	ditto	ditto	...	0	2	6
3	ditto	9"	ditto	ditto	ditto	...	0	2	1
4	ditto	9"	ditto	ditto	ditto	...	0	2	11
5	ditto	9"	ditto	ditto	ditto	...	0	3	9
6	ditto	9"	ditto	ditto	ditto	...	0	4	6

Net free on rail or free on boat at works

GLAZED BRICKS.

HARD GLAZES, (PER 1,000.)

Best.	White, Ivory, and Salt Glazed. Seconds.	Best. Buff, Cream, & Bronze.	Other Colours.	Second Colours.
Stretchers—				
£12 7 6	£10 17 6	£13 17 6	£17 17 6	£12 7 6
Headers—				
11 17 6	10 7 6	13 7 6	17 7 6	11 17 6
Quoins, Bullnose, and 4½in. Flats—				
15 17 6	14 17 6	17 17 6	21 7 6	15 17 6
Double Stretchers—				
17 17 6	16 7 6	20 17 6	24 7 6	17 17 6
Double Headers—				
14 17 6	13 7 6	17 17 6	21 7 6	14 17 6
One side and two ends, square—				
18 17 6	17 7 6	21 17 6	26 7 6	18 17 6
Two sides and one end, square—				
19 17 6	18 7 6	22 17 6	26 17 6	19 17 6
Splays and Squints—				
17 7 6	15 17 6	21 17 6	24 17 6	17 7

Plinth and Hollow Bricks. Stretchers and Headers—5d. each 4d. each 6d. each 6d. each 5d. each

Double Bullnose, Round Ends, Bullnose Stops—5d. each 4d. each 6d. each 6d. each 5d. each

Rounded Internal Angles—4d. each 3d. each 5d. each 5d. each 4d. each

MOULDED BRICKS.

Stretchers and Headers—8d. each 8d. each 8d. each 8d. each 8d. each

Internal and External Angles—1/2 each 1/2 each 1/2 each 1/2 each 1/2 each

Cill Bullnose, Stretchers and Headers—5d. each 4d. each 6d. each 6d. each 5d. each

Majolica or Soft Glazed Stretchers and Headers	Per 1,000 £22 17 6
,, ,, Quoins and Bullnose	27 17 6
Compass bricks, circular and arch bricks of single radius £6 per 1,000 over above list for their respective kinds and colours	Not exceeding 9in.
Camber arch bricks, any kind or colour, 1s. 2d. each	by 4½in. by 2½in.

Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.

* These prices are carriage paid in full truck loads to London Stations.

	s.	d.	
Thames Sand	7	6	per yard, delivered
Pit Sand	7	0	,, ,,
Thames Ballast	6	0	,, ,,

	s.	d.	Per ton, delivered
Best Portland Cement	36	0 to 41	0
Ground Blue Lias Lime	21	0	per ton delivered.

Exclusive of charge for sacks.

	s.	d.	Per yard, delivered
Grey Stone Lime	13	6 to 14	0

Stourbridge Fireclay in sacks 27s. 0d. per ton at railway station.

TILES.

	s.	d.	Dlvrd. at
Plain red roofing tiles	42	0	per 1000 ry. stn.
Hip and Valley tiles	3	7	per doz. ,, ,,
Broseley tiles	50	0	per 1000 ,, ,,
Ornamental tiles	52	6	,, ,, ,,
Hip and Valley tiles	4	0	per doz. ,, ,,
Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000 ,, ,,
Ornamental do.	60	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	0	,, ,, ,,
Selected "Perfecta" roofing tiles:—Plain tiles (Peake's)	46	0	per 1000 ,, ,,
Ornamental do.	48	6	,, ,, ,,
Hip tiles	3	10½	per doz. ,, ,,
Valley tiles	3	4½	,, ,, ,,
"Rosemary" brand plain tiles	48	0	per 1000 ,, ,,
Ornamental tiles	50	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	8	,, ,, ,,
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 ,, ,,
Hand-made sand-faced	45	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	6	,, ,, ,,
Hartshill" brand plain tiles, sand-faced	50	0	per 1000 ,, ,,
Pressed	47	6	,, ,, ,,
Ornamental do.	50	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
alley tiles	3	6	,, ,,

OILS.

Rapeseed, English pale,	per tun	£28	15	0	to £29	5	0
Do., brown	,, ...	26	15	0	,, 27	5	0
Cottonseed, refined	,, ...	29	0	0	,, 30	0	0
Olive, Spanish	,, ...	39	10	0	,, 40	0	0
Seal, pale	,, ...	21	0	0	,, 21	10	0
Cocoanut, Cochin	,, ...	46	0	0	,, 46	10	0
Do., Ceylon	,, ...	42	10	0	,, 43	0	0
Do., Mauritius	,, ...	42	10	0	,, 43	0	0
Palm, Lagos	,, ...	32	5	0	,, 33	5	0
Do. Nut Kernel	,, ...	35	0	0	,, 35	10	0
Oleine	,, ...	17	5	0	,, 19	5	0
Sperm	,, ...	30	0	0	,, 31	0	0
Lubricating U.S.	per gal	0	7	0	,, 0	8	0
Petroleum refined	,, ...	0	0	6½	,, 0	0	6¾
Tar, Stockholm	per barrel	1	6	0	,, 1	10	0
Do., Archangel	,, ...	0	19	6	,, 1	0	0
Linseed Oil	per gal.	0	2	5½	,,	—	
Baltic Oil	,, ...	0	2	8	,,	—	
Turpentine	,, ...	0	2	5½	,,	—	
Putty (Genuine Linseed Oil)	per cwt.	0	9	0	,,	—	
Pure Linseed Oil "Stority" Brand	,,	0	10	0	,,	—	

GLASS (IN CRATES).

	15oz.	21oz.	26oz.	32oz.
English Sheet Glass:				
Fourths	2d.	3d.	3¾d.	4¾d.
Thirds	2¼d.	3¼d.	4¼d.	5¾d.
Fluted Sheet	2¼d.	3¼d.	6¼d.	7d.
Hartley's English Rolled Plate:	⅛in.	3/16in.	¼in.	
	2¼d.	2¾d.	3d.	
Figured Rolled and Repoussine	White. 3¼d.	Tinted 5d.		

VARNISHES, &c.

	Per gallon.		
Fine Pale Oak Varnish	£0	8	0
Pale Copal Oak	0	10	0
Superfine Pale Elastic Oak	0	12	6
Fine Extra Hard Church Oak	0	10	0
Superfine Hard-drying Oak, for seats of churches	0	14	0
Fine Elastic Carriage	0	12	0
Superfine Pale Elastic Carriage	0	16	0
Fine Pale Maple	0	16	0
Finest Palo Durable Copal	0	18	0
Extra Pale French Oil	1	1	0
Eggshell Flatting Varnish	0	18	9
White Copal Enamel	1	4	0
Extra Pale Paper	0	12	9
Best Japan Gold Size	0	10	9
Best Black Japan	0	16	0
Oak and Mahogany Stain	0	9	0
Brunswick Black	0	8	0
Berlin Black	0	16	0
Knotting	0	10	0
French and Brush Polish	0	10	0

TRADE NOTES.

Under the direction of Mr. A. F. Scott, F.S.I., architect, Norwich, Boyle's latest patent "air-pump" ventilators have been applied at the P.M. Church, Attleborough, and P.M. Church, Ludham.

Railway companies are often requiring waterproof vaults, floors, etc. Concrete, as most readers know, can be made waterproof by adding a small percentage of Pudlo, the powder which makes cement waterproof. Among the large railways using Pudlo may be mentioned the Midland and Great Western of Ireland.

The goodwill of the stable-fitting business of the St. Pancras Ironwork Co. (Ltd), with all their trade marks, etc., is now amalgamated with that of Young and Co., 161, Victoria-street, Westminster, who will supply similar patterns of stable, cow-house, and piggery fittings, as well as their own patterns.

Eight times in as many weeks the Invincible Talbot car has taken the highest awards in hill-climbing open to all makes of cars, and last Saturday no fewer than seven more firsts fell to them in the Leicestershire A.C. Hill Climb, bringing their total of Firsts this season up to 38, which shows them to be fully meriting the title of "Invincible" conferred upon them for their prowess in competitive trials many years ago.

Mr. George Nicol has been appointed road surveyor for the Garioch district of Aberdeenshire at £150 a year.

Mr. John H. Brett, county surveyor of Antrim, and Mr. William Allen, assistant surveyor, have sent in their resignations.

Cardinal Bourne opened on Wednesday a new wing at Ratcliffe College, near Leicester, which has been erected at a cost of £8,000.

Mr. Joseph A. Green, of Prestbury, Cheltenham, has been appointed highway surveyor for the South district of the Bakewell Rural District Council.

The Holborn Borough Council have decided to purchase for £20,000 a site on which to erect workmen's dwellings in Neal-street and Nottingham-court, Long-acre.

Mr. Matthew Wickett, who for 48 years has been highway surveyor to the Camelford Rural District Council, has tendered his resignation on account of advanced age.

Mr. W. O. Hughes, assistant sanitary inspector to the Conway Rural District Council, has been appointed surveyor inspector of nuisances to the Bettws-y-Coed Urban District Council.

Mr. Michael Sullivan, of Kingston, Ont., has been awarded the contract for the construction of the new military barracks at Long Branch, Toronto. The contract price is 644,000dol.

The Hammersmith Borough Council decided on Wednesday, by 21 votes to 17, to take over and maintain the garden space in St. Peter's-square in order to prevent the site being built upon.

It was announced to the Liverpool City Council on Wednesday that the Local Government Board has given formal sanction to the borrowing of £10,000 for the purposes of the Small Dwellings Acquisition Act, 1899.

Lord Devonport has consented to act as arbitrator in a dispute in which 500 men engaged by Messrs. Nowell and Co., contractors, on work at the East India Docks are concerned. The men returned to work on Tuesday.

Mr. W. A. Duff has been appointed chief engineer of bridges for the Intercolonial Railway of Canada. Until recently, Mr. Duff, who is a graduate of the department of civil engineering of the University of Toronto, occupied the position of assistant bridge engineer for the Transcontinental Railway.

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DEPTFORD WHARF,
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WHITE SILICA PAVING.

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Olivers' Seasoned Hardwoods,

APPLY TO—

WM. OLIVER & SONS, Ltd.,
120, Bunhill Row, London, E.C.

TENDERS.

. Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

BARKING.—For the supply of a 2-ton locomotive steam crane with a radius of 34ft. at the northern sewage outfall works, for the London County Council :—

Booth, J., & Bros., Ltd., Leeds	£730	0	0
Wilson, J. H., & Co., Birkenhead	695	0	0
Smith, T., & Sons, Rodley, Leeds	675	0	0

* Recommended for acceptance.

BENINGTON.—For the erection of two pairs of cottages, for Boston Rural District Council. Mr. H. Kidd, Kirton, architect —

Dawson, W.	£757	10	0
Vamplew Bros.	722	0	0
Allen, H.	712	0	0
Belton and Co. (accepted)	648	0	0
Pett (one pair)	362	0	0

(All of Boston.)

BRISTOL.—For alterations to No. 108, Whiteladies-road, Clifton, Bristol, for Messrs. Lennards, Ltd., Queen's-road, Bristol. Messrs. Bridgman and Bridgman, A.R.I.B.A., M.S.A., Devon Chambers, Paignton, Devon, architects :—

Parnall and Sons	£598	0	0
Goodway, A.	551	0	0
Stone, A. C., and Co.	475	0	0
Wilkins, R., and Sons	473	10	0
Ditto (amended and accepted)	460	0	0

BROMPTON, S.W.—For new porches and gallery exits to the parish church. Mr. R. W. Knightley Goddard, 19, Buckingham-street, Strand, architect. Quantities by Messrs. Hicks and Lynam, 3-7, Southampton-street, Strand :—

Bridgeman, R., and Son	£2,798	0	0
Denne, T. T.	2,575	0	0
Douglas, J.	2,534	0	0
Dorey and Co., Ltd.	2,484	0	0
Webster and Cannon	2,478	0	0
Roberts, L. H. and R.	2,477	0	0
Dove Bros., Ltd.	2,429	0	0
Downs, W., and Son*	2,412	0	0

* Recommended for acceptance.

CAMBORNE.—For alterations and additions to premises, Market-square, Camborne, for Messrs. Lennards, Ltd. Messrs. Bridgman and Bridgman, A.R.I.B.A., M.S.A., Devon Chambers, Paignton, Devon, architects

Mills, F., Camborne	£445	0	0
Trounson, W. H., & Son, Penzance	420	0	0
Carkeek, A., Redruth	385	0	0
Thomas, H., and Sons, Praze, Cornwall (accepted)	376	15	0

CROSSNESS, S.E.—For the supply of a 15-ton overhead traveller for the new engine-house at Crossness pumping station, for the London County Council :—

Broadbent, T., and S., Ltd., Huddersfield	£795	0	0
Smith, T., and Sons, Rodley, near Leeds	640	0	0
Booth, J., and Bros., Ltd., Rodley, near Leeds*	600	0	0

* Recommended for acceptance.

DARTFORD, KENT.—For additions to grammar school, for the governors. Mr. R. Marchant, A.R.I.B.A., 2, Bedford-square, London, W.C., architect. Quantities by Messrs. J. S. Paul and Son, 31, Bedford-row, W.C. :—

Roberts, S., Plymouth	£4,725	8	3
Flay, W. F., Ltd., Dartford	4,491	14	0
Strand Building Co.	4,430	0	0
Knight, T., Sidcup	4,366	0	0
Thomas and Edge, Woolwich	4,265	0	0
Friday and Ling, Erith	4,243	0	0
Podger and Sons, Bromley	4,119	0	0
Ellingham, J. W., Dartford	4,117	0	0
Milton Bros., Gravesend	4,088	10	0
Smith, W., and Sons, London-road, Croydon*	4,083	10	0

* Accepted subject to the approval of the Board of Education. These prices are less allowance as per No. 3 alternative.

DULWICH, N.—For the reconstruction of the horse tramways in Ball's Pond road, between Southgate-road and Kingsland-road, for the London County Council. Dick, Kerr, and Co., Ltd. (recommended for acceptance on schedule of prices), about £13,500.

EDMONTON.—For the construction of a new power station at Earlsfield. Mr. J. Dixon Butler, F.R.I.B.A., surveyor to the Metropolitan Police District, New Scotland Yard, S.W., architect. Quantities by Messrs. Thurgood, Son, and Chidgey, 8, Adelphi-terrace, Strand, W.C.

Holloway, Bros.	£11,650	0	0
Perry and Co.	11,130	0	0
Pattman and Fotheringham	10,944	0	0
Higgs and Hill	10,844	0	0
Rice and Sons	10,837	0	0
Barker, D. W., and Co.	10,780	0	0
Sabey and Co.	10,770	0	0
Dorey and Co.	10,665	0	0
Smith and Sons	10,563	0	0
Holliday and Greenwood	10,448	0	0
Lorden	10,458	0	0
Taylor, W.	10,[illegible]	0	0
Higgs, F. and H.	10,240	0	0
Adamson and Sons	10,197	0	0
Dickens, J. W.	10,189	0	0

GREENWICH.—For installing heating apparatus in connection with the remodelling of the Randall-place school, Greenwich, for the London Education Committee —

Palowkar and Sons, Queen-st.	£1,096	0	0
Arding and Dyne, Southwark Bridge-road	1,025	0	0
Cannon, W. G., and Sons, Ltd., Southwark	869	0	0
Cannon and Hefford, Peckham	852	0	0
Denne, E., and Best, Ltd., 3, Monument-street	792	0	0
The Brightside Foundry and Engineering Company, Ltd., Victoria-street (withdrawn)	695	0	0

(Architect's estimate, £845.)
* Recommended for acceptance.

HACKNEY, N.E.—For erecting two cottages, for use as married men's quarters, in the yard of the fire-station in course of erection in Rodney road, Hackney, for the London County Council :—

Godson, G., and Sons (accepted)	£625	1	8

HACKNEY.—For the installation of electric light at Hackney new fire station, for the London County Council :—

Cox-Walkers, Ltd., Darlington	£457	0	0
Finch and Wheeler, Ltd., Westminster, S.W.	254	7	9
Cash, H. J., and Co., Ltd., Westminster, S.W.	238	7	0
Tredegar & Co., Victoria-st., S.W.	176	0	0
Taylor, G. E., and Co., Cannon-street, E.C.	162	0	0

(Chief engineer's estimate, £196.)
* Recommended for acceptance.

HAMMERSMITH, W.—For constructing roads and sewers on the eastern section of the Old Oak estate, Hammersmith, for the London County Council :—

Latter, J., Kensal Rise	£21,575	9	4
Davey and Armitage, Southend-on-Sea	19,748	0	0
Dixon, J., St. Albans	17,363	12	0
Griffiths, W., and Co., Ltd., Bishopsgate, E.C.	16,916	12	10
Wimpey, G., and Co., Hammersmith	16,654	17	8
Farrow, H., Brixton	16,241	15	4
Mowlem, J., and Co., Ltd., Westminster	15,554	0	0
Woodham, H., and Sons, Catford	14,259	5	1
Coxhead, F. J., Leytonstone*	13,100	0	0
Thompson, A., North Finchley†	11,845	9	2

(Architect's estimate, £15,325.)
* Recommended for acceptance. † Incorrect.

HAMMERSMITH, S.W.—For painting and tarring works at Ravenscourt Park and Shepherd's Bush Common, for the London County Council :—

Chapman, W., and Sons, Black Lion-lane, Hammersmith	£145	0	0
Buthin, W. J., Ravenscourt-avenue, Hammersmith*	125	10	0

(Estimate of the chief officer of the parks department, £150.)
* Recommended for acceptance.

HEDNESFORD, STAFFS.—For building bakery, house, and stables at Hednesford, for Mr. S. J. Stanton. Mr. W. F. Edwards, 1, Newhall-street, Birmingham, architect —

Mason, T., and Son, Hednesford (accepted)	£2,449.		

LONDON.—For the supply of five miles of 4-0 grooved trolley wire in connection with the overhead system of electric traction, for the London County Council :—

	Price per mile.		
Thompson and Co., Garlick-hill, E.C. (providing for manufacture in France)	£87	15	4
Smith, F., & Co., Manchester*†	93	6	8
Ditto (per ton)	8	13	4
British Insulated & Helsby Cables, Ltd., Prescot, Lancashire	94	0	0
Bolton, T., & Sons, Ltd., Bishopsgate, E.C.	91	13	0

Estimated value of contract, £455.
* Accepted. † 2½ per cent. discount.

LONDON, S.W.—For tar-paving works at Battersea Park and Brockwell Park respectively, for the London County Council :—

	A.	B.
Smart, J., and Son	£44 10 0	£44 0 0
Hobman, A. C. W., & Co., Ltd.	64 0 0	57 17 4
Chittenden and Simmonds*	50 12 3	35 1 3

(Estimates of the chief officer of the parks department, comparable with the tenders, are £57 and £50 respectively.) All of Victoria-street, S.W.
A.—Battersea Park. B.—Brockwell Park.
* Accepted for both tenders.

LONDON, S.—For the provision and installation of two electrically-driven Worthington Compound Duplex Pumping Engines at the Hatcham Pumping Station, for the Metropolitan Water Board :—

Simpson, James, & Co., Queen Victoria-street, E.C.	£450	0	0

LONDON.—For alterations and repairs to "Bona Dea," 3, The Gardens, Cranley-gardens, S.W., for Messrs. Reader, W. C., & Son, Mitcham, E. £[illegible] 2 0
Stewart, J., and Son, Ltd., Hunter-street, E.C. 1,149 0 0
Lascelles, Son, and Pearman, Ltd., Lauriston-road, E.* 1,[illegible] 0 0
* Recommended for acceptance.
[illegible] for alterations and repairs to [illegible] Ltd.* £[illegible] 0 0
* Recommended for acceptance.

LONDON.—For the provision of additional sanitary accommodation and the construction of a new boiler-house, &c., at Wood Green Schools, Cross-road, Wood Green, for the London County Council :—

Reynolds, A., and Co., Ltd., Hammersmith, W.	£1,287	11	5
Ecclestone, Hoyle, and Co., Ltd., Broughton, Manchester	1,[illegible]	11	3
Sweetman and Cleaver, Ltd., Salford, Manchester	1,11[illegible]		
Pearman, Ltd., Hatcham Road, S.E.	1,1[illegible]		
Johnson and Phillips, Ltd., Charlton, S.O., Kent	1,[illegible]	0	0
Spagnoletti, Ltd., Goldhawk road, N.*	1[illegible]	14	0
Estimate of Director of Education, £[illegible]			
* Recommended for acceptance.			

LONDON.—For the erection of [illegible] and formation of a tar-paved [illegible] for [illegible] Victoria Gardens, for the London County Council :—

Bowyer, J., and C., Ltd., Upper Norwood, S.E.	£[illegible]	0	0
Horswell, H. C., Forest Gate, E.	2[illegible]	0	0
Garrett, J., & Sons, Bayswater, W.	18[illegible]	0	0
Newell, H., Poplar, E.	18[illegible]	0	0
Bickerton, W., New Cross, S.E.*	17[illegible]	0	0
* Recommended for acceptance.			

LONDON.—For the supply of [illegible] and labour in repairing certain schools and women's institutions, for the London Education Committee. Accepted [illegible] Hirons' tables (10%) :—

Bennet Furnishing Co., Ltd., Old Kent-road, S.E.	£[illegible]	0	0
Aberdeen tables, folding dining tables, and [illegible] accepted contracts :—			
Bradford, T., and Co., Ltd., Salford, Manchester	[illegible]	0	0
Teachers' tables, 4ft. 6in., and [illegible] Infants' tables, 2ft. [illegible] :—			
Hammer, G. M., and Co., Ltd., Bermondsey, S.E.	2[illegible]	0	0
Teachers' tables, 3ft. 6in., and kindergarten tables :—			
London School Furniture Co., Upper-street, N.	171	0	0

NORTH KENSINGTON.—For [illegible] school in Lancaster-road, North Kensington, for the London Education Committee :—

Garrett, J., and Son, Balham-hill	£2[illegible],343	0	0
Wales, G. E., and Sons, Ltd., Haymarket	14,674	0	0
Appleby, J., and Sons, Southwark Park	14,[illegible]	0	0
Smith, J., and Sons, Ltd., South Norwood	14,[illegible]	0	0
Rowley Bros., West Green*	13,[illegible]	0	0
* Accepted.			

RAMSGATE.—For works of painting and repairs at various council schools, for the Ramsgate Education Committee :—

Houghton, W.*	£[illegible]	1[illegible]	1
* Accepted.			

SANDERSTEAD.—For laying of sewers, gullies, and manholes in Garden Suburb, Ditherington. Mr. A. E. Williams, 12, High-street, Sanderstead, engineer and surveyor :—

Harris, T., Bexley	£[illegible]	4	4
Trenwith, G., Perry, Ltd., Bromley	[illegible]	14	0
Prichett, G. E., Bromley	[illegible]	3	2
Edwards, G. and W., Shrewsbury*	[illegible]	0	0
* Accepted.			

SOUTHWARK, S.E.—For the enlargement of the mortuary pavilion and the erection of a shelter at Southwark Park, for the London County Council :—

Bowyer, J., & C., Ltd., Upper Norwood, S.E.	£[illegible]7	0	0
Horswell, H. C., Forest Gate, E.	1[illegible]	0	0
Fletcher, F. W., Tooting, S.W.	138	10	0
Newell, H., Poplar, E.	13[illegible]	0	0
Garrett, J., and Son, Balham Hill*	127	0	0
* Recommended for acceptance.			

TORQUAY.—For [illegible] at Torquay, for the Devon Education Committee :—

Wakeham Bros., Plymouth	£[illegible]	15	1
Accepted. Lowest tender submitted.			

TOTTENHAM.—For [illegible] Bettes-street, [illegible] Green Schools, for the London County Council :—

Palowkar and Sons, Queen-street	£981	0	0
Stock & Co., Ltd., Clerkenwell	8[illegible]	0	0
Cannon, W. G., & Sons, Southwark	77[illegible]	0	0
Yetton, J., & Co., Ltd., Leytonstone	74[illegible]	0	0
May, J. and F., Ltd., Upper Edmonton	74[illegible]	10	0
Brightside Foundry & Engineering Co., Ltd., 23, Victoria-street	730	0	0
Bradley, G. and E., Leytonstone	7[illegible]	0	0
Kennard, T. S., and Sons, Great Portland-street	72[illegible]	0	0
Carmichael, J., Acton	7[illegible]	11	0
Denne, E., and Best, Ltd., Monument-street	[illegible]	0	0
Grimsdell, T., Hatcham	69[illegible]	0	0

(Architect's estimate, £775.)
[illegible] for acceptance.

(Continued on page XII.)

LIST OF COMPETITIONS OPEN.

Aug.	25—Cottage Homes, Tendring		A. J. H. Ward, Clerk, Harwich.
Sept.	1—Town Planning the Borough, High Wycombe (Assessors)	£25, £10, £5	T. J. Rushbrooke, Boro' Sur., High Wycombe.
Oct.	31—Houses and Planning, York	£100, £50, £25	F. W. Spurr, City Engineer, Guildhall, York.
Nov.	1—Royal Palace, Sofia		Section d'Architecture au Ministere des Travaux Publics, Sofia, Bulgaria.
,,	1—Law Courts, Sofia		Section d'Architecture au Ministere des Travaux Publics, Sofia, Bulgaria.
No date	—Laying Out Estate (50 acres) and Erecting Workmen's Dwellings, Bradford (H. T. Hare, F.R.I.B.A., Assessor)		F. Stevens, Town Clerk, Town Hall, Bradford.
do.	—Twelve Workmen's Cottages, Skelmanthorpe		W. Fisher, Clerk, Skelmanthorpe, near Huddersfield.

LIST OF TENDERS OPEN.

BUILDINGS.

Aug.	1—Telephone Exchange, Alterations to, Birmingham	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
,,	1—Rebuilding Kniveton Culvert, Main Road, Fenny Bentley	Derbyshire County Council	W. Horton, A.M.I.C.E., County Sur., County Offices, Derby.
,,	1—School, Improvements to, Glynarthen	Cardigan Education Committee	C. Dickens-Lewis, County Archt., Aberystwith.
,,	2—Men's Institute, Rebuilding, Kingsand		H. A. Hosking, Archt., Landrake, St. Germans, Cornwall.
,,	2—Workmen's Cottages (38), &c., Dursley	Rural District Council	A. W. Probyn, Archt., 9, Berkeley-street, Gloucester.
,,	2—Cinema, Cross Keys, Mon.		John W. Aldiss, M.S.A., Newbridge, Mon.
,,	2—Council School, Alterations to, Broadstone	Dorset Education Committee	The Education Secretary, County Offices, Dorchester.
,,	2—Eight Cottages, Bandon	Rural District Council	A. Haynes, Clerk, Bandon.
,,	2—C.M. Vestry, Thomastown	Trustees	J. T. Jenkins, M.S.A., Porth, Glam.
,,	2—Two Mission Churches, Portsmouth		A. E. Cogswell, Archt., Prudential Buildings, Portsmouth.
,,	2—Cemetery, Repairs, &c.. at, Bebington	Burial Board	H. C. Davies, F.S.I., Archt., 167, Old Chester-rd., Birkenhead.
,,	4—National Museum of Wales, Completion of Shell, Cardiff	Council	Smith and Brewer, Archts.. 2, Gray's Inn-square, W.C.
,,	4—Houses (10), Chopwell	Blaydon Urban District Council	H. Dalton, Clerk, Council Offices, Blaydon-on-Tyne.
,,	4—School, Alterations to, Chatterlen	Cumberland Education Committee	J. Forster, M.S.A., 13, Earl-street, Carlisle.
,,	4—Villa, Woodhouse Hill, Fartown		Sharp and Waller, Archts., 32, Bradford-road, Brighouse.
,,	5—School, Improvements to, St. Alban's-road, Dartford	Kent Education Committee	W. H. Robinson, M.S.A., Caxton House, Westminster, S.W.
,,	5—School and Teacher's Residence, Carrigrohane		Hill and Son, M.R.I.A.I., 28, South Mall, Cork.
,,	5—Council School, Repairs to, Mereham	Kent Education Committee	W. H. Robinson, Archt., Caxton House, Westminster.
,,	5—Dwelling Houses (26) Hemel Hempsted	Town Council	Franklin and Deacon, Archts., 21, Market-hill, Luton.
,,	5—Rescue Station, Brigham	West Cumberland Colliery	A. Huddart, Archt., 9, Lowther-street, Whitehaven.
,,	5—School, Repairs to, North Preston, Kent	Education Committee	W. H. Robinson, M.S.A., Caxton House, Westminster.
,,	5—Coal Store, Gasworks, Egremont	Urban District Council	J. Cowan, Sur., Town Hall, Egremont, Cumberland.
,,	5—House, &c., Northorpe	Mirfield Urban District Council	E. Gill, Eng., Council Offices, Mirfield.
,,	5—Technical Institute, Repairs to, Tonbridge	Kent Education Committee	W. H. Robinson, M.S.A., Caxton House, Westminster, S.W.
,,	5—Concrete Office Stores, Bray	Urban District Council	P. H. McCarthy, B.E., 39, Westmorland-street, Dublin.
,,	5—West Hill Council School, Improvements to, Dartford	Kent Education Committee	W. H. Robinson, M.S.A., Caxton House, Westminster, S.W.
,,	5—Ham and Bacon Factory, Additions to, Harrow	J. Adamson and Co., Ltd.	H. E. Scarborough, Archt., 22, Lowther-street, Carlisle.
,,	5—School, Repairs to, Smeeth, Kent	Kent Education Committee	W. H. Robinson, M.S.A., Caxton House, Westminster, S.W.
,,	6—Residence, Gad's Hill, Halifax		Hinchcliffe and Co., Archts., Tower Chambers, Halifax.
,,	6—Reception Station, Castle Park Barracks, Dunbar	Secretary of State for War	The Director of Army Contracts, War Office, S.W.
,,	6—Central Library, Extension of, Dunfermline	Public Library Committee	J. Shearer, Archt., 1, Bonnar-street, Dunfermline.
,,	6—Sewage Farm Buildings, Alterations to, South Hornchurch	Romford Urban District Council	The Surveyor, Market-place, Romford.
,,	6—Coastwise Labour Exchange, Liverpool Docks	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.

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The Parsonage, Lyne, Surrey. View and plan. Mr. Oswald P. Milne, Architect.

The General Post Office Extension, Faraday House, Charterhouse Buildings. Mr. E. Cropper Bennett, Architect.

The Offices, Motor House, Water Lane, Great Tower Street, E.C. Messrs. Gordon and Gunton, Architects.

Reinforced Concrete Columns.

INCREMENT VALUE DUTY.

THE LUMSDEN APPEAL.

"I am aware that the construction I feel driven to adopt has the effect of taxing builder's profits. It is not for me to consider the policy of the Act. My duty, and it is by no means an easy duty, is to discover the true effect of the language used by the Legislature in expressing its intention. I agree with Mr. Justice Horridge on this point." So said the Master of the Rolls, in dismissing the appeal in the case of "Lumsden v. Inland Revenue Commissioners" (*Times*, Aug. 1). Lord Justice Kennedy, in concurring with this view, based his judgment upon a statement of the Lord Chancellor in a recent case: "The duty of a Court of Law is simply to take the Statute it has to construe as it stands, and to construe its words in their natural significance." He also observed, "We are not at liberty, to put it shortly, to depart from the directions of the Statute, or from the figures stated in the special case." Lord Justice Swinfen Eady dissented; but, of course, the judgment of the majority prevailed. We have quoted these observations, which give the essence of the decision, because they show the highly technical legal ground on which it was founded. On the other hand, the keynote of the dissenting judgment is to be found in the words, "I can find no justification in the Statute for the contention that wherever the price realised is greater than would have been reasonably expected, the whole of the excess in price is to be deemed to be an increment in site value." There we have a diametrically opposite view upon the construction of the same words in the same Statute, which make one think about that old saying as to the Law's uncertainty.

Anyhow, the law has thus been declared by the Court of Appeal, unless and until the House of Lords intervenes, or the Act is amended, and it must now be taken that the purchase price paid for a property is not to be considered in assessment duty, but that an official estimate, called the 'gross value," must be adopted, and results worked out according to the Act from these figures. As the Master of the Rolls put it pithily, "To substitute actual price for 'gross value' or 'total value' is to effect a complete change in the scheme of the Statute." That, of course, is so, and that is exactly what the Revenue Bill now in the Commons proposes to do, with the result of theoretically putting an end to the present scheme of increment value duty altogether. Now, these few points taken from the judgment show the entirely artificial structure of the Statute. When it was passing through Parliament, many members objected to these varying forms of values, and pointed out how easily they could be juggled with officially. All this is now admitted, even in the judgments of the Court of Appeal. But there is the Act, and the Lords Justices found themselves caught in its clauses. Nor is there any longer any doubt that the taxation of builders' profits was intended from the beginning, and that the Act was drafted for these conjuring purposes. There is no way out of this net of injustice but a judgment of the House of Lords, or by an amending Statute, and Mr. Lumsden will not have fought in vain if such a Statute, fully putting an end to this freaky system, is promptly passed into law.

So the legal aspect of the question stands at present upon the divided judgment of the Court of Appeal. It may be noted, as a minor point, but as showing the vindictive character of Mr. Lloyd George, that the Solicitor-General insisted upon his technical right to have an order for costs against Mr. Lumsden. The meanness of this action is made manifest when we note that this was admittedly a test case, and that Lord Justice Swinfen Eady agreed with their own Referee in holding that the Government view was wrong. From a remark made by Mr. Pretyman in the House of Commons, it seems certain that there will be a further appeal to the House of Lords, the result of which will be awaited with much interest. The Law Lords can, and often do, rise above many things, and show a broader and bolder outlook than any of the Courts below. They have, before now, cut their way to the daylight of justice and common-sense through worse technicalities and more tangled clauses of Statutes than those seen in the Lumsden case, and it is possible, if not probable, that they may do so again. The importance of this appeal is clear when we remember that even when the new Revenue Act is passed, it is not at all likely to be made retrospective, which, indeed, would be impracticable from a business and financial point of view. We must, therefore, depend upon the House of Lords to get us out of the present muddle, and look hopefully to the promised Statute for the future.

The facts of the Lumsden case are simple enough, and doubtless they have occurred elsewhere, and will do so again. It is the figures that are confusing, and the way in which they can be juggled to bring about results. Mr. Lumsden had built a house and shop on freehold land at Forest Hall, Northumberland, and in August, 1910, he sold this, for business purposes, at the price of £750. After the sale, in February, 1911, he received provisional valuation showing original site value. Later on he was assessed at £125 [illegible] value upon his sale, and 20 per cent., or £25, was claimed from him [illegible]. The way this increased assessment was arrived at is shown by the following figures. The officials [illegible] their view of the market price of the freehold house and shop, clear of all encumbrances, charges, etc. It was admitted that the full site value was still £228, as in April, 1909. Deducting this from the price that could be expected of £668 there remained £440. The only other allowance was £90 for roads, which made up £520. Then the officials bring in the price [illegible] this £750 they deduct the £520, and thus show £230 as the site value [illegible] the occasion of the sale. From that £230 there has to be subtracted the original site value of £105 and thus we get £125 as the increase upon which 20 per cent. increment value duty is chargeable, so bringing the tax to £25. This result is only achieved by beginning with the official and imaginary market value of £668, and then, when it comes to taxation, bringing in the real price obtained of £750.

Mr. Lumsden contended, and in this he was supported by the Government Referee and Lord Justice Swinfen Eady, that the figures should be taken in the following way: Price obtained £750, to which must be added admitted capital value of tithe £33, making total gross value of fee simple £783. Deducting agreed full site value of £228, we get the difference [illegible] which must be added £90 for roads, giving £645, which, taken from the purchase money of £750, leaves £105, which is the same as the original site value, and so there was no increase, and therefore no increment value duty chargeable. This method of calculating deals with realities. The figures used are facts, and not fictions, as in the official plan. But, then, as the Master of the Rolls pointed out, to use real facts and figures would effect a complete change in the scheme of the Statute. In other words, to construe the Act upon a business basis would tear up the Budget in regard to Increment Value Duty, and put an end to those dreams of plunder out of builders' profits which it was [illegible] mutually passed to [illegible]. But the question of votes has since come in, and having got his legal decision, Mr. Lloyd George is feeling anxious as to its working in the constituencies.

The Chancellor of the Exchequer is a man of many moods, and he can be a business-like builder himself when expedient. On April 30 of this year he had a conference with members of the National Federation of Building Trades and the Institute of Builders. He was [illegible]

able, and ready to oblige. Listen to this! "You are business men. What I want to do now is to arrive at an understanding which is a practical one, and which will satisfy you as to the main principles." What could be prettier? Then he goes on: "I am thinking now about the general proposition that where a builder has exercised his brains, his skill, his ingenuity, his special knowledge, his experience, and by that means has created a value which was not in the land before, he ought to have every penny piece of that value in his pocket, and not a sixpence of it ought to go into the Exchequer. That is what I mean." Now this is simply beautiful in its businesslike fullness! it is really piled up into the perfect phrasing of a just appreciation! But how will it work out practically? Mr. Lloyd George has so many and various voices. Limehouse we know, and the Chancellor in the House; but when he sets his officials to act and assess, anything may happen. After this briefly businesslike statement to the builders in April there came the Revenue Bill printed on May 7. Then, later on, a Memorandum of July 18. Now that is what is called a White Paper. To many it will read rather like a company prospectus or puff preliminary. There we are told of clause 2, that it will enable a builder to calculate his increment value not by reference to the price obtained for his land and buildings, but by reference to the valuation of the Commissioners. If we apply this new rule to the Lumsden case, and take the £520 from the estimated market value of £658, we get £138 as the official occasional site value, which, deducting original value of £105, would leave balance of £33 upon which the increment value duty could alone be chargeable.

As to whether or not Clause 2 of the Bill will carry out the promise of the prospectus, that, as Mr. Lloyd George himself told the Conference in April, is always a doubtful matter. The Bill must be drafted in the usual technical legal jargon, which is in this case especially involved and artificial, as it has to fit into the extraordinary structure of the Great Budget. To put a patch of plain English into such a statute would be like building a brick porch to some Italianised stucco edifice of the worst Renaissance period. However, after being talked around and about in the Commons last Friday night, the clause was added to the Bill, and we can only hope that when it comes up again in the Act it will be found to work out as summarised in the Chancellor's memorandum. Neither he nor we, nor anyone else, can be at all certain of its legal effect in the muddle of different and varying definitions and site values with which our land-taxation is now so fatally encumbered. One practical point, however, we may note in this curious clause. As drawn, it gives the person chargeable with duty the right to "require" that the site value shall be the estimated value on the date of the occasion of sale, instead of that under the Finance Act. Unless this requirement is made, it follows that the method adopted will be according to the Lumsden decision, and so builders may find themselves in the old trap again. In fact, nowadays men of business must not only watch over every step of the law in its making, but they must also keenly scrutinise its after-administration. The precious result of the People's Budget is that no man with a shilling to lose can trust any taxing official at all, but must be advised, at every step of his own business, by surveyors and lawyers, if he would escape the traps artfully set in his path. Truly this is a pretty state of things! And when the loss to taxpayers is added to the enormous losses upon assessment and collection of these land taxes, the total deficiency, financially considered, must make a record of colossal failure hitherto unknown.

CAMBRIDGE UNIVERSITY SCHOOL OF FORESTRY.

The second progress report of the University of Cambridge School of Forestry, on Timber Research Work, is issued.

Since the date of the last report the time has been chiefly occupied in working out the results from the measurements and observations made last winter in the woods at Woburn and King's Lynn. The publication of these results has been delayed longer than was anticipated, which is due to difficulties experienced in analysing the samples of soil in consequence of the presence of iron. The analyses have now been completed, and a bulletin describing the Woburn sample plots is in the press, and will be published, it is hoped, some time in August.

In April last a letter was received from the Great Northern Railway Company asking the Forestry School to make certain investigations relating to the preservation of sleepers, and their subsequent immunity from fungal attack, and an experiment on a small scale, with some thirty sleepers, has been devised, and is now in progress. Mr. F. T. Brooks, Lecturer on Diseases of Trees at the Forestry School, is co-operating with us in this work.

A similar offer to test the value of different woods and preservative processes in street-paving was volunteered by Mr. Arthur E. Collins, city engineer for Norwich, with the consent and approval of the city council.

A further letter was received from the Royal Institute of British Architects indicating various points connected with timbers used both for carpentry and joinery in buildings, concerning which architects and builders feel the need for reliable information, and desire to see research work instituted. The most important of these points relate to the possibility of treating the timbers to preserve them from fungal and insect attacks, and yet without injuring their working qualities or rendering them less amenable to tools. These suggestions have been carefully considered, and efforts are being made to organise an experiment on a semi-commercial scale, embracing: 1. The relative mechanical and physical durability of British timbers suitable for outside work. 2. The comparative value of different timbers suitable for building-work — (a) for carpentry, (b) for joinery and decoration. 3. The comparative value of different methods of preservation— (a) in preventing shakes during seasoning; (b) in rendering the wood immune to fungal and insect attack; (c) the merits of the different processes according to the subsequent use to which the timber is applied— e.g., for outside or inside work, furniture- and cabinet-making, etc.; (d) the effect of the different processes on the working quality of the wood, on the tools employed, on paint, varnish, polish, glue, etc.; (e) the comparative merits of heartwood and sapwood, especially after treatment.

The school is endeavouring to obtain promises from estate-owners, agents, or foresters to furnish supplies of all the most important species of timber which are, or can be, grown in this country.

The school is approaching firms interested in different processes of preservation with a view to co-operation in the experiment, and, in the event of arrangements being made, equal proportions of the timber of each species will be treated by each different process. It will probably prove possible to apply some of the treatments at the Forestry School, or before despatch of the timber from the estate where it was felled. The sleepers and paving-blocks would then be laid in the railroad or street, their arrangement in the beds being supervised by the Forestry School. As far as possible, all specimens would be laid at the same time and in the same stretch of road, so that each would be subjected to the same conditions of climate and wear and tear. Each lot representing a species, and each process of preservation to which it has been subjected, would be so arranged in the railroad or street as to form a sequence. The building-timber specimens would be treated in various ways—some by being placed in a rotting-pit, others under conditions approximating to those found in ordinary buildings. The resistance to boring insects would also be tested, and other points to be investigated would relate to the effect of the treatment upon the working qualities and appearance of the wood and upon tools, the readiness of the wood to take paint, varnish, polish, and so forth.

Suggestions have been received from the principals of certain technical schools, as well as from some of the teachers, to the effect that the Forestry School would assist students of woodwork at these schools, if it could supply small specimens of different woods, accurately named, which would enable the students to study the structure and learn to identify various species. In consequence of this suggestion, a circular letter was sent to the secretary of every county education committee in twelve adjacent counties to ascertain whether, in the opinion of education authorities, the organisation of work on some such lines would benefit the cause of technical education. If it was thought likely to be of real value, the Forestry School would be prepared to organise a scheme, provided that the necessary funds for the purpose could be raised. From the replies received, it is evident that such work would be appreciated in several quarters, and efforts will accordingly be made to distribute specimens whenever the school is in a position to carry on such work.

CORROSION OF LEAD IN VARIOUS MEDIUMS.*

By Richard H. Gaines, Chemist, Board of Water Supply, New York.

The problem to determine what particular metal or combination of metals is best suited for a given purpose in engineering construction is sometimes one of great difficulty. A mistake in judgment may be at the expense of economy or durability, or may even lead to a disaster. The decision of the engineer, to be correct, must be based on a thorough knowledge of the physical properties of the metals under consideration, and this is generally gained by experience. In many constructions the choice of some of the materials is determined more by their durability under conditions of working than by their strength or other properties, a more expensive and weaker material being often chosen in preference to a cheaper and stronger one on account of superior resistance to corrosion. Examples of this are afforded by the frequent use of special bronzes in places where, except for their durability, the stronger and cheaper iron and steel would be preferable.

Incidental to a recent study to aid in determining whether it would be safe to substitute lead-lined steel pipe for bronze pipe where a material of great durability was required in portions of a water conduit, some experiments were made, and facts were collected from the experience of others bearing on the corrosion of lead. From the data obtained it was concluded that for the particular purpose in view the relative merits of bronze pipe and lead-lined steel pipe would hardly admit of comparison. Under whatever conditions lead withstands the action of water or acids, the bronzes are similarly unaffected, while under other conditions of service in which the bronzes are practically untouched by corrosive action, lead would be destroyed. Lead-lined steel pipes no doubt have their uses in the chemical manufacturers, and may also find extensive application for the conveyance of hard waters, or acid waters of a certain character in mines; but they cannot be recommended for use in connection with city water-supplies. Owing to its peculiar physical and chemical properties, lead affords a doubtful protection to iron or steel conduits from corrosion, and under some conditions might prove an absolute disadvantage, if not an actual menace, to the life of the pipe.

THE ACTION OF ALKALIES.

A peculiarity of lead is that it may be corroded either by alkalies or acids. Thus,

* From the "American Engineering Record."

lime mortar, lime putty, and lime water will attack lead; if the mortar is very alkaline, the effect will be greater. Proof of this was established by experiment as well as from observation of lead service-pipes in wet concrete. The following experiment was made to test the effect of an alkaline seepage water on lead: A weighed sample of lead was immersed for a period of eight days in seepage water that leaked through the concrete walls of a tunnel. The sample was taken out daily, washed, dried, and weighed, and the loss in weight noted. At the end of the test period it was found that progressive corrosive action had taken place, amounting to 0.132 per cent. in eight days, or at the rate of about 6 per cent. a year. Several examples of corrosion of lead service-pipes in wet concrete were observed, one of which will suffice to be mentioned here. In a bathing establishment in Brooklyn two lead pipes passed up through the concrete floor—one of the pipes was for hot water and the other for cold water. Owing to the free use of water on the floor the concrete was wet much of the time. Here the lead pipe for the conveyance of hot water was nearly destroyed by corrosion in five years, while the cold-water pipe was also deeply corroded. No evidence was found of leaking electric currents in the building to aggravate this action.

CORROSION IN CONCRETE.

A series of experiments was made to determine what loss lead suffers from corrosion as compared with steel and some other metals when embedded alone or in contact in very damp concrete. Specimens of the following metals were weighed and embedded singly and in contact in damp concrete and allowed to remain therein for two months. At the end of the test period the concrete blocks were broken up and the metals taken out, carefully cleaned, dried, and reweighed, the loss in weight representing the amount of corrosive action in each specimen.

SINGLE SPECIMENS.

Metal	Grams. Wt., Jan. 2, 1912.	Grams. Wt., Mar. 4, 1912	Grams Loss 2mo	Loss Grams sq.ft.
Manganese bronze	73.6655	73.6475	.0180	.32
Steel	39.1556	39.1481	.0075	.135
Lead	92.3806	91.7146	.6660	11.99
Copper	73.7630	73.7272	.0358	.64
Monel metal	62.9667	62.9646	.0021	.04
Metals in contact				
Steel	37.0380	37.0270	.0110	.20
Manganese bronze	70.6864	70.6700	.0164	.30
Steel	37.1746	38.1700	.0046	.08
Lead	90.0399	89.5408	.4991	9.08
Steel	38.8055	38.8031	.0014	.03
Copper	70.1913	70.1348	.0565	1.04
Steel	38.6396	38.6271	.0125	.23
Monel metal	60.1092	60.1074	.0018	.03
Steel	34.5625	34.4626	.0999	2.48
Lead	83.8596	83.5163	.3433	6.77
Copper	68.9752	68.9626	.0126	.31
Steel	34.8702	34.8026	.0676	1.68
Fibre				
Copper	64.1247	64.1122	.0125	.31

The resulting losses show but slight differences when in contact and alone, and, therefore, give no evidence of electrolytic action when the metals are coupled in concrete. With the exception of the lead, the corrosion loss of all the metals was small, that of the monel metal almost nil. The action of the lead confirms results obtained from actual experience, and shows that this metal may suffer very appreciably in an alkaline as well as acid medium. The corrosive action in this case was observed to be solvent in character, no protective coating being formed to hinder further change. Sir William Crooks once said that lead was the first cousin of thallium, which Lothar Meyer called the ornithorhyncus of the metals. This strange Jurassic animal possessed the body of mammal and the beak of a bird. Whether such a doubtful order of relationship in the family of elements is true or not, it is a fact that the chemical properties of lead are very peculiar, and they present some remarkable contrasts. While lead resists the action of sulphuric and hydrochloric acids in a far higher degree than iron, zinc, or tin, it is readily attacked by weak organic acids and is slowly dissolved even by pure water containing air.

With respect to corrosion the behaviour of lead is decidedly inconsistent. Notwithstanding that lead is very slightly acted on by some of the strong mineral acids in the cold, it is soon extensively corroded when exposed to the action of moist air in the presence of carbonic acid and eventually becomes converted into a mass of white lead. Since carbonic acid is produced abundantly in the decay of animal and vegetable matter, metallic lead is much affected when kept in contact with such substances in the presence of air, the oxygen of which unites with lead to form an oxide which then combines with carbonic acid. The oldest process for the manufacture of white lead depends upon the corrosion of lead with decaying organic matter in this manner. Bloxam, in his work, "Metals and Their Properties," makes this statement: "In breach-loading cartridges where grease is employed as a lubricator the bullets have sometimes become partly converted into white lead, and thus increased so much in bulk as to burst open the copper case of the cartridge and render it useless.

THE CORROSION OF LEAD IN THE SOIL.

The impression prevails among many engineers that in the absence of stray currents the corrosion of lead in the soil is negligible. This is not always true. The facts are that while in some soil lead is very slowly affected by corrosion, in others an active chemical change or deterioration of one kind or another takes place. For example, "the lead of old coffins is sometimes found to have become almost entirely converted into an earthy-looking mass of basic carbonate of lead." (Bloxam, "Properties of Metals.") The Russian engineer, A. N. Schensnovitsch, of Odessa, recently sent by his Government to New York to examine our pier and dock system, told the writer of an interesting case with which he was familiar of the destruction of lead water-pipes by corrosion that occurred in St. Petersburg during the "seventies," before the days of industrial electricity or other conditions that could give rise to electrolysis. According to this engineer, in 1860-61, or thereabouts, a quarter of the City of St. Petersburg was served with water by a system of lead mains. In from ten to fifteen years these pipes had become so pitted by corrosion as to necessitate extensive changes. The cause of the trouble was attributed at the time to some local peculiarity of the soil, the exact nature of which was never ascertained. Mr. Schensnovitsch stated that the whole system was subsequently replaced by cast-iron pipes, which had proved durable and satisfactory. The superintendent of the waterworks of a suburban town in the vicinity of New York City told the writer that several years ago he had occasion to renew a number of lead service-pipes, on account of deterioration from corrosion. As he expressed it, "The pipes were pretty well used up, presenting the appearance of just having passed through a severe attack of smallpox. The lead, moreover, had the appearance of having lost all its vitality. There was no indication of electrolysis playing any part here." In several cases reported by recent engineering periodicals accounts are given of the lead pipe in the earth "losing its vitality, becoming brittle and porous, rendering renewal necessary after a comparatively short period of service, or the substitution of some other kind of pipe." Cases are also reported where it was deemed necessary to lay the lead pipe in wooden troughs, to surround it with pitch, or to otherwise protect it from the corrosive influence of the soil.

THE CORROSION OF LEAD IN WATER.

So far as ordinary atmospheric corrosion is concerned, lead is one of the most durable of the common metals, undergoing no change in dry air or in water perfectly free from air. It is, moreover, only slightly affected by hard waters or dilute solutions of either hydrochloric or sulphuric acids. The latter acids quickly form coatings on the surface of the metal, which protect it from further action. Lead, however, is readily dissolved by water high in nitrates and by dilute nitric acid. It is also more or less rapidly corroded by weak organic acids in contact with moist air. Certain waters which actively corrode lead are those with a slightly acid reaction from peaty swamps. There are certain microbes associated with peat which are acid producing, and which impart acidity to waters which have been in contact with peat. Soft waters are particularly unsuited for conveyance in lead pipes, and in such waters containing nitrates derived from decaying vegetation the amount of lead dissolved is large. Every plumber knows that pure soft water will attack, and sometimes destroy, lead pipes. For this reason it has often been found necessary to line lead pipes with tin. When lead pipes are acted on by water the corrosion is [illegible] portions being hardly attacked, while in other parts holes may be eaten through. [illegible] does not [illegible] be due to any [illegible] in the metal, but merely to accidental circumstances. One authority quotes various experiments to show that lead water-pipes should be kept full of water all the time to prevent deterioration.

The corrosion of lead by pure aerated water takes place as follows: Lead [illegible] Oxygen (O) = Lead Oxide (PbO). PbO + Water (H_2O) = Lead Hydroxide ($PbO.H_2$). If exposed to the action of [illegible] containing the normal quantity of dissolved oxygen, the lead is oxidised to hydroxide, which dissolves. After a time this is converted, by the action of the atmospheric carbon dioxide, in the basic carbonate of lead, $2PbCo_3$ and $Pb(HO)_2$. Lead hydroxide is then again formed, and thus the corrosive action may be continued. Potable waters always contain a certain amount of salts in solution, and the corrosive action depends to some extent upon the nature and quantity of the salts present. The waters which act least on lead are those containing carbonate of lime, phosphate of lime, and, in a less degree, sulphate of lime. The waters which are most liable to act upon lead are those obtained from upland gathering grounds, waters which are soft and usually of remarkable purity. When highly oxygenated the latter form no protective coating against solvent action. On account of the quantity that may be dissolved lead has always been considered a more or less dangerous metal in connection with water-supply for drinking purposes. Acting as a cumulative poison, its salts produce serious results if taken into the system, even in very minute quantities, for any length of time. Although indirectly related to the subject of corrosion, the experience of certain of the towns of Lancashire and Yorkshire in England should never be forgotten where the use of lead water-pipes is under consideration. In these towns lead poisoning was prevalent for a considerable period before its real nature was recognised and its cause discovered. Incidentally it may be said that the compounds of lead are poisonous practically in proportion to their solubility. Thus the metal [illegible] and its sulphide, being incapable of absorption as such into the system, are practically innocuous, while the soluble salts—nitrate, chloride, and acetate—are active irritant poisons. The oxide, sulphate, and carbonate are much less active, but continued exposure to lead fumes or to any atmosphere in which these substances are present in the form of dust bring on first "lead colic" and later, if exposure to the dust or fume is continued, a more chronic form of poisoning called "lead p[illegible]" accompanied by great emaciation.

THE CORROSION OF LEAD BY ELECTROLYSIS.

Instances are commonly reported of the electrolysis of lead pipes. In some of these cases, such as have occurred at St. Paul, Omaha, and Paterson, N.J., all the phenomena of electrolysis were no doubt present. In others damage from stray currents has by no means been proved, while the observed phenomena rather suggest ordinary chemical corrosion. In several cases of lead-pipe deterioration, called electrolysis, it was found that molecular changes of another character had taken place in the metal, similar to what Moller and [illegible] (Proc. A.Inst.C.E.) described as decay. The electrolysis of either lead or lead-lined steel pipe, however, is a very real trouble, and the interest attaching to it here is the ease with which it may occur and the rapidity with which serious damage may be done. A [illegible]

years ago the Westinghouse Electric Company showed by experiments at Pittsburgh how readily buried lead pipe could be corroded by electrolysis. This company also made a series of tests in different soils to compare the corrosive action of stray currents on embedded lead and steel pipes. It was demonstrated that in some soils lead pipe was even more rapidly destroyed by electrolysis than steel. This accords with actual experience reported from several cities. At St. Paul, where considerable damage to lead water-pipe occurred, presumably from electrolysis due to escaping current from electric railway lines, cast-iron pipe in the path of the same currents is said to have been little affected by corrosion. In New York City an engineer connected with the water department told the writer that in the few instances in which there had been any trouble from electrolysis of water-pipe in Manhattan, "the lead joints were the first to go."

REINFORCED-CONCRETE COLUMNS.*

By Peter Gillespie,
Associate Professor of Applied Mechanics, University of Toronto.

The growth in the use of reinforced concrete constitutes the greatest epoch in engineering of the present generation. The comparative cheapness of this material, its fireproofness, its adaptability, and the general satisfaction which has attended its use where the design has been careful and the work reliable, have given it an increasing popularity. While it occupies a narrow, but a growing, field in the realm of æsthetics, its applications in constructive art per se are legion. Of it, beams, slabs, and columns, and tension members even, have been constructed. These elements have been fabricated into warehouses, factories, and dwellings, dams and retaining-walls, standpipes, pressure-mains and sewers, viaducts and bridges. So rapid, indeed, has been the progress that none but the experts have been able to keep pace with its advancement.

The concrete column has not, in my opinion, been accorded, in building regulations, the consideration it deserves. The demands of ultra-conservative building codes have been such that its use has been all but prohibited, because of the excessive size and cost required, notwithstanding the fact that actual failures of structures due to collapse of concrete columns have been exceedingly infrequent. It seemed likely, however, after a number of preliminary tests had been made and analysed, that the rich mixture concrete promised economics not afforded by the leaner grades, and, in consequence, the columns to which the following remarks especially apply were a series made of a 1:1 mixture, the ingredients being equal volumes of cement and crushed stone of size ¾in. and smaller. Some of these were plain, some were reinforced with longitudinal steel, and some with welded steel hoops. They were tested at the age of six months.

Like all other materials of construction, concrete possesses, to a greater or less extent, the power of recovering, after stressing, its original size and shape. In this respect it bears some resemblance to steel; but, unlike the latter, its elastic properties are very variable. Its rigidity may vary from one-fourth that of steel to one-fortieth, while its strength in compression may lie between one-twelfth and one one-hundred-and-twentieth of that of the metal. Ordinary 1-2-4 concrete has a strength in compression of about 2,000lb. per square inch, and a modulus of elasticity of about 2,000,000lb. per square inch, so that it will be apparent that its strength, relative to steel, is one to thirty, while its rigidity or stiffness compared with the metal is one to fifteen. In consequence, in composite members, where the two materials compress together, the stress in the steel will be fifteen times as great as that in the concrete, and the factor of safety of the former will be double of that of the latter. This will indicate one essential difficulty in employing longitudinal steel economically in combination with concrete in columns. Clearly, the ideal condition will occur when the relative strength ratios of the two materials are equal to their stiffness ratios. The extent to which this desideratum has been realised in the rich mixture column will be presently seen. Another circumstance is that at current prices of ordinary concrete and steel, a load in compression can be sustained by the former at about half the cost incurred when the latter is employed.

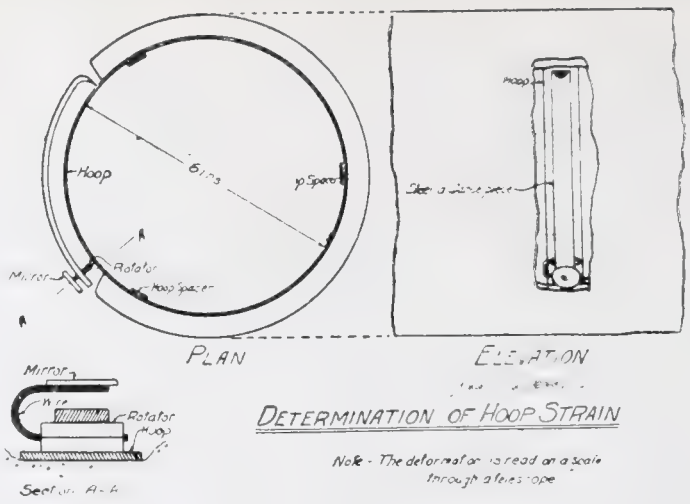


Fig 1

The actual crushing strength developed at the age stated above was, in the average, well over 5,000lb. per square inch, as may be seen from the following table. This, in my opinion, should warrant a working stress in compression of 1,250lb. per square inch. This will insure as wide a margin of safety as that afforded when the ordinary grade of concrete is stressed to the extent permitted by common specifications.

Crushing Tests on Rich Concrete.

Specimen.	Crushing Strength.
A	4,900lb. per sq.in.
B	5,975 ,, ,,
C	5,510 ,, ,,
D	6,160 ,, ,,
E	4,120 ,, ,,
F	5,480 ,, ,,

Columns of the aforementioned mixture, as stated above, were made and tested, and accurate observations as to shortening under load were made. One of the most striking features, in all cases, was the remarkable manner in which the proportionality of stress to deformation obtained up to, and exceeding in many cases, stresses of 2,000lb. per square inch. Anyone who has studied the records of tests made on columns of the ordinary grade of concrete will recall how, as the stresses increase, the deformations increase also, but at a much greater rate, so that perfect recovery, except for low stresses, is impossible to attain. The following record gives the co-existent stresses in steel and concrete in a few instances of longitudinally-reinforced columns of the present series. It will be observed that the factors of safety for concrete and steel are four and six, approximately, assuming ultimate strengths of the two materials as 5,000lb. and 60,000lb. per square inch respectively.

Simultaneous Stresses in Concrete and Longitudinal

Designation	Stress in concrete	Stress in steel.
M	1,250	9,000
H	1,250	10,300
N	1,250	10,040
R	1,250	10,100
O	1,250	11,500
P	1,250	10,300
Average	1,250	10,200

This is a decided improvement over what would have resulted had the ordinary mixture been employed. In other words, through the utilisation of the richer mixture, it is possible to secure a working stress for steel one-third higher than the usual one in longitudinally-reinforced columns. The magnitude of the set after stressing was also very much less than when the poorer mixture was employed.

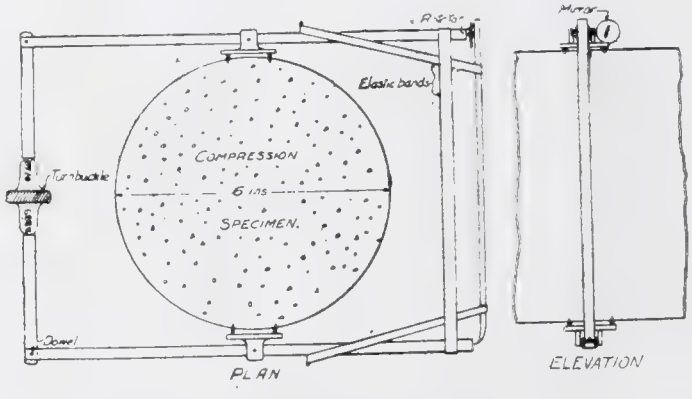


Fig. 2

The function of hoops in columns is to resist the lateral expansion or dilation which occurs when a load is applied. If there were no lateral dilation, manifestly there would be no necessity for hoops. It is, probably, not possible to correctly express the relation between the hoop stress and the axial compressive stress in a formula. The physicist, however, on the assumption that the core of concrete in the column behaves somewhat as a fluid would under similar circumstances, has evolved an equation which purports to give this relation. The equation—

$$f = \frac{2nq}{2 + p(n-1)q}$$

in which f is the tensile stress in the hoops,

* From the Journal of the Regina Engineering Society.

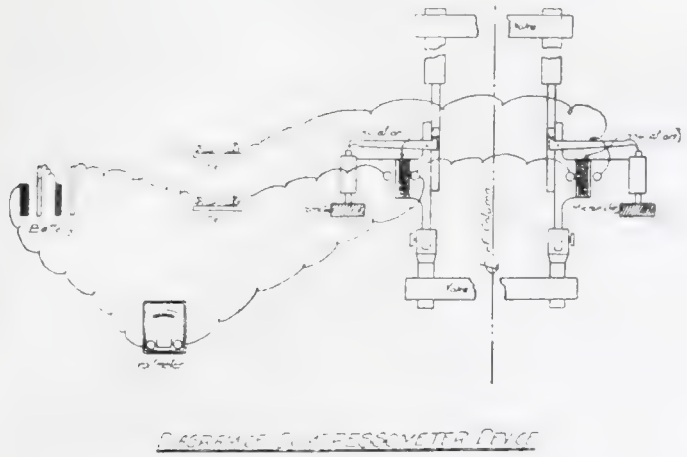


Fig. 3

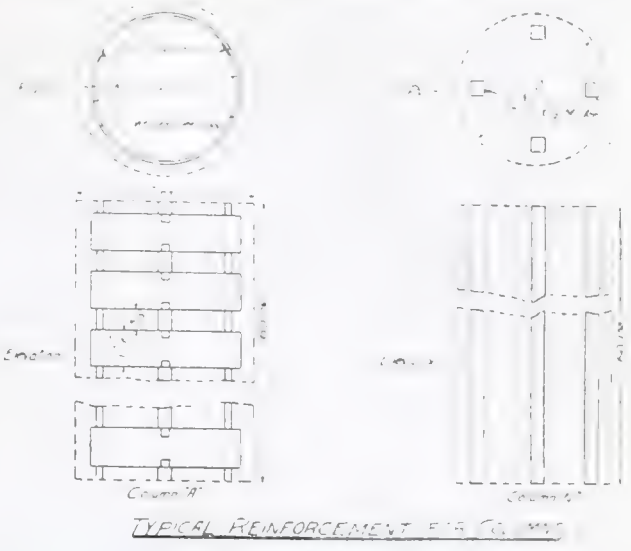


Fig. 4

c is the axial compressive stress in concrete, n is the ratio of rigidity of steel to concrete, ... is Poisson's ratio (or the ratio of diametral strain to longitudinal strain), and p is the ratio of steel to concrete in the section—gives the relation... In ... and q ..., as was found experimental for this material, the equation becomes :—

$$\frac{f}{c} = \frac{n}{1 + \frac{q}{2} p}$$

It is thus seen that, for given materials, f/c varies only with the quantity of steel present, and, since p is generally small with respect to the constants involved, the variation in f/c is between narrow limits for most cases that are likely to occur. It will be seen that the ratio is in the neighbourhood of 2, which means that, theoretically, the tensile stress in the hoop (for ordinary values of p) is only twice the axial compressive stress in the concrete. The experimental determinations were, in the main, confirmatory of this, as well be seen from the following :—

Comparison Between Experimental and Theoretical Values of f/c.

Column.	n	q	f/c (actual).	f/c (theoretical).
A	1,500	2,600	1·73	1·88
B ...	1,500	3,700	2·46	1·88
C ..	1,500	2,700	1·80	2·04
D	1,500	2,200	1·46	2·03
E ...	1,500	2,600	1·73	2·03
Average			1·84	1·97

Another feature of interest is the occurrence of what may be designated the "residual stress" in the hoops. The loading in all cases was repeated several times. After each release, it was observed that the steel had not quite recovered its former shape, as was evidenced by the incomplete backward movement of the mirrors. Moreover, this residual stress appeared to be cumulative. For instance, in one case the amount of residual tension in the bottom hoop of one column, after the first application of load had been released, was found to be 400lb. per square inch, while after the second loading it was found to be 1,800lb. per square inch. Indeed, it would seem as though the residual stress were some function of the next preceding maximum stress. It must be remembered, too, that, after a resetting of the instruments, any residual stress in the metal would not be apparent, and that whatever residual stress was observed after release or load would have to be regarded solely as an increment to whatever existed prior to the last previous stressing.

The significance of the phenomenon of residual stress will be apparent. If each successive loading augments the hoop stress left from the last preceding loading, clearly a time must come when the metal will be stressed to the point of rupture. This was tested experimentally in one instance, and the result confirmed the belief that such is the case. A portion of column E, which had previously sustained a load of 247,000lb. (diameter 7in.), was placed in the testing machine after the ends had been carefully ground to a true plane. After four repetitions of the relatively moderate load, 180,000lb., the second hoop from the top burst, and on the fifth application the upper one severed also.

Fig. 1 shows the manner in which the intensity of stress in the welded steel hoops is measured. It will be seen that a swelling of the concrete of the column, and the consequent dilation of the hoop which encloses it, will cause the mirror to rotate. The extent of the movement is caught on a graduated scale, and from this the stress is computed. In Fig. 2 the method of measuring Poisson's ratio is shown. Again, the magnitude of the diametral dilation is read on a scale through the rotation of the mirror. The extent of the axial shortening is simultaneously observed by the mechanism shown in Fig. 3. The micrometer screw and electric contact are here employed. Fig. 4 shows, in plan and elevation, typical methods of reinforcing concrete columns.

Tests made by Professor Talbot in 1907 on hooped concrete columns, using a 1-2-4 mixture, showed that the ultimate strength was increased about 66lb. per square inch for each per cent. of hooping employed. Similarly, tests made at the Watertown Arsenal in 1906 show that 1 per cent. of metal in the form of hoops increased the strength of the member to the extent of 1,020lb. per square inch. Professor Withey, in 1909, reported that for each per cent. of metal employed in the form of spiral reinforcing, the increase in ultimate strength, on an average, was 1,320lb. per square inch for 1-2-4 concrete. From the above, and from other tests which might be cited, it would seem as though an additional ultimate strength of 1,000lb. per square inch for each per cent. of hooping present might be figured on.

Some years ago I made a few comparisons between the costs of columns of various materials capable of sustaining a specified load, taking the market prices of the place and time as a basis. While these prices cannot possibly apply to conditions to-day in the Canadian West, yet the conclusions would not be seriously different from what the investigation then led to, and so I propose to repeat them here. The materials laid down were assumed to cost as follows :—

Cement, per barrel	1·50dol.
Aggregate, per cubic yard	2·00
Sand, per cubic yard	1·00
Plain, reinforcing, per pound	3c.
Hooping, fabricated, per pound	5c.

For a 1-1 cement-and-rock mixture, the cost per cubic yard will be—

Cement	8·10dol.
Rock	1·58
Labour	1.00
Plain steel, 3 per cent.	2·03
Total	12.71dol.

Since the metal is added chiefly as emergency material, it will not be figured in the ultimate strength, which will be taken at 5,000lb. per square inch. A 1-2-4 concrete (the ultimate strength of which, plain, may be assumed at 2,000lb. per



A group of Columns after Testing.

square inch) will be rendered equivalent in strength to the 1-1 mixture by the use of 3 per cent. of hooping metal. The cost per cubic yard will then be

Cement	2.27dol.
Rock	2.00
Sand	.50
Steel hoops	20.25
Labour	1.00
Total	26.28dol.

In addition to the greater cost, a column of this mixture will not possess the stiffness, and probably not the margin of safety against bending stresses, which are found in the cheaper column.

In order to compare the areas of three different types of column, and their cost per foot of length, it will be assumed that a ten-story building, with dead and live floor-loads at 200lb. per square foot, and a roof-load of 100lb. per square foot, is to be constructed. Assume also square floor-bays of 15ft. on a side.

It will be seen that the load sustained by a column on the ground floor will be 427,500lb. This may be carried (a) by a steel column, (b) by a column of the poorer grade of concrete, (c) by a column of the richer mixture.

A reference of the Carnegie Handbook, p. 141, shows that a steel column consisting of two 10in. channels and two ⅞in. plates will be adequate. This column weighs 121lb. per running foot. The cost per foot of height will be

Steel at 5c. per pound	6.05dol.
Fireproofing, 2in. thick	.78
Total	6.83dol.

A 1-2-4 concrete column with 1 per cent. of longitudinal metal will be figured at 450lb. per square inch for the concrete, and $450 \times 15 = 6{,}750$lb. per square inch for the steel. The average stress will, therefore, be $450\,(1 + .14) = 513$lb. per square inch. The gross area required will be $427{,}500 \div 513 = 833$ square inches.

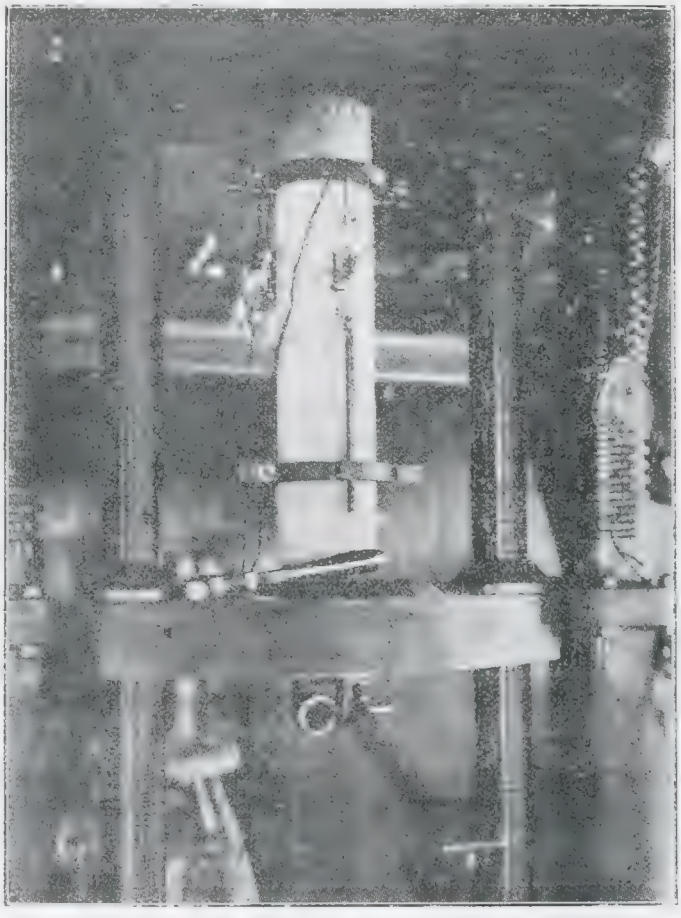
Hence a column 29in. square will be adequate. Allowing 1in. additional for fireproofing, there results a column 30in. square, the cost of which, per foot of height, would be—

Concrete, including 1 per cent. steel and labour	2.55dol.
Forms	.46
Total	3.01dol.

The third method employs a 1-1 mixture, the working stress on which will be taken as 1,250lb. per square inch. The area required will be $427{,}500 \div 1{,}250 = 342$ square inches. This is the area of a square of 18.5in. to the side. Allowing 1½in. for fireproofing, a column 20in. square is obtained, the cost of which per foot of height, with one-half of 1 per cent. of longitudinal steel, would be

Concrete, including ½ per cent. of steel and labour	1.30dol.
Forms	.32
Total	1.62dol.

The areas of the cross-sections in the three cases are: (a) 1.8 square feet, (b) 6.3 square feet, (c) 2.8 square feet.



Arrangement of Testing Apparatus.

It is thus seen that the difference between the smallest cross-section and the largest is 4.5 square feet—an item of considerable importance in districts where the rental of floor-space is high. On the other hand, the difference in cross-sectional area between the most expensive method of carrying the load and the cheapest is 1 square foot. Having regard, then, to the fact that the rich-mixture column costs only one-fourth as much as the steel structure, there would seem to be a good deal to be said in favour of the stronger mixture.

INFERENCES.

Your consideration is invited to the following inferences to which the data at hand seem to lead:—

(1) For a 1-1 mixture, a working stress of 1,250lb. per square inch seems to be justified.

(2) The rich mixture is more uniform in its elastic properties than is the lean mixture, and for proportionate stresses the permanent stress is likely to be much less.

(3) The use of steel longitudinal for reinforcing columns gives an increase in strength very much less than the proportionate increase in cost.

(4) The porosity at the top of the column is likely to be a source of localised weakness.

(5) The employment of a rich mixture in columns permits of the more economic stressing of the steel longitudinals.

(6) The stress in steel hoops appears to be approximately twice the axial compressive stress in the concrete core.

(7) An approximate increase in ultimate strength of 1,000lb. per square inch for each per cent. of metal employed may be figured on for hooped columns in excess of that existing in plain columns of the same mixture and age.

(8) Owing to the pseudo-plastic condition of the concrete within the hoops, the reinforcement does not completely recover its unstressed conditions after the removal of load. The residual stress resulting is probably augmented by each successive load, and finally rupture of the hoops occurs.

REINFORCED-CONCRETE WALL-FOOTINGS AND COLUMN FOOTINGS.

Bulletin No. 67 of the University of Illinois, by Arthur N. Talbot, published in London by Messrs. Chapman and Hall, Ltd., price 50 cents, comprises a most valuable series of tests, which will be read and studied with profit and interest.

Footings form an important element in the design of masonry structures. The two forms of footing most commonly used may be named the wall footing and the column footing, the former projecting laterally on the two sides of a longitudinal wall, and the latter extending in four directions from the base of a column or pedestal block. It is usually assumed in the design of foundations that the earth conditions are such as to make the upward pressure on the footing uniform over its surface. Wide differences exist in methods of designing, due to differences in the assumptions made with reference to the structural action of the footing. It is not strange that these differences exist, since little or no experimental data are available which apply directly to the conditions of footings. Relatively short and deep beams and slabs under heavy uniform loads, with the supporting pressure largely concentrated at the centre of the structure, may not be expected to give the same results as have been obtained in tests with the more slender beams and slabs and with the methods of support and of application of load which have generally been used in tests.

It may seem strange, considering the wide variations in practice, that few failures of footings have been publicly reported. It must be remembered, however, that these structures are out of sight, buried deep in the earth, without opportunity for inspection. A failure in a footing may effect a change in the distribution of the load over the bed of the footing, resulting only in increased settlement. Possibly many instances of undue settlement of buildings may be due to failure in the footings. Possibly, in other cases, the earth at the centre of the footing may be able to take the increased load under the conditions of side restraint developed. It is also probable that many footings have been made unduly strong.

We append the summary of the conclusions arrived at; but the whole Bulletin, which covers some 120 pages, should be obtained. It is most informative.

WALL FOOTINGS.

The tests of wall footings cover a variety of reinforcement. The method used to secure a distributed upward pressure introduced difficulties in testing. It also made it difficult to determine the load which should be taken as the critical load, and the loads which have been so specified may not always be the true critical load. The use of the bed of springs on the whole proved very satisfactory, and is probably the best available arrangement for tests of the number and range used. The tests bring out phenomena which might not be apparent from analytical considerations alone, or which might not be accepted without physical verification. Variations in concrete add to the complications encountered in

analysing such a series of tests. The tables and diagrams and discussions present information and data of the tests in a detailed way.

1. Wall footings under load follow the general laws of flexure. The section for maximum moment, the critical section for calculation of vertical shearing stress for use in judging of resistance to diagonal tension, and the method of calculating bond stress, received experimental consideration.

2. The values of the modulus of rupture found in the unreinforced concrete footings are not far from the values of modulus of rupture obtained in simple beam tests, such as the control beams. Increasing the richness of the mixture gives the added strength which tests of simple beams would lead us to expect. Variations in the tensile strength of concrete are to be expected, and considerable variation was found in the moduli of rupture of the test pieces, the variation being augmented by differences incident to the method of testing. The tests on footings of different lengths, undertaken to determine whether the section at the face of the wall should be used for the critical section, do not disclose any marked differences in modulus of rupture.

3. The results of the tests and the measurements of deformation of the reinforcement indicate that the critical section may be considered to be at the face of the wall, and that the calculated tensile stress in the bars at this section is probably somewhat above the maximum tensile stress developed. Whether the maximum compressive stress may properly be calculated in the same way was not determined. It may be expected that high compressive stresses exist at the intersection of wall and projection. Indications of high compression and of incipient compression failure were found at the intersection of the wall and footing at loads above the critical loads. Test pieces in which the wall was poured after the footing had taken its set gave results which indicate that a section at the face of wall may properly be used in calculations of moments even when the wall is to be poured separately from the footing.

4. The calculations for bond stress, based upon the total external vertical shear at the section at the face of the wall and calculated by equation (17), evidently give stresses higher than the existing stresses. This is shown by the fact that the values, calculated in this way, are higher than those found in pull-out tests and beam tests. A study of the analytical conditions existing at this section tends to confirm the statement. However, as bond resistance is so important a strength element in a short cantilever beam, this method of calculation, and the use of the working value of bond stress ordinarily assumed in design, seems only reasonably conservative, and may be recommended for general practice. Attention may properly be called to the importance of making calculation of bond stress in wall footings and other beams in which the length is short relatively to the depth. The advantage of using relatively small bars in such cases is also apparent. Anchorage of bars by bending upward and back in a long curve, or by looping the bar in a horizontal plane, was found to add materially to bond resistance.

5. The tests indicate that the vertical shearing stresses developed at the face of the wall, calculated by the usual method, are higher than the vertical shearing stress which is found to exist in simple beams with concentrated loading when diagonal tension failures are developed. It was found that diagonal tension failures start at a point some distance away from the section at the face of the wall. This observation and certain analytical considerations, such as the probable greater proportion of shear taken in the compression area at sections near the face of the wall, show that, in calculating the vertical shearing stress which shall be used as a basis for judging the resistance to diagonal tension, a section at a distance d from the face of the wall should be used. The tests and the discussion indicate that a section d distant from the face of the wall (d being the distance from centre of reinforcing bar to top of footing) may properly be used as the critical section for calculating the vertical shearing stress for this purpose, and that at this section the ordinarily accepted working stress may properly be used for calculating resistance to diagonal tension failure.

6. The bending up of bars at several points along the length of the projection gave added resistance against diagonal tension failure. Vertical stirrups also added to the resistance against diagonal tension failure, but were not especially effective. Neither method of web reinforcement would be very convenient in construction. Generally speaking, it will be best to try to design the footing so that the vertical shearing stresses will be within the limit of the working stress permitted in beams without web reinforcement, and thus avoid the use of web reinforcement. In large important footings, when diagonal tension is a critical element, it would seem that some kind of unit frame with well-formed web reinforcement would be preferable to placing stirrups or to bending up bars at the necessary intervals. In stepped and sloping footings attention should be called to the larger diagonal tension and bond stresses developed. The increase in these stresses over those found in footings of uniform depth may be sufficient to decide against the use of stepped and sloping footings.

7. The footings having I-beams embedded in the concrete carried high loads, perhaps corresponding to the yield-point tensile strength of the lower flange of the I-beams, and more than double what would be carried by naked I-beams. The weight of the I-beams, of course, was greater than that of the reinforcing bars used in the reinforced-concrete wall footings.

COLUMN FOOTINGS.

The requirement of uniform load and the presence of double-curved flexure complicate an investigation of column footings. In this investigation methods of testing were developed. As these are presumably the first tests on column footings, the phenomena of the tests and data of their action will be of interest to designers, especially in the directions in which tests have brought out weaknesses not always recognised and usually not guarded against. The results contribute data toward the settlement of methods of calculating of both the bending moment and the resisting moment for square footings, and the principles may with care be extended to other forms. The results may not easily be summarised, but the following statements are intended to cover the principal matters brought out in the tests:—

1. A square column footing under load may be expected to take a bowl-shaped form. In slabs subject to bending in two directions, the stress in a fibre cannot differ from that in an adjoining fibre at the same level without setting up longitudinal shear; and as there is considerable resistance to variation from equality of stress in adjoining fibres, it may be expected that in stiff thick pieces (as are footings of ordinary design, where the thickness is large in comparison with the length of the projection) the deformations and consequent stresses will be distributed over the width of a cross section, and that considerable stress will be developed even in the fibres at the edge of the footing.

2. For footings having projections of ordinary dimensions, the critical section for the bending moment for one direction (which in two-way reinforced-concrete footings is to be resisted by one set of bars) may be taken to be at a vertical section passing through the face of the pier. In calculating this moment all the upward load of the rectangle lying between a face of the pier and the edge of the footing is considered to act at a centre of pressure located at a point half-way out from the pier, and half of the upward load on the two corner squares is considered to act at a centre of pressure located at a point six-tenths of the width of the projection from the given section. By equating this bending moment and the resisting moment which is available at the given section, the maximum tensile stress in the concrete or in the reinforcing bars may be calculated.

3. As is usually the case when plain concrete is used in flexure, the unreinforced footings show considerable variation in results. The variations were such as not to permit a method of determining the effective width of resisting section to be established or to obtain a formula for resisting moment. Based upon the full section of the footing, the moduli of rupture obtained were considerably less than the moduli of rupture of control beams made with the same concrete.

4. In reinforced-concrete column footings, resistance to nonuniformity of stress in adjoining bars will be given by bond and by longitudinal shear in the concrete, and the amount of variation from uniformity of stress in the various bars will depend upon the spacing of the bars as well as upon the relative dimensions of the footing. With two-way reinforcement evenly spaced over the footing it seems that the tensile stress is approximately the same in bars lying within a space somewhat greater than the width of the pier, and that there is also considerable stress in the bars which lie near the edges of the footing. For intermediate bar stresses intermediate in amount will be developed. For footings having two-way reinforcement spaced uniformly over the footing, the method proposed for determining the maximum tensile stress in the reinforcing bars, is to use in the calculation of resisting moment at a section at the face of the pier the area of all the bars which lie within a width of footing equal to the width of pier plus twice the thickness of footing, plus half the remaining distance on each side to the edge of the footing. This method gives results in keeping with the results of tests. When the spacing through the middle of the width of the footing is closer, or even when the bars are concentrated in the middle portion, the same method may be applied without serious error. Enough reinforcement should be placed in the outer portion to prevent the concentration of tension cracks in the concrete and to provide for other distribution stresses.

5. The method proposed for calculating maximum bond stress in column footings having two-way reinforcement evenly spaced, or spaced as noted in the preceding paragraph, is to use the ordinary bond stress formula, and to consider the circumference of all the bars which were used in the calculation of tensile stress, and to take for the external shear that amount of upward pressure or load which was used in the calculation of the bending moment at the given section. An important conclusion of the tests is that bond resistance is one of the most important features of strength of column footings, and probably much more important than has been appreciated by the average designer. The calculations of bond stress in footings of ordinary dimensions where large reinforcing bars are used show that the bond stress may be the governing element of strength. The tests show that in multiple-way reinforcement a special phenomenon affects the problem, and that lower bond resistance may be found in footings than in beams. Longitudinal cracks form under and along the reinforcing bar, due to the stretch in the reinforcing bars which extend in another direction, and these cracks act to reduce the bond resistance. The development of these cracks along the reinforcing bars must be expected in service under high tensile stresses, and low working bond stresses should be selected. An advantage will be found in placing under the bars a thickness of concrete of two inches, or better, three inches, for footings of the size ordinarily used in buildings. Difficulty may be found in providing the necessary bond resistance, and this points to an advantage in the use of bars of small size, even if they must be closely spaced. Generally speaking, bars of $\frac{3}{4}$in. size or smaller will be found to serve the purpose of footings of usual dimensions. The use of large bars, because of ease in placing, leads to the construction of footings which are insecure in bond resistance. In the tests the column footings which were reinforced with deformed bars developed high bond resistance. Curving the bar upward and backward at the end increased the bond resistance; but this form is awkward in construction. Reinforcement formed by bending long bars in a series of horizontal loops covering the whole footing, gave a footing with high bond resistance.

6. As a means of measuring resistance to [illegible] of beams the vertical shearing

stress can be calculated by using the vertical sections formed upon the square which lies at a distance from the face of the pier equal to the depth of the footing was used. This calculation gives values of the shearing stress, for the footings which failed by diagonal tension, which agree fairly closely with the values which have obtained in tests of simple beams. The formula used in this calculation is $v = V/b\,j\,d$, where V is the total vertical shear at this section taken to be equal to the upward pressure on the area of the footing outside of the section considered, b is the total distance around the four sides of the section, and $j\,d$ is the distance from the centre of reinforcing bars to the centre of the compressive stresses. This stress is somewhat larger than the average vertical shear over the section which is sometimes used. The working stress now frequently specified for this purpose in the design of beams, 40lb. per square inch, for 1-2-4 concrete, may be applied to the design of footings. The punching shear may be calculated for the vertical sections which enclose the pier footing, although it may be expected that shear failure may not be produced exactly on this section. The value now generally accepted for punching shear, 120lb. per square inch for 1-2-4 concrete, may be used for the working stress in this case.

7. No failures of concrete in compression were observed, and none would be expected with the low percentages of reinforcement used. The compressive stresses in the pier of the footing were in some cases very high, and in a few instances the pier failed and was replaced by a cube of concrete. In frequent cases there were signs of distress near the intersection of pier and footing where there is an abrupt change in direction of surfaces, and where the combined stresses are very high.

8. In stepped footings the abrupt change in the value of the arm of the resisting moment at the point where the depth of footing changes may be expected to produce a correspondingly abrupt increase of stress in the reinforcing bars. Where the step is large in comparison with the projection, the bond stress must become abnormally large. It is evident that the distribution of bond stress is quite different from that in a footing of uniform thickness. The sloped footing also gives a distribution of stress which is different from that in a footing of uniform thickness. However, for footings of uniform thickness the bond stress is a maximum at the section at the face of the pier; in a sloped footing the bond stress at the section at the face of the pier would be less accordingly than in a footing of uniform thickness, and a moderate slope may be found to distribute the bond stress more uniformly throughout the length of the bar. This is not of advantage if the full embedment of the bar is effective in resisting any pull due to bond.

9. The use of short bars placed with their ends staggered increases the tendency to fail by bond and cannot be considered as acceptable practice in footings of ordinary proportions. In footings in which the projection is short in comparison with the depth the objection is very great.

10. Footings having reinforcement placed in the direction of the diagonals as well as parallel to the sides (four-way reinforcement) gave good tests. The significance of the results is so obscured by the variety of manner of failure (bond, diagonal tension, and perhaps tension) and by variations in the quality of the concrete, that a comparison with two-way reinforcement on the basis of loads carried would not be of value. This type of distribution of reinforcement should be included in further tests. Measurements of deformation in the bars are needed to determine the division of stress among the four sets of bars.

The tests of wall footings and column footings leave uncertainty in some parts of the problem, and there are gaps in other parts. The recent development of the portable extensometer, or strain-gauge, and the skill and experience which have been gained in its use in recent tests, have opened opportunities for obtaining information on the stresses developed in such test pieces which were not available when the series of tests was undertaken. It is suggested that some of the remaining unsolved problems may most readily be attacked by measurement of deformations in the steel and concrete, and that further investigation may best be carried on by constructing a form of apparatus which will permit such measurements to be taken under the conditions of uniform loading.

SCHOOL OF ARCHITECTURE, UNIVERSITY OF CAMBRIDGE.

In June, 1908, the Senate of the University established an Examination in Architecture, and in 1912 a Board of Architectural Studies was created to take charge of it and of instruction in architecture. In June, 1913, a revised schedule of the examination was passed by the Senate, and will come into force in June, 1914. The examination in architectural studies is open to students of the University for completing their degree. "A candidate who has obtained honours in a part of any Tripos Examination or in one section of the Mediæval and Modern Languages Tripos shall be deemed to be qualified for a degree of Bachelor of Arts if he has passed the examination in Architectural Studies and has kept the number of terms required for a degree." Students can, therefore, take up the subject in their second or third year, after having passed one part of any Tripos, and give one or two years to the study of architecture, either with the view to the professional exercise of that art, or otherwise, and on passing the examination in Architectural Studies they will obtain the B.A. degree. In this manner the studies of the University in mathematics, classics, history, natural and mechanical sciences, theology, modern languages, and other Tripos subjects can be combined with training in architecture, to the advantage both of professional and general culture. The Council of the Royal Institute of British Architects will accept the examination as exempting from certain subjects of their Intermediate Examination.

PART I.

The first part of the examination deals firstly with the scientific principles in construction, and, secondly, with the theory and practice of Architectural Drawing, Elementary Design, and Architectural Surveying. The subjects of examination are five in number: (1) Practical Mathematics; (2) Elementary Applied Mechanics; (3) Strength of Materials; (4) Construction and Elementary Design; (5) Architectural Drawing and Surveying.

PART II.

The subjects of examination are five in number:- (1) Outlines of the General History of Art, including Architecture; (2) Architecture and the Allied Arts: (a) Classical, (b) Mediæval, (c) Oriental. (No candidate is allowed to take the questions on more than one of these three periods.) (3) Subjects for an Essay relating to the period chosen by the candidate in (2); (4) Renaissance and Modern Architecture; (5) Theory of Art in Relation to Architecture.

The course as a whole embraces the outlines of the history of architecture, the general history of art, and a more concrete and detailed study of one of the subjects mentioned under (2). The object is to provide the student with a general knowledge of the methods and purpose of architecture and other branches of art, and their relation to the life, thought, and movement of each age; but it is also intended that the preparation for this examination should give powers of draughtsmanship and a knowledge of historical ornament.

RELATION OF THE EXAMINATION IN ARCHITECTURAL STUDIES TO OTHER UNIVERSITY COURSES OF STUDY.

One of the chief objects of the Examination Architectural Studies is to remove, as far as is possible, the drawbacks which the University candidate for the architectural profession had to face. In many cases, consideration of the additional time and expense involved discouraged parents from giving their sons a University course, even though they might be fully conscious of its value as preliminary to work in an architect's office.

It will, therefore, be convenient to set out in detail some of the chief ways in which the examination may be combined with other courses of work in the University. It should be noticed at the outset that, for admission to any degree in the University, residence for nine terms is a necessary condition. None of the examinations mentioned below may be taken until the University Previous Examination or an equivalent has been passed; but it should be noted that this can be done, and, if possible, should be done, before the student comes into residence. Students are divided into (i) Honours Students, who take a Tripos Examination and an Honours Degree, and (ii.) Pass Students, who obtain the Ordinary Degree by taking either the General Examination (or a Preliminary Examination in Science) and a Special Examination, or by taking two Special Examinations. The relation of these two classes of students to the Examination in Architectural studies differs very considerably.

CANDIDATES FOR HONOURS.

It is probable that the greater number of those intending to pass the Examination in Architectural Studies will be Honours students, who will give at least the main part of their time at Cambridge to systematic work for one of the Tripos Examinations. Having passed a Tripos, or part of a Tripos, they will begin their architectural studies during the third or fourth year of residence.

(a) Mathematical Tripos.—Under the new regulations for the Mathematical Tripos, Part I. may now be taken at the end of the first year. For the majority of mathematical students the most convenient course would be:—First year: Mathematical work for Tripos, Part I. Second year: Work for Architecture, Part I., giving time for reading for Part II. Third year: Work for Architecture, Part II.

(b) Classical Tripos.—The normal course would be:—First and second years: Work for Classical Tripos, Part I., with some reading in the subjects for Architecture, Part II. Third year: Work for Architecture, Parts I. and II. Both might be passed in the year, or the year might be devoted to work for Part I., and Part II. left to the December of the fourth year.

The Honours B.A. Degree is given for the Classical Tripos, Part I., if passed in the third year, and also if passed at the end of the second year, provided in that case that the student presents a certificate showing that he has during the terms remaining to be kept—that is, during the third year—diligently pursued a course of study in the University.

(c) Historical Tripos and Mediæval and Modern Languages Tripos.—The normal course would be:—First and second years: Work for Historical Tripos, Part I., or one section of the Mediæval and Modern Languages Tripos. Third year: Work for Architecture, Parts I. and II. The Historical Tripos, Part I., alone does not entitle to a degree; but a student who has passed it is allowed the B.A. Degree on passing the Examination in Architectural Studies.

(d) Mechanical Sciences Tripos.—This Tripos has special relations to the examination, since a candidate who has passed the Tripos, or has been allowed the Ordinary Degree on it, is excused from the first three papers of Part I. of the Examination in Architectural Studies. A student who passed the Mechanical Sciences Tripos at the normal time—that is, at the end of his third year—would have received an admirable training in the scientific principles involved in the Examination in Architectural Studies, and in much else besides. He would be advised to take the remainder of the examination in the December following the June in which he took his degree. Similar courses of study can be arranged in connection with the Mediæval and Modern Languages and other Triposes.

CANDIDATES FOR THE ORDINARY DEGREE.

Students who do not propose to read for any Tripos may obtain the Ordinary Degree by passing—

I. The General Examination, which in most cases only involves a continuation of school work.

II. A Special Examination in each of the following subjects:—Agricultural Science, Botany, Chemistry, Classics, Engineering Science, Geography, Geology, History, Law, Logic, Mathematics, Military Subjects, Modern Languages, Music, Physics, Physiology, Political Economy, Psychology, Zoology.

In an appendix the schedules for the Examination in Architectural Studies are fully set out.

COAL TAR AND ASPHALT PRODUCTS FOR WATERPROOFING.*

By S. T. Wagner.

The increasing number of solid-floor bridges, especially in cities, involving waterproofing and the expenditure of large sums of money, and the necessity of thoroughly protecting steel reinforcement in concrete under certain conditions, as well as the waterproofing of masonry in general, make the study of the various external methods of waterproofing of the greatest importance. The methods referred to consist in the application to the surface to be waterproofed of either a membrane of felt or fabric of some kind thoroughly cemented together with some bituminous material, or a layer of inorganic material impregnated with the same substance. There can be no question but that the bituminous material so used is the real waterproofing medium, and that all other materials incorporated therein are simply fillers to retain the bituminous material in place and give it additional reinforcement of some kind. Whether the waterproofing is applied for the protection of the public from drippings from an overhead railway bridge, or is used to prevent the corrosion of reinforcing material in concrete construction exposed to water, the object in either case is to obtain a layer of durable waterproofing material which is suitable to each particular case. Waterproofing is expensive, it is always very difficult and costly to repair if defective, and it behoves the engineer to use the best materials that he can secure and to apply them with the greatest care to the structure, which should be especially designed to meet the necessary details required in good waterproofing practice. There is much uncertainty at the present time as to a number of points in connection with this character of work, but there appears to be almost complete agreement that the perfect or imperfect application of the materials determines a good or a bad piece of work. It would appear that, outside of particular instances where waterproofing is used to keep water in, the majority of cases are those in which the object is to keep the water out, and of these a very considerable portion of the structures requiring its use are essentially different, as indicated above—first, solid-floor bridges; second, underground masonry. In the first case the conditions are such as to require special elasticity at all temperatures, in order that the waterproofing may adjust itself to the vibrations of the structure, especially in the cases of railroad bridges of relatively short span. It is usual to have a regularly ballasted floor, which, if properly drained, makes a condition for which we can say in general that the oxidising action of the air is probably a more potent factor in the disintegration of the waterproofing material than the action of whatever water may be present. In the second case, we may safely say that when the masonry is covered with even a small amount of earth, the action of the air is negligible and that of the dampness, or water, is the more serious. In some instances water may be in constant contact with the waterproofing. The materials to be used should, therefore, have chemical and physical characteristics which make them suitable for the above-mentioned conditions.

There are in use at the present time two general classes of materials for waterproofing purposes when the conditions are as just described: First, compounds of an asphaltic nature; second, coal-tar pitch. Both of these materials have been, and are at present, used quite extensively and with varying success. The successes or failures in many cases have been due to proper or improper application as much as to the inherent qualities of the materials themselves, and it is believed that the successful use of either class has often been attributed to this fact rather than to the real qualities of the materials, and that at the presen time the amount of reliable data as to what is needed in the way of a specification for the proper material to be used is woefully lacking. To one who is not a modern chemist and thoroughly versed in the mystic symbols of the hydro-carbons, the chemistry of these materials is almost hopeless in its practical application; but it is quite evident that there is an essential difference between them chemically—that is, between such figures as are usually given in chemical analyses. The physical properties are apparently much more interesting and useful to the practical engineer, and it would seem that we could do away with the chemical data unless they indicate properties which, when translated, will enable us to distinguish undesirable, or, it may be, dangerous, elements. We can understand and appreciate such figures as melting point, brittle point, elasticity at various temperatures, and consistency, and data concerning these properties give us a very fair idea of the various physical properties.

The data which seem to be needed are those from laboratory tests which will enable us to determine the relative durability of these products—first, when exposed to the air; second, when exposed to water; and third, when alternately wet and dry. Any such test is, or would be, essentially an accelerated test. It is possible that at the present time the question of durability might have to be answered by practical experience with the different materials in existing structures. However, it does seem that some information as to what we should aim at and what should be avoided is due from the manufacturer or the chemist. Nothing inspires the confidence of the user of a structural material so much as the free discussion of the methods of manufacture on the part of the manufacturers. Experience in the past with other materials has shown that this confidence is not abused in the preparation of specifications. Such information is badly needed in connection with waterproofing materials. From recent investigations and research there seems to be a general impression that when exposed to the air, asphalt products are more durable than coal-tar products, and that the opposite is true when exposed to water. The opinion that asphalt products are more suitable for use on solid-floor bridges seems to be of general, though not universal, prevalence, on account of the greater elasticity of this material at low temperatures. In other words, an asphalt product with a melting-point of 150deg. Fahr., which will be ductile at a temperature of 40deg. Fahr., or lower, can be obtained, while a coal-tar pitch with the same properties can not. It has been the experience of the writer that asphalt mastics made with natural rock asphalts, when fluxed with asphalt compounds of high ductility at low temperatures, produce mastics which are much less liable to crack in service than are those in which the flux used is brittle when cold. Water to a certain extent is a solvent of all asphalts, but from the tests of Whipple and Jackson* it is quite evident that the question of solubility is a comparative one, and the tests there given show that there are classes of asphalts upon which the action of water is very slight. In this paper a quotation is made from Richardson† which shows that the action of water upon coal-tar is about two-thirds of that upon Bermudez asphalt cement when expressed as the gain in weight in water in a given time. Bermudez asphalt in the tests made by Whipple and Jackson is among those which were most affected by water. A number of cases of the durability of coal-tar pitch in actual service in underground work seem to indicate very positively its suitability for this class of work. Will someone say whether or not properly-selected asphalts are unsuitable under similar conditions? Apparently the questions which need to be answered are the following:—

1. What kind of materials are most suitable for general application to (a) solid-floor bridges; (b) underground masonry?
2. If asphalt products are used, what should be specified?
3. If coal-tar products are used, what should be specified?

Probably the answers to these questions belong to the work now under consideration by Committee D-8 on waterproofing materials; but a general discussion of the subject may be of material assistance to the committee in its work.

* Paper presented at the annual meeting of the American Society for Testing Materials Atlantic City, N.J., June 28, 1913.

* Proceedings, Brooklyn Engineers' Club, March 8, 1900.

† Municipal Engineering Magazine, June to August, 1897.

SUMMER SCHOOL OF TOWN PLANNING.

The Summer School of Town Planning at the Hampstead Garden Suburb was opened on Monday evening by the president, the Earl of Lytton. In his inaugural address Lord Lytton pleaded that the æsthetic considerations should be given a place in the policy of a municipal authority. Those who had seen what had been done at Hampstead would never be content with the old methods—the wilderness of ugly chimneypots and the squalid back-yards, with all the familiar features of town life from which the hand of Nature was ruthlessly banished.

Mr. Raymond Unwin, F.R.I.B.A., remarked, in a paper, that they would never have satisfactory accommodation for a family unless a living-room was provided in which they can have their meals, and a scullery in which to do the necessary dirty work. "What we have to set our faces against," continued the lecturer, "is giving the parlour instead of either the scullery or the living-room in the houses which we set up. If the parlour is an addition, all well and good; but if you try, in an ordinary way, without the scullery and the living-room, you will not get satisfactory living conditions. Unless a family have a living-room in which they can have their meals, and a scullery in which to do the necessary dirty work, hugger-mugger will eventually result, and it is this which we have to set our faces against. But, taking the ordinary family house, one ought to have either a big living-room and a scullery, or, better still, the three rooms—the little parlour, the big living-room, and the little scullery in which to do the dirty work."

In the first of three lectures on the Town-Planning Act of 1909, delivered at the Garden Suburb Institute on Tuesday, Mr. E. R. Abbott, clerk to the urban district council of Ruislip, mentioned as one of the difficulties of working the Act the fact that the term "owner" had not been defined. Circumstances arose when it was difficult to say who was the legal owner, as in the case of a buyer under an instalment agreement. Another difficulty arose from the definition of "land likely to be used for building purposes." In his opinion, it was the most extraordinary definition ever embodied in an Act of Parliament. The Act stated that "land likely to be used for building purposes" might include open spaces, parks, streets, pleasure grounds, or the execution of works on or under roads, which practically meant everything that a scheme was likely to deal with.

An excursion to Ruislip was made in the afternoon by the members of the congress.

The urban district council of Barking Town have received the sanction of the Local Government Board to borrow £11,513 and £684 for building workmen's dwellings in Boundary and Perth roads.

The King has been pleased, on the recommendation of the Secretary for Scotland, to approve the appointment of Mr Alexander Ormiston Curle, formerly secretary, to be member of the Royal Commission on Ancient Monuments and Constructions in Scotland; and the appointment of Mr. William M. Mackenzie, M.A., F.S.A.Scot., to be secretary to the Commission, in the place of Mr. Curle.

Building Intelligence.

TORQUAY. The new municipal buildings adjoining the public library in Castle-circus, Torquay, were opened by the mayor last week. The premises are in the English Renaissance style, with a clock-tower, rising 100ft. high, marking the centre of the pile, over the principal entrance. As far as possible the design has been carried out in local materials, Barton stone being used for the walling, with Beer-stone dressings, and the roof covered with Delabole slate. Internally, a free use has been made of local marble, the principal staircase, with dados, to the grand hall and corridor being of Ipplepen and Ashburton marble, relieved with alabaster. Different designs have been employed for the ceilings in the various rooms. The principal entrance is in the St. Marychurch-road, this giving access to the reception-room (which is 31ft. square), the main staircase and vestibule, the council-chamber, and the various offices. The council chamber overlooks the Lymington-road; this room is 33ft. by 39ft., and is fitted throughout with oak. The mayor's parlour overlooks Castle-circus, the committee-room, which adjoins, looking up Castle-road. The planning of the building has been greatly influenced by the unusual nature of the site, there being a difference in level of nearly 30ft. between the front and back of the building. Thus the ground-floor level at St. Marychurch-road appears as the second floor as seen from the back. The assembly-room has a seating capacity for 1,200 persons, with an additional 300 in the gallery. A special feature is the dancing-floor, a large portion of the area being on Valtor springs. The hall is 112ft. by 60ft., the platform being 26ft., and the gallery 20ft. The principal entrance is from the Lymington-road, where there is a crush-hall, whilst underneath are retiring- and chorus-rooms. The architect is Mr. T. Davison, of London, and the builders were Messrs. R. Wilkins and Sons, of Bristol.

Professor Archibald Barr, Regius Professor of Civil Engineering and Mechanics at Glasgow University for twenty-five years, has intimated his resignation.

The portrait, by Mr. Sydney Hall, of the late Dr. Paget, Bishop of Oxford, now on view at the Royal Academy, has been acquired by subscription, and will eventually be hung with that of the bishop's predecessors in Caddesdon Palace.

The South African Minister of Railways has informed the Union Parliament that the new graving dock, which is to be constructed at Durban, will be 800ft. in length, and able to take the largest ships. The cost will be about £400,000.

At a meeting of the Executive Committee of the American Institute of Architects, held at the Century Club in New York, it has been decided to hold the next convention of the Institute in New Orleans, and the date fixed is December 2, 3, and 4, 1913.

The Tees Conservancy Commisioners are arranging for contracts for the construction of 6½ miles of new carriage road, comprising a main road from Port Clarence to Seaton Carew, and a branch road from Seaton Carew, crossing the reclaimed lands of the Tees Commissioners, to Seaton-on-Tees, near to the extensive works of the Central Zinc Company, Limited.

At the last meeting of the Cardiff Waterworks Committee, the waterworks engineer, Mr. C. H. Priestly, announced that, in conjunction with Professor Parker, he had succeeded in overcoming the difficulty experienced with regard to the growth of sponge in the pipes in the filtering area at the Llanishen Reservoir. The agent employed was a solution of common salt, and so successful had it proved, that, so far, there was no sign of the reappearance of the growth.

A Local Government Board inquiry was conducted at Wellington, Salop, the other day, by Mr. Courtenay Clifton, inspector, into an application by the urban district council for sanction to borrow £4,125 for the purposes of a scheme under Part III. of the Housing of the Working Classes Act, 1890, for the erection of twenty-two three-bedroom working-class dwellings, to be let at 3s. 6d. per week. There was no opposition to the scheme, and the inspector afterwards visited slum property and houses closed in various parts of the town.

COMPETITIONS.

BLACKBURN.—Premiums of £100, £50, and £25 respectively are offered by the corporation of Blackburn in a local competition for a fire-brigade station, with engine-house and firemen's dwellings attached, to be erected on a site facing Harrison-street, Canterbury-street, Sumner-street, and Byrom-street. The longest frontage is in Sumner-street, 397ft. long, part of the adjacent land being occupied by public-houses, and a spacious drill-yard has to be provided—all the premiated plans to become the sole property of the town. No total price is fixed for the outlay; but £300 is to be the outside cost of each cottage, there being thirty-three of these, besides a sergeant's house. The engine-house, facing Byrom-street, is for six machines, and a washing-space to be provided, about 40ft. by 25ft., at rear of same; billiard- and recreation-rooms on the first floor for the men; a workshop of 1,200ft. super. for repairing two engines at a time. A house for the superintendent is to be included. Accrington facing-bricks to be employed, with stone dressings; but the architectural style is left to competitors. Mr. Frank Gatley Briggs, F.R.I.B.A. (Messrs. Briggs, Wolstenholme, and Thornely), is to be the assessor, and the drawings are due on September 30 next. A black-and-white perspective of the main part of engine-house is to be sent in. The drawings to be to 1-16in. scale for plan of entire premises, and ⅛in. scale for the drawings of each part of the scheme. The competitions are confined to architects having an office within the borough.

MANCHESTER ROYAL EXCHANGE.—Now that the Parliamentary Bill for the extension of the Manchester Royal Exchange over Bank-street has received the Royal assent, the directors of the Exchange announce that they hope to be in possession of all the property, and have it cleared ready for building, in twelve months from now. They have decided that the plans for the rebuilding shall be sought in open competition among all architects in practice in the United Kingdom, and, in conformity with their request, the president of the Royal Institute of British Architects has appointed Mr. J. G. Sievewright Gibson, F.R.I.B.A., of Old Bond-street, W., to be the assessor. Mr. Gibson has already taken up his duties, and within a month architects throughout the United Kingdom will be engaged with the plans for the competition. It is hoped by the directors that the award will be made in January, and that "in two and a half years from now Manchester will be in possession of the finest building used for commercial purposes in the world." It is probable that some of the new accommodation will be made available before the actual completion of the whole extension.

WASHINGTON, D.C.—Designs for the new German Embassy to be built at Washington, D.C., have been solicited from architects of German nationality, and four prizes, amounting to 6,250dol., are offered. The prize jury consists of six prominent architects, the Minister of Foreign Affairs (Herr von Jagow), and the German Ambassador at Washington (Count Bernstorff). This open competition for the Washington Embassy is a direct result of the criticism of the new buildings built by Germany without competition, and which have not been successful architecturally.

WILMINGTON, DELAWARE.—An architect for Wilmington City Hall and New Castle County-court House, to be built conjointly at a cost of approximately 1,000,000dol., will be selected through a competition conducted in accordance with the principles approved by the American Institute of Architects, and under the advice of Professor Warren P. Laird, of the University of Pennsylvania. The programme will be issued in the course of the present month. Address Mr. Thos. F. Gormley, Secretary, Church Building, Wilmington, Delaware, for blank application forms.

A new town-hall is about to be built at Omagh, at a cost of £3,700, from plans by Mr J. M. Robinson, of Londonderry.

Correspondence.

TOO TRUE, WE FEAR.

To the Editor of the BUILDING NEWS.

SIR, As you are good enough to accept a free advertisement, would you be so kind as to insert the enclosed?

I have been a subscriber to the BUILDING NEWS for more than fifteen years, and several years ago was placed second in your "Designing Club." Times have considerably altered, and after many years of plodding I find myself resorting to a free advertisement.

What we require is Registration; but I fear this will not come to pass in my time. It seems to me a crime that an honourable profession should be cut up by inefficiency.—I am, etc., T. D.

PROPOSED COUNCIL SCHOOL, SHIREHAMPTON, BRISTOL.

SIR,—My attention has been drawn to the paragraph on p. 148 of your last week's issue headed "Competitions.—Bristol."

The statements contained therein are not correct. I did not place first design marked No. 4, nor did I recommend it for adoption. The design I placed first was marked No. 1, and I put second that marked No. 7B. I am, etc., W. L. BERNARD.

26, Orchard-street, Bristol.

SIR,—We observe that in your notice (contained in the BUILDING NEWS for this week) of the result of the recent architectural competition for this school, it is stated that "the building is to accommodate 520 scholars, and the estimated cost will be £4,155 if stone is used for construction, and £4,255 if built of brick."

As the authors of the accepted design, we beg to say that the accommodation now to be provided is for 320 scholars only, and that our estimates as quoted are for that number only, and not for the total of 520 to be ultimately accommodated.

We shall be obliged by your making the needful correction in your next issue.—We are, etc., HERBERT J. JONES AND SON.

Broad-street Chambers, 52, Broad-street, Bristol, Aug. 2, 1913.

A 25-story building, which will be unique among skyscrapers in New York City, is being planned by the Pan-American States Association. Mr. Francis H. Kimball has been selected as the architect.

Messrs. W. J. Doherty and W. S. Keatinge are the successful candidates in the first examination held by the Royal Institute of Architects of Ireland for entrance into the Studentship Class. Mr. Doherty has, on the recommendation of the board of examiners, been awarded a special prize of £4.

The Great Central Railway Company intends doubling its line between Doncaster and Thorne, to meet the growing demands of traffic in the Doncaster district. This will be the first instalment of a scheme which will eventually include the duplication of the company's present lines for practically the whole distance between Kilnhurst and Thorne.

Some months have elapsed since the City council of Bristol adopted by a unanimous vote the scheme for improving the bend of the river at the Hotwells. In the interval there have been communications with the Local Government Board with a view to obtaining permission to borrow the money between £4,000 and £5,000. The Board have now given their sanction, and the special committee have this week given instructions to prepare plans and specifications for the work, in order that the scheme may be proceeded with at the earliest possible moment.

At a meeting of the Evesham Rural District Council, on Saturday, Mr. Holloway, surveyor, submitted plans for the erection of 26 cottages at Offenham, near Evesham, under the Housing Act. The council had purchased over 16 acres of land for the scheme. The rents would be for cottages with an acre of land 6s. 6d. a week, with a chain of land 4s. a week. Mr. Holloway considered that the scheme would be self-supporting. It was agreed to ask the Local Government Board to sanction loans amounting to £6,350 for the scheme.

Currente Calamo.

We comment fully on the Lumsden appeal decision in our leading article. Yesterday week, while the stormy "petrel was sailing back into his native hurricane," at Carnarvon—it is Mr. Lloyd George's own apt description of himself—the Court of Appeal, by a majority of two to one, arrived at the conclusion that by the Finance Act of 1909-10 the Inland Revenue Commissioners were entitled to tax Mr. Lumsden twice over on his business profits—first as an ordinary income-tax payer, like the rest of his fellow citizens, and then, again, in respect of increment duty. Apparently, as far as Mr. Lumsden is concerned, that decision stands, unless the House of Lords takes Lord Justice Swinfen Eady's view, and decides that a Statute which has had to be so radically amended had no legal, as it certainly had no moral, right to obedience. For us, it remains to discover what the amendment is likely to be worth in the future. Unless the builder chargeable is careful to "require" that the site value shall be the estimated value on the date of the occasion of sale instead of that under the Finance Act, he will find, in all probability, that the taxing official is playing cat and mouse with him in a fashion only possible under a "People's Budget."

The Memorandum issued by the Land Conference on the difficulties and anomalies of the Land Valuation Scheme is a valuable, temperate, and exhaustive review of the present condition of things, and the reforms needful. The conference, of which Lord Clinton is the chairman, consists of three delegates from each of the following organisations, the combined membership of which exceeds 80,000: The Surveyors' Institution, the Auctioneers' and Estate Agents' Institute, the Central Chamber of Agriculture, the Farmers' Club, the Central Land Association, the Land Agents' Society, the National Farmers' Union, the Rating Surveyors' Association, the Central Association of Agricultural and Tenant-Right Valuers, and the 1894 Club. The results with reference to agricultural land, given at length in the Memorandum, are embodied in the following summary of the views of the conference:—

(1) Apart from the doubtful utility of the valuation of agricultural land when obtained, the uncertainty which at present prevails as to the true interpretation to be placed upon many of the provisions of the Act renders inexpedient further progress with the valuation until that interpretation is authoritatively ascertained, and any attempt to press forward with it in the absence of such knowledge will aggravate the anxiety, confusion, expense, and disturbance to ordinary current work which within the delegates' present knowledge is at present being caused.

(2) The feeling of uncertainty and insecurity prevailing is much increased by the absence of all authoritative indication as to the purposes for which it is proposed that the values under the Act, when ascertained, shall eventually be used.

(3) In no circumstances can any of the values of agricultural land now being ascertained under the Act equitably be made the basis of a scheme of rating or taxation, and it is a fallacy to suppose that prairie or real unimproved value can by any sound process be deduced from them.

These views apply generally also to the valuation of urban and suburban land, the position of which under the scheme is discussed in detail. The conference are further strongly of opinion:—

(1) That in order to secure the maximum of uniformity in the valuation, points at issue should be pressed forward for authoritative decision with all speed.

(2) That valuations which have been settled or become fixed should be permitted to be reopened in the event of the interpretation, upon which they have been accepted or allowed to stand in default of objection, failing to receive judicial endorsement.

(3) That in the event of the White Paper instructions proving to be a correct interpretation of the meaning of the Act, steps should be taken to secure the intentions of Parliament being effected—viz., that increment value duty should be assessed only upon a rise in the actual value of the site.

The appendix outlines some practical proposals for carrying out the reforms advocated in the memorial on land and taxation reform, signed by 176 members of Parliament, which was presented to Mr. Asquith and Mr. Lloyd George on May 18, 1911. Mr. Lloyd George then promised that the scheme should have his careful consideration. It needs and deserves it.

It is stated that the Royal Academy contemplates the devotion of a small room to miniatures in connection with its approaching Winter Exhibition. We doubt whether so limited a display would be worth inspection. If it is to be included, however, we trust more regard will be paid to its artistic and chronological sequence than was vouchsafed to the really excellent collection which formed part of the Old Masters' Exhibition in 1879, when Queen Victoria, the Duke of Buccleuch, Mr. Whitehead, Mr. Joseph, Lord Wharncliffe, Mr. Morrison, and others so liberally responded. Recent winter exhibitions at Burlington House have not been particularly attractive, and the Royal Academy is not receptive of suggestions. Otherwise, it might do well to wait till 1914-15, and then organise a really creditable and representative exhibition of British and foreign miniatures. Owners, however, are little likely to lend their treasures unless the selection is entrusted to a committee of competent experts. Unless such a body is given the task, all we shall probably get will be a haphazard inclusion of good and bad from private collections, which have little representative or artistic value, recorded by a catalogue full of mistakes.

Mr. Asquith's reply to the Channel Tunnel deputation on Tuesday was, on the whole, favourable, and we think rightly so. Whatever force there may have been in the "strategic" objections of Lord Wolseley and his school of military critics—and we confess we never seriously regarded them—certainly to-day the airmen of the Continent are far more possible invaders than those who may seek a footing on our shores by way of the tube. And it certainly seems to us that with a friendly France as our neighbour, our striking power in Europe, either on her behalf, or with her consent on our own, would be trebled by the ease with which we could convey troops where they were needed. That the Channel Tunnel would immensely benefit trade, and largely increase foreign visitors to our shores, goes without saying. That improved methods of traction now at our command have removed the drawbacks fomerly urged is evident. We trust, therefore, that the close of the second decade of this country will see the long-awaited tunnel completed, and remunerative to its patient and persistent advocates.

There seems some chance of common-sense prevailing at Dublin, after all, in regard to the new Art Gallery. Last Tuesday Sir Hugh Lane arrived in Dublin to remove the paintings, sculptures, and other objects of art of which he had made the city a conditional present, in consequence of the corporation having rejected his proposals for an art gallery across the River Liffey, where the present Metal Bridge stands. These conditional gifts, which consist of 52 oil-paintings, 16 water-colours, and 9 pieces of sculpture, were removed from the walls of the Municipal Gallery in Harcourt-street on Thursday week, and Sir Hugh Lane explained that they would be returned to the city if the corporation agreed to adopt the bridge site for an art gallery. A conference took place on Friday afternoon between Sir Hugh and a committee of the corporation, and as a result Sir Hugh agreed to provide an excess over the £45,000 which the gallery is estimated to cost, on condition that he is to have absolute control of the plans. If the arrangement is not ratified by the corporation within six weeks Sir Hugh Lane will remove the collection to London.

It is a pity municipal councillors and others do not assimilate facts before making statements. On July 29, in the debate on town planning which took place in the Birmingham City Council, Mr. George Cadbury, jun., is reported to have said "that he was not aware that building had stopped any more in town-planning areas than in any others." And Mr. Fryer made a statement in which he said "that statistics prepared by the city surveyor disproved the allegation that town planning had in any way interfered with building." Both these statements are certainly untrue as regards the great and populous district of East Birmingham, which was the second town-planning area taken in hand by the corporation. One leading Birmingham surveyor, Mr. Walter R. Ludlow, F.S.I., of 19, Temple-street, Birmingham, writes to the *Birmingham Daily Post*, declaring his firm were agents for an estate in East Birmingham, and prior to 1910 were making roads and selling land upon which from 200 to 300 houses per annum were erected. Since that time they have not sold a yard of land on this particular estate, nor have they made a new road, and his experience is only the same as that of other surveyors in that district. A similar statement is made by Mr. Richard Fowler, of 118, Colmore-row, agent to the owner of an estate in the East Birmingham scheme area, forty-five acres of which was committed to two schemes of development prior to the town-planning scheme, upon which are ten out of the fifteen approved roads within the scheme. The general effect of the scheme is, as Mr. Fowler told the Local Government Board in May last, to discourage the building of smaller workmen's houses, especially in the developed areas, exactly where the houses are so urgently wanted. Rents are much higher in the district already, the area having been shut up from building operations for nearly three years. Each year the demand for land for building increased until the scheme was applied for, when builders, of course, had to finish houses commenced. Mr. Fowler has only leased land for six houses within the scheme area since the scheme was projected, until April 25, 1913, when he sold some land for another client for 10s. a week houses. On three other estates for which he is surveyor within the area they have only had one new house built; in the last three years previous to the application for the scheme houses were being built at the rate of considerably over 150 a year on these four estates. "For three years," says Mr. Fowler, "I have been on my knees to the committee, the Local Government Board, and Mr. John Burns requesting that certain provisions, arbitrary and unfair, and of no practical value to the scheme, should not be put in the way of this development, which more than complied with all the requirements of the Act."

We know ourselves that the refusal of the British Government to take part in the ex-

hibition is due to the fact that the Exhibition Department of the Board of Trade found that it was impossible to induce a sufficient number of manufacturers to incur the expense of preparing exhibits. Manufacturers point out that British trade is relatively small at San Francisco, and little commercial return could be expected from sending exhibits. The decision not to send exhibits had nothing to do with the Panama Canal tolls or any other issue of the kind. The Board of Trade knows, and we know, that British exhibitors are tiring of exhibitions. Abroad and at home their multiplication of late has had the effect of degrading them into mere advertising shows, and the genuine exhibitor sees the game is not worth the candle.

CHIPS.

The Belfast Harbour Commissioners at their meeting on Tuesday approved of a proposal to construct, at a cost of £75,869, a new wharf for the construction and fitting-out of vessels of the largest size.

Mr. James Edward Anderson has been appointed works assistant to the chief mechanical engineer of the Midland Railway, Derby. Mr. Anderson is succeeded as chief draughtsman of the mechanical engineer's department by Mr. S. J. Symes.

At Beckenham on Tuesday a verdict of accidental death was returned at an inquest on Sydney Alfred Rodaway, aged forty-three, of Winchfield-road, Lower Sydenham, who, while working last Friday morning at the Kent House brickfields, fell into some revolving machinery.

In the annual report of the General Board of Cambridge University, published on Tuesday afternoon, attention is called by the Professor of Geology to the wonderful collection of building stones presented by Mr. Watson to the Sedgwick Museum—a collection unrivalled in the Empire.

The new Queen's Theatre in Mile End-road, South Shields, was opened on Monday by the Mayor of the borough. The building provides accommodation for 2,000 persons. The architects are Messrs. Gibson and Steinlet, North Shields, and the builder is Mr. W. J. B. Weir, Wallsend.

The King has lent to the Victoria and Albert Museum a model, made by Indian craftsmen, of the Greater Throne-Pavilion used by the King-Emperor and Queen-Empress during the concluding portion of the Delhi Coronation ceremony on December 12, 1911. The model is on exhibition in Room I. of the Indian Section of the Museum, approached from the Imperial Institute-road.

At the last meeting of the executive committee of the American Institute of Architects, the question as to the payment of the competitors in a limited competition, which has been by many construed as obligatory, under the Code, was debated, and it was decided that while the payment of unsuccessful contributors might be classed with other things that are desirable, it is not mandatory.

At the Ipswich and East Suffolk Hospital, in Anglesea-road, Ipswich, a series of extensions has just been completed from plans by Mr. H. Munro Cautley, A.R.I.B.A., of Museum-street, Ipswich. The new buildings include a casualty theatre for minor operations, and an extension of the outpatients' block, involving an outlay of £3,100, exclusive of furniture, apparatus, and appliances provided by a special donation, and an enlargement of the nurses' home, at a total cost of £2,265.

The Alfred East Art Gallery was publicly opened at Kettering on Thursday in last week by Earl Spencer, Lord Lieutenant of Northamptonshire. The gallery, which has been built from designs by Mr. J. Alfred Gotch, F.S.A., F.R.I.B.A., was erected by the urban district council to house a representative collection of his works presented to Kettering by Sir Alfred East, R.A., President of the Royal Society of British Artists. The collection embraces a large number of landscapes in oils, water-colours, and etchings, many of which have been exhibited in the Royal Academy and principal galleries. Among the speakers at the ceremony was Sir Aston Webb, R.A. Upon the suggestion of Earl Spencer, it was resolved to send a telegram to Sir Alfred East, who is lying ill at his residence in Belsize-park, Hampstead, deeply regretting his absence, and conveying hearty greetings, with sincere wishes for his speedy recovery. We are glad to hear that there is some improvement in Sir Alfred's state of health.

PARLIAMENTARY NOTES.

THE SCOTT MEMORIAL.—In the House of Lords on Tuesday Earl Curzon called the attention of the First Commissioner of Works to the report of the Mansion House Committee of the Captain Scott Fund, in which it is proposed that the National Memorial to the late Captain Scott and his four companions shall be erected on the edge of Hyde Park opposite the house of the Royal Geographical Society in Kensington-gore, and asked whether his Majesty's Government would sanction this proposal. A sum of between £70,000 and £80,000 had been subscribed to the Captain Scott Fund, several thousand pounds being earmarked for a memorial to Captain Scott and his comrades. The Mansion House Committee recommended that, with the consent of the Dean and Chapter, a tablet should be erected in St. Paul's, and the bulk of the money earmarked for the monument should be devoted to erecting a very much more imposing structure in some public place in London. They suggested as the site an area inside the railings of Hyde Park and immediately opposite the house hitherto known as Lowther Lodge. It would be possible to place the monument on the narrow strip of ground between the railings of the park and the road running up in the direction of the Albert Memorial without sacrifice of trees or of space available to the public. Earl Beauchamp said the decision to be come to in this matter was guided by the general principle laid down by the Department. He admitted freely that if there was a vote in the House of Commons in the sense of demanding or approving a site being given in one of the Royal Parks, it would be his duty to comply with it. There were a good many people who regretted very much that in times gone by the Department was not more hard-hearted and did not prevent the erection of some of the memorials to be seen in our parks. Without such a vote as that to which he had referred he did not see his way to sanction the proposal. Earl Curzon said that he would be quite willing for the matter to be submitted to the judgment of the House of Commons at a later date, and he would take no definite steps in the meantime.

ASCERTAINMENT OF INCREMENT VALUE.—In Committee on the Revenue Bill on Friday last on Clause 2, which provides for the ascertainment of increment value where the value of the buildings exceeds the value of the site, Mr. Royds moved to omit certain words, his object being to extend the application of the clause to all land, without regard to the comparative value of the gross and the full site value. The clause, he pointed out, only referred to composite property, and would not cover agricultural land. It would not cover property with a house upon it unless the house was double the value of the land, and the effect of it would be that the pernicious system of taxing land where there had been no rise in the value of the site would be continued, except where the gross value was double the value of the site. Claims had been made, as in the Lumsden case and the Richmond case, where there was no rise in the value of the site. These cases had been brought into Court, and in the Court of Appeal Lord Justice Swinfen Eady had endorsed in its entirety the line which the opponents of this assessment had been taking. If the Commissioners had not issued a White Paper with instructions directing the purchase price to be disregarded, this clause would not have been necessary. At the eleventh hour they had relented, and this clause was introduced, which would make increment value be calculated on the pure valuation, but not payable unless there was a rise in the value of the site. The clause, however, without his amendment would not cover instances he had alluded to.—Sir J. Tudor Walters argued at considerable length that the amendment would defeat the object of the clause, which was to prevent profit on a building being recognised as increased in the value of the site.—Mr. Pretyman remarked that the last speaker had overlooked the real purpose of the amendment, which was to exclude the building altogether from the calculation of site value. There was no reason why the clause should be confined to cases in which the gross value was more than double the site value.—Mr. Lloyd George contended that the distinction drawn in the clause was necessary in order to meet a case in which land, which in ordinary circumstances would not be worth more than £50 or £100 an acre at the outside, rose in value to £900 or £1,000 by reason of the fact that a local authority desired to acquire it for the building of a school or for some other communal purpose. In such a case as that the vendor whose land had increased to this extent without his having spent a penny on it had no right to special treatment in respect of his liability to increment value duty.—Mr. Pretyman argued that the fact that a man had obtained a certain price for a particular piece of land would be accepted by the courts of law as evidence of its true value. Harm was likely to be done by legislating for imaginary cases on the supposition of the market price not being the value of the land, and he saw no reason for doing so.—Mr. Lloyd George insisted on the necessity of words showing that the vendor was liable to the increment value duty in such a case as he had mentioned, and expressed his willingness to accept an amendment so long as that object was attained. At the same time he could not agree that the fact that in certain special circumstances £1,000 an acre had been paid for land of which the real value was not more than £50 or £100 would be conclusive evidence of the value of the land. He would consider between then and the Report stage whether some form of words could not be devised to meet the objection of the Opposition. —The amendment was by leave withdrawn in view of the promise of the Chancellor of the Exchequer.—On the motion that the clause be added to the Bill, Mr. Pollock contended that the clause was altogether too limited in scope. It ought to sweep away all the grievances, and not only those where a particular ratio was artificially found to exist.—Mr. Pretyman thought the clause was meeting the difficulty in a wrong way. The difficulty did not arise because the Courts had ever held that price and value were different. All the amendment did was to give everybody, without exception, an opportunity of proving that the value of the bare land was not greater at the time of the sale, or was only to a certain extent greater, than it was on the original occasion. The clause was added to the Bill. On Clause 3, which provides for the relief of land from increment value duty while the land is being developed for building purposes, Mr. Peto moved the omission of the words in the clause giving a discretion to the Commissioners of Inland Revenue. If, he argued, the land was being developed, the relief ought to be given without let or hindrance from the Commissioners.—Sir R. Isaacs explained that all the Commissioners of Inland Revenue would be entitled to do under the clause would be to take care that relief from increment value duty was not obtained by a pretended development.—The amendment was withdrawn, and the Attorney-General agreed to accept words providing that it should be proved to the satisfaction of the Commissioners that land was being "boná-fide" developed, and also to eliminate the word "suitable" as applied to buildings.

How long the scaffolding in Westminster Hall is likely to remain the First Commissioner of Works cannot say; but the examination of the roof will be completed about October. He adds that the hall is under the constant observation of the day and night police, and is adequately provided with fire appliances.

The Featherstone Urban District Council have received the sanction of the Local Government Board to purchase from the trustees of Christ Church College, Oxford, eleven acres of land, adjoining the St. Thomas's Church, Purston, for £900, for the building of 159 houses under the Housing of the Working Classes Act.

The municipal authorities of Ceuta invite tenders for the erection of a building intended for the town-hall. The upset price is put at 500,000 pesetas (about £18,500). Although this contract will doubtless be awarded to a Spanish firm, nevertheless the carrying out of the work may involve the purchase of materials outside Spain.

The death is announced of Mr. G. T. Howell, architect, of South Norwood, who joined the Society of Architects in 1895, being then in practice in Sunderland. He was articled to a firm of architects in London upwards of 50 years ago, and during his long professional career had carried out many commissions, chiefly of a domestic and business character, in various parts of the country.

Mr. Albert L. Brockway, of Syracuse, N.Y., was on July 11 elected president of the New York State Association of the American Institute of Architects. Delegates from the four New York State Chapters met and organised this association, the purpose of which is to secure uniform action on public questions affecting architecture. At the meeting the new state housing law for second-class cities was strongly endorsed.

The Local Government Board have sanctioned the use of the Green Hall-lane Estate, Shelf, by Halifax Corporation as a sanatorium for the borough. To residents at Shelf, who offered opposition at the inquiry, they have forwarded a letter stating that they see no ground for considering that the sanatorium will be a nuisance, or in any way a danger to health. The estate was bought by the corporation for £6,000, and the mansion is to be adapted to accommodate fifty consumptives.

STATUES, MEMORIALS, &c.

BURNS STATUE FOR STIRLING.—Last week in the office of Messrs. Welsh and Robb, solicitors, Stirling, Mr. Hodge, sculptor, London, exhibited a model of the bronze statue of Burns which he was commissioned to execute some months ago by Provost Bayne. The model and photographs of the statue itself in its plastic state show the poet in a pensive attitude, and the delineation is life-like and true to the accepted portraits and to the best models. The statue surmounts a pedestal and column of tasteful proportions. The height of the whole is 21ft. On the four sides of the columns will be inserted bronze tablets illustrating the Muse and scenes from the poet's works, while below the cornice will be the lines, beginning, "Still gently scan." The town council have already given an excellent site for the statue in the triangular plot of ground between the Corn Exchange-road and Dumbarton-road, and if they finally approve of the artist's design there will be an opening from each thoroughfare. It is expected that about twelve months will yet elapse before the statue is ready for unveiling.

The contract for the construction of the Roundwood reservoirs for the corporation of Dublin has been taken by Mr. John Mackay, of Dundee, at a price exceeding £70,000.

The Local Government Board has notified to the Rochdale Corporation its sanction to the borrowing of sums of £5,600 and £24,400 for the extension of the Rochdale Corporation Electricity Works.

The municipal authorities of Budapest have approved the proposals submitted by the mayor for the enlargement of the St. Gellert and St. Laslo hospitals. The cost of the extensions is estimated at 4,545,747 kronen (£189,400).

The extension of the electric tramway system at York from Nessgate to South Bank district took place at the end of last week, after inspection by Lieut.-Col. Von Donop, of the Board of Trade. The lines have been laid under the direction of Mr. F. W. Spurr, the city engineer of York.

A new council school was opened at Goole on Thursday in last week. The edifice, which has cost £8,000, will accommodate 400 scholars, and it is intended to extend the building to make it a three-department school, with accommodation for 1,050 children. It has been built by Messrs. Kelsey Bros., of Goole.

For the purpose of developing the Norwegian traffic, the North-Eastern Railway Company intends to build a riverside station near the entrance to Tyne Dock. It will have a Customs and mail offices, and a passenger platform with siding accommodation. The station will have a quay nearly 2,000ft. long.

The Blackpool Town Council on Tuesday accepted from Messrs. C. C. Grundy and J. R. G. Grundy, the donors of the Blackpool Art Gallery, a further gift of 13,000 square yards of land and a house for the purpose of providing a branch reading-room and a public recreation-ground for the South Shore district.

The Birmingham City Council have decided to carry out a sewerage scheme for dealing with the district along the Warwick-road from Stratford-road to Acock's Green Village, at an estimated cost of £13,500, and to purchase from Lord Calthorpe 87 acres of land surrounding the Perry Reservoir at £7,000, for the purposes of a public park.

At a recent meeting of the Cleveland (Ohio) Architectural Club, the following officers were elected for the ensuing year:—President, H. D. Hughes; vice-president, W. R. Powell; secretary, L. Fewsmith, jun.; treasurer, Wm. A. Bohnard; librarian, W. A. Hudson; chairman current work committee, E. Heyd; and chairman entertainment committee, R. M. Wright.

At Tuesday's meeting of Workington Town Council, Mr. Horace Chamberlain, assistant engineer to the British Gas Light Company, Ltd., of Hull, was appointed gas manager at a commencing salary of £250 per annum. Mr. Chamberlain, who is thirty-five years of age, is lecturer on gas engineering and gas supply to the Hull Municipal Technical College.

Mr. A. W. Brightmore, D.Sc., M.Inst.C.E., has held an inquiry on behalf of the Local Government Board, at the Guildhall, York, with respect to the application of the City Council for power to borrow sums amounting in the aggregate to £4,522 for public works, including the laying-out of public pleasure- and recreation-grounds at Glen, Heworth, Nunnery-lane, and on the south bank of the river Ouse between Lendal Bridge and Scarborough Railway Bridge, the last-named also including piling the river bank, to prevent erosion in the time of flood.

Our Illustrations.

NEW BUILDING, MILLBANK, WEST MINSTER, FOR THE BRITISH AMERICAN TOBACCO CO., LTD.

This new building, at the corner of Dean Stanley-street and Millbank, Westminster, S.W., is being erected for the British-American Tobacco Co., Ltd. There is a frontage of about 136ft. to Dean Stanley-street and about 104ft. to Millbank. Messrs. Holland and Hannen and Cubitt, Ltd., are the contractors, and Messrs. Gordon and Gunton the architects. The structure is being erected under the Steel Frames Act, and is entirely supported on steel girders and stanchions, which are encased and protected throughout with concrete, the contractors for the steelwork being Messrs. the Aston Construction Co., Ltd. The building consists of seven floors and the basement, and the height is carried to the extreme limit allowed by the London Building Act—80ft. from pavement level to eaves—with two stories in the roof above and towers at the three corners. The floors throughout are formed with reinforced concrete and tile construction. Some of the girders supporting these floors are of exceptional span—over 40ft. This gives a clear floor space without any columns or other obstructions. The upper portion of the premises will be occupied by the British-American Tobacco Co., Ltd., and the lower floors (which have an area of a considerable extent), from the third floor downwards, will be available for letting purposes. The retaining wall on both fronts, with the vaults at the back of same, have been executed in reinforced concrete, like the large strong-room in the basement. The whole building will be heated with atmospheric steam, and there will be a system of mechanical ventilation to several of the lower floors. An artesian well has been provided, and the water supply therefrom has been ascertained to produce about 4,000 gallons per hour. This will be stored in large tanks, chiefly in the basement, which have a capacity of more than 25,000 gallons. The frontages to Millbank and Dean Stanley-street are being faced entirely with Portland stone, with the exception of a plinth at the pavement-level, which is in polished Aberdeen granite. The roof will be covered with Westmoreland green slates, and the dormers will be covered with copper.

BRIGHTON, HOVE, AND SUSSEX GRAMMAR SCHOOL.

This building stands at the junction of the Dyke and Old Shoreham roads, on the boundaries of Brighton and Hove. On the west boundary the site has a fall of 30ft. from north to south; but it is level on the main axial line of the school. To overcome the sharp fall, the playgrounds are designed on two levels, with two floors of play-sheds on the dividing-line. The building comprises all the accommodation necessary for five hundred boys, with science and art rooms on the second floor, over the assembly hall, and a rifle range on the roof of the play-sheds. Advantage has been taken of the fall of the site to provide three floors of class-rooms with due south light—one below and one above, and the central one level with the assembly hall. A special feature has been made of the assembly hall, which has a groined ceiling in fibrous plaster, high panelling, and a series of paintings illustrating the "History of Man in Sussex" from prehistoric to the present time, by Mr. Ginnett. The corridors also have groined ceilings, and the principal one is paved with marble squares. The classrooms have maple-wood block floors and tile dadoes. The exterior is in Keymer red brick and stone, and the roofs are covered with Keymer hand-made tiles. The sculptured tympanum over the principal entrance embodies the coats-of-arms of the three authorities. The whole of the floors, staircases, and roofs, as well as the columns, with their foundations, have been constructed by Stuart's Granolithic Co., Ltd., of Millwall, E., and 45, Bedford-row, W.C. The architect is Mr. S. B. Russell, F.R.I.B.A., of Gray's Inn-square, London; the quantity surveyor, Mr. Simeon Hunt, of Brighton; the builders, Messrs. [illegible]

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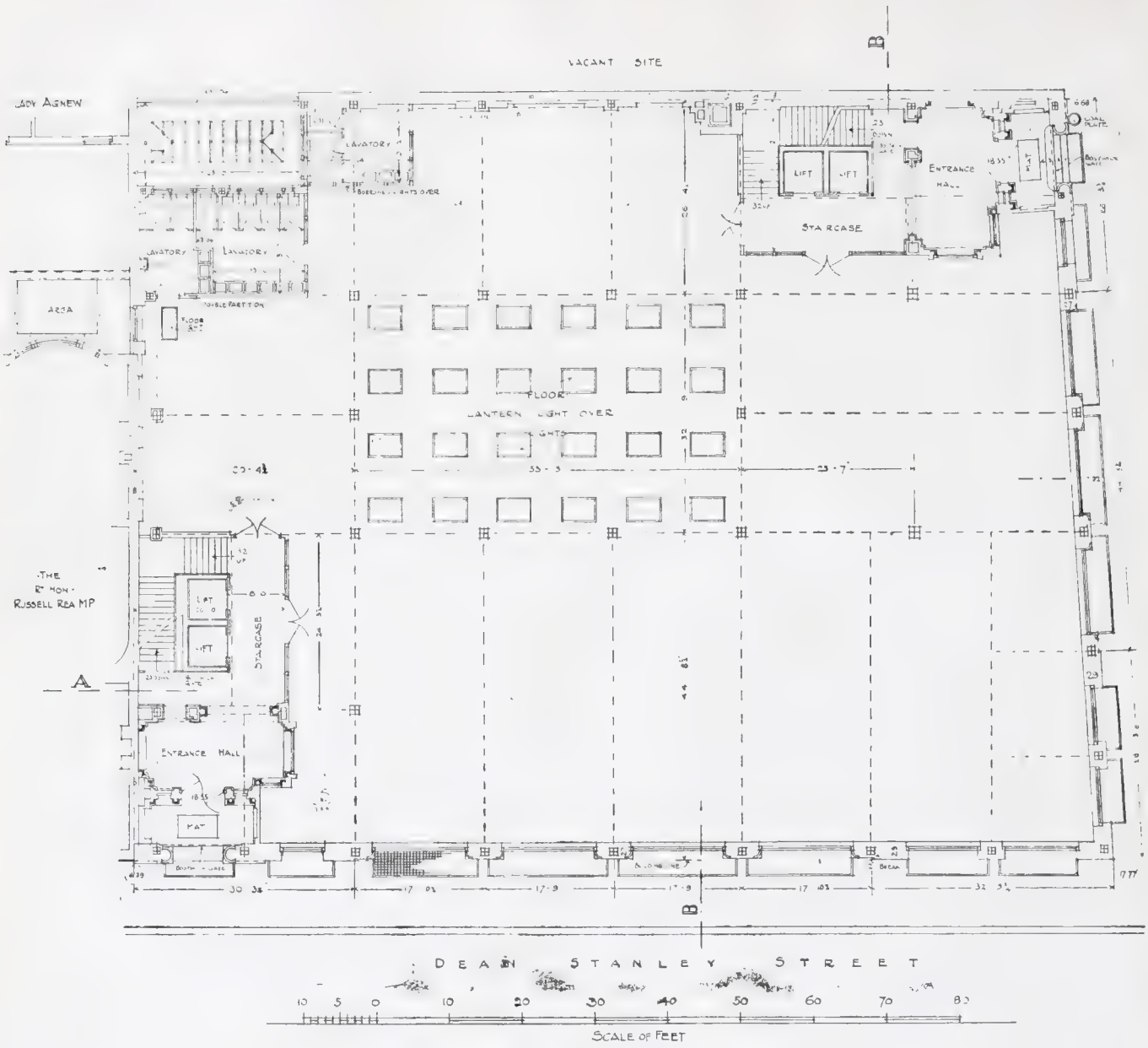
The site of this building is adjacent to the Victoria Rooms, overlooking the large open space where the King Edward Statue has recently been erected. In order to improve Whitehall-road [illegible] to the Victoria Rooms [illegible] added to the roadway by setting back the frontage boundary-walls, so that the available space for this building is restricted, and necessitates covering practically the whole site. The objects of the Institute are principally to promote a good understanding between all parts of the British Empire, encourage trade within the Empire, and especially to provide a non-political platform for Empire progress and defence. On the ground-floor level the drawings provide for a reception-hall 37ft. by 25ft., with a large semicircular bay-window facing towards the city. The main-entrance lobby is to have a domed ceiling lantern, and will conduct to the grand staircase, 19ft. by 14ft., opened to the reception hall, with Ionic columns on either side. Statue recesses are formed in the sides, and the ceilings and walls will be architecturally enriched. Gentlemen's cloakrooms and lavatories, caretaker's staircase, and entry approached by a side passage occupy the remaining space on this floor. The first floor is to comprise a salon 15ft. 6in. high, and floor area as the reception-hall. On the second floor will be a library, 25ft. square, writing- and smoking-room, a buffet with servery and stores, and on the third floor a reference-room, committee-room, and commodious living-rooms for the caretaker. The design has been prepared by Mr. Norman G. Bridgman, A.R.I.B.A., of the firm of Messrs. Bridgman and Bridgman, A.R.I.B.A., M.S.A., architects, of Bristol, Torquay, and Paignton.

THE PARSONAGE FARM, SHIPTON-UNDER-WYCHWOOD, OXON.

The Parsonage Farm has evidently, in time past, had close connection with the church. The old house stands near the church—in fact, the west wall forms the boundary of the churchyard. This fact made the matter of additions one of considerable difficulty. The house was also closely surrounded by old barns and the usual farm buildings, which were too useful and good to be pulled down, and so the available direction in which the additions could be made were fairly restricted. The old house has seen many changes, and, when it came into the possession of the present owners, had long been used as two cottages. The building was of the Cotswold type—stone walls and stone-mullioned windows, and stone-covered roof. The additions have been carried out in harmony with its style, though in no way being a copy of the existing work. Kitchens and all domestic offices were added at the back, and a drawing-room, with rooms over, have been built towards the east, converting the building into a convenient and well-appointed modern country house. The barns and sheds have been utilised as out-buildings, stabling, and garage. The surrounding ground, with its stone walls and neighbouring stream, lent themselves well to an attractive garden scheme. This has made much progress, and already looks fairly established. The alterations to the house and the garden have been designed by Mr. O. P. Milne, architect, of London.

THE OFFICERS' MESS, WEST AFRICAN FIELD FORCE, LAGOS, WEST AFRICA.

The main building here illustrated by the perspective, plan, and elevation comprises the mess, with its billiard-room and lounges. A verandah extends round the four sides, as a protection from sun. The front verandah is 12ft. wide, with the two corner bays, and this forms the chief lounge. Stairs lead to the roof of this part of the premises, for-



NEW BUILDING, MILLBANK, WESTMINSTER, FOR THE BRITISH-AMERICAN TOBACCO COMPANY, LIMITED.

Messrs. Gordon and Gunton, Architects.

sitting out after sunset. The floors of the verandahs are kept down to allow of fanlights over same. All the openings to the rooms are fitted with French casements, opening outwards, flat against the wall, with provision for mosquito-proof doors on the inside. The roofs over the rooms are covered with corrugated iron, and the verandahs and outbuildings have flats in ferro-concrete. The whole of the buildings will be in brick, cement-rendered, with all cornices and mouldings run. The whole of the joinery will be in Troho. The floors are in wood blocks. The sleeping accommodation is provided by bungalows, each comprising a bedroom and bathroom, with a 10ft. verandah on all sides, and mosquito-proofed. One side is divided off as a sitting-room. The work is from the designs of Mr. E. Carrington Hanson, A.R.I.B.A., of the Public Works Department, and it is being carried out by the Departments, under the supervision of the Director of Public Works.

CHIPS.

The foundation-stone was laid last week of a New Jerusalem church in Wood-street, Middleton, Lancs. The contractor is Mr Percy Tetlow, of Middleton.

Mr Sergeant Kendall, of New York, a well-known artist, has been elected director of the School of Fine Arts at Yale University. He succeeds Mr. John Ferguson Weir, who retired this spring, after forty-four years of continuous service.

Plans have been prepared by the urban district council of Hendon of a town-planning scheme for an area containing no fewer than 6,000 acres, or about three-fourths of the district.

The King visited Chichester on Saturday, and opened the reconstructed West Sussex Hospital, which has been rebuilt and renovated at a cost of £16,000 as a memorial to King Edward VII.

The directors of the London and South-Western Railway Company have appointed Mr F. B. Wharton (formerly of Plymouth) as Assistant Docks Manager at Southampton Docks, as from August 1.

A new ward and operating theatre were poened at the cottage hospital, Cobham, by the Duchess of Albany on Thursday in last week. The honorary architect was Mr. Leonard Martin, F.R.I.B.A., of Pall-mall.

The new church of St. Ann's, at Rahan, near Carberry, Co. Kildare, was recently dedicated by the Archbishop of Dublin. It is cruciform on plan, with shallow transepts, and is built of dove-grey Carrick limestone, the internal walls being plastered.

A 22-story clubhouse is to be erected as the new home of the Yale Club on corner of Vanderbilt-avenue and Forty-fourth-street, New York City, at an estimated cost of 500,000dol. The architect is Mr James Gamble Rogers, of East Twenty-fourth-street, New York.

The Southampton memorial to the Pilgrim Fathers will be unveiled on Friday in next week, the 15th inst., by Dr. Page, the American Ambassador. The monument has been executed at a cost of £600, from designs by Mr. R. M. Lucas, F.R.I.B.A., of Bargate-chambers, Southampton, which were selected in competition.

A Local Government Board inquiry was held at Felixstowe on Wednesday by Mr. H. R. Hooper, in regard to an application from the urban district council for Felixstowe and Walton to borrow £4,730 for works of sewerage.

Mr. J. D. Watson, engineer to the Birmingham Tame and Rea District Drainage Board, has been appointed chairman of the consultative committee of the Association of Municipal Corporations appointed to inquire into the probable effects of the recommendations of the Royal Commission on sewage disposal.

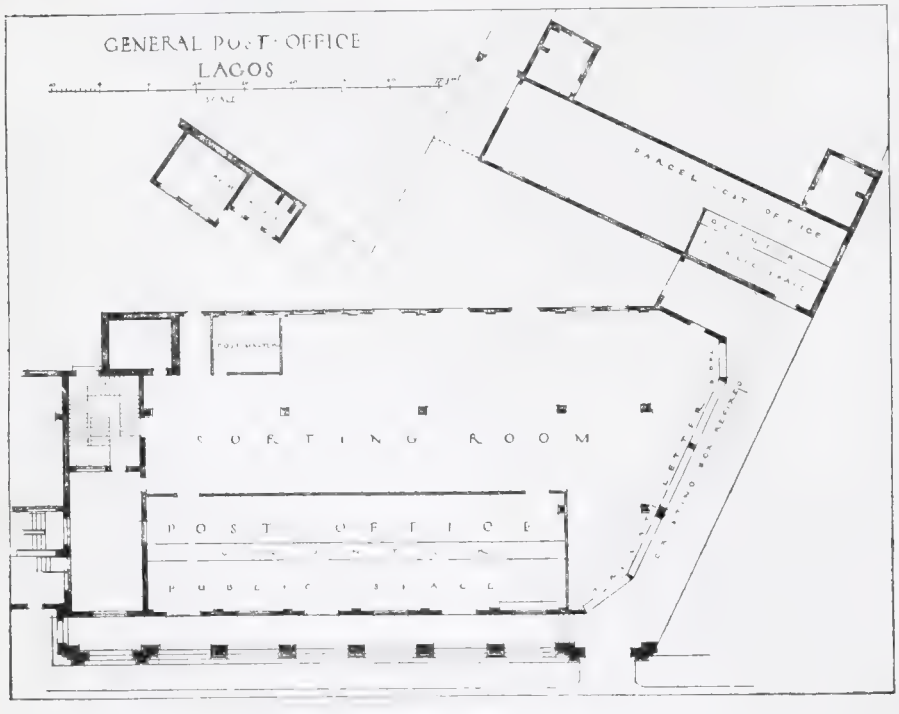
A new porch is being added to the church of St. Alphege, in London-wall, E.C. It is in the 14th-century style, to harmonise with the ancient tower and arches, which were built in 1327. The architect is Mr. Henry Ling, A.R.I.B.A., of Charing Cross; and the contractor Mr. Downes, who recently executed the work of restoration at St. Helen's, Bishopsgate.

At the Army Ordnance establishment, near Selby, a water-tower is to be erected by the Trussed Concrete Steel Company, Ltd., to meet the requirements of Colonel R. D. Petrie, of the Chief Engineer's Department of the War Office. The tower will have a total height of about 75ft., and the foundation piles are to be driven 26ft. below ground level. The capacity is 20,000 gallons.

The building operations throughout the Dominion of Canada for the first six months of the year 1913 show, when compared with the same period of 1912, a slight decline. The total of the permits issued in the thirty-two principal cities amounts to 79,787,919dol. for the first six months of the present year. The total for the same period of last year was 87,353,151dol., indicating a decline of 8 per cent.



THE GENERAL POST OFFICE, LAGOS, WEST AFRICA.—Mr. E. Carrington Hanson, A.R.I.B.A., Architect.



THE GENERAL POST OFFICE, LAGOS.

This public building is situated on the water-front at Lagos. On the ground floor is one large hall for the general work of the Post Office, and on the first floor accommodation is provided for the Postmaster-General and his staff. The whole of the work structurally is in steel and concrete. The first floor and roofs of the back portion of the ground floor likewise is in ferro-concrete. The roofs of this back portion are kept lower than the first floor of the main building, so as to allow of extra light to ground-floor premises. The public are accommodated on the main front, which overlooks the sea. This portion of the Post Office is protected by a colonnade. All doors and windows are made to open out flat against the wall. The walls are built with bricks furnished by the Government brickfields, where an excellent brick is now made. The walling, inside and out, is rendered in cement. The ceilings are finished on metal lathing supplied with the steel-construction. The cornice moulds and bases are run locally. The floors are tiled where wood block is not used. All joinery will be in Troho, and it is made locally. Mr. E. Carrington Hanson, A.R.I.B.A., of the Public Works Department, is the architect. The work is being carried out departmentally, under the supervision of the Director of Public Works.

CHIPS.

The Local Government Board have given authority to the corporation of Halifax to prepare a further town-planning scheme under the Housing and Town-Planning Act, 1909 The scheme now authorised to be prepared will relate to an area of about 655 acres, situate in the Bradshaw district of the county borough.

The existing part of St. Joseph's Roman Catholic Church, Maidenhead, was built in 1884, and has long been too small. The work of completing the church has been begun from designs furnished by Mr. Leonard Stokes. The additions include the lengthening of the nave and the building of transepts, sanctuary, sacristy, and a square tower.

At the meeting of the Liverpool council, the question of the advisability or otherwise of purchasing for £76,000 a site in Love-lane for the erection thereon of a public abattoir was considered for the third time. A long discussion terminated in the rejection of the proposal by 56 votes to 38. Objection was raised again to the unhealthiness of the position, as well as to the expensiveness of the scheme, especially having regard to the uncertainty whether the meat trade would be regained from Birkenhead.

The Board of Agriculture and Fisheries are desirous of obtaining information upon the subject of the erection of rural cottages for labourers and others. They will be grateful if any landowners or local authorities who have recently erected such cottages will furnish them with particulars of the cost and the results of their enterprises, both financially and otherwise. Communications should be addressed to the Secretary, Board of Agriculture and Fisheries, 4, Whitehall-place, London, S.W., and need not be stamped.

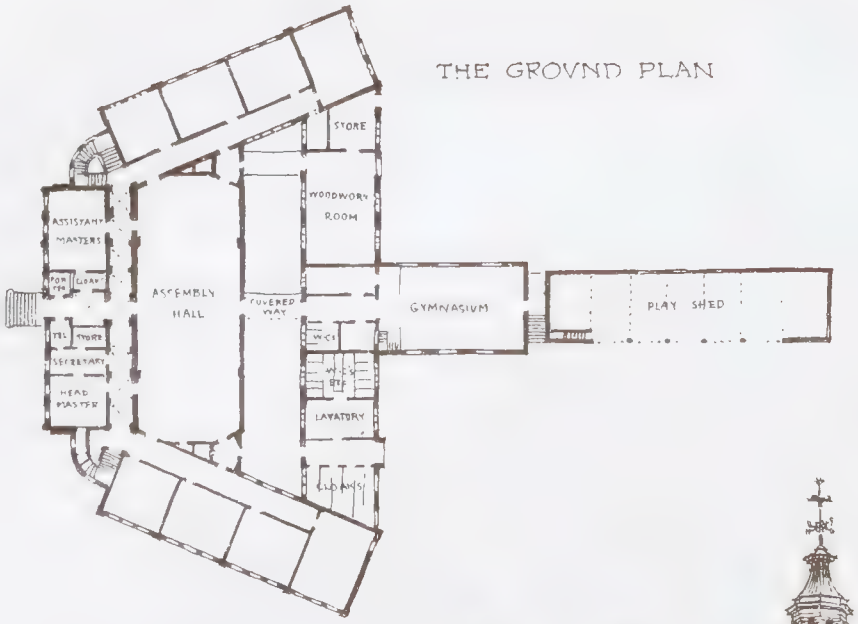
The new church of St. James, Watford, was consecrated by the Bishop of St. Albans last week. It consists at present of a nave and aisles only, and is Romanesque in style. The main walls are constructed of London stock brickwork, with colours and textures selected for the external and internal dressings and facings, the joints in the brickwork on the interior being raked out and left unpointed. The floor is of wood blocks. This section of the church has cost £4,000. The present chancel is a portion of the temporary iron church. The permanent chancel will cost another £1,000. The present section has been erected by Messrs. Brightman and Son, of Watford. The architect is Mr. A. M. Durrant, A.R.I.B.A., of Southampton-street, Strand, W.C.





NEW BUILDING, MILLBANK, WESTMINSTER, FOR THE BRITISH AMERICAN TOBACCO COMPANY, LIMITED.
Messrs. GORDON and GUNTON, Architects.

THE GROUND PLAN



FIRST FLOOR PLAN

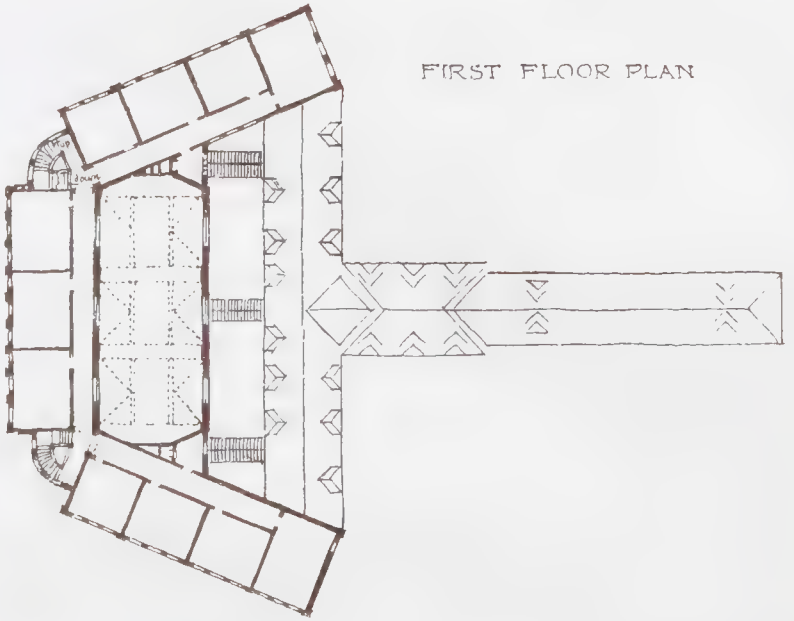


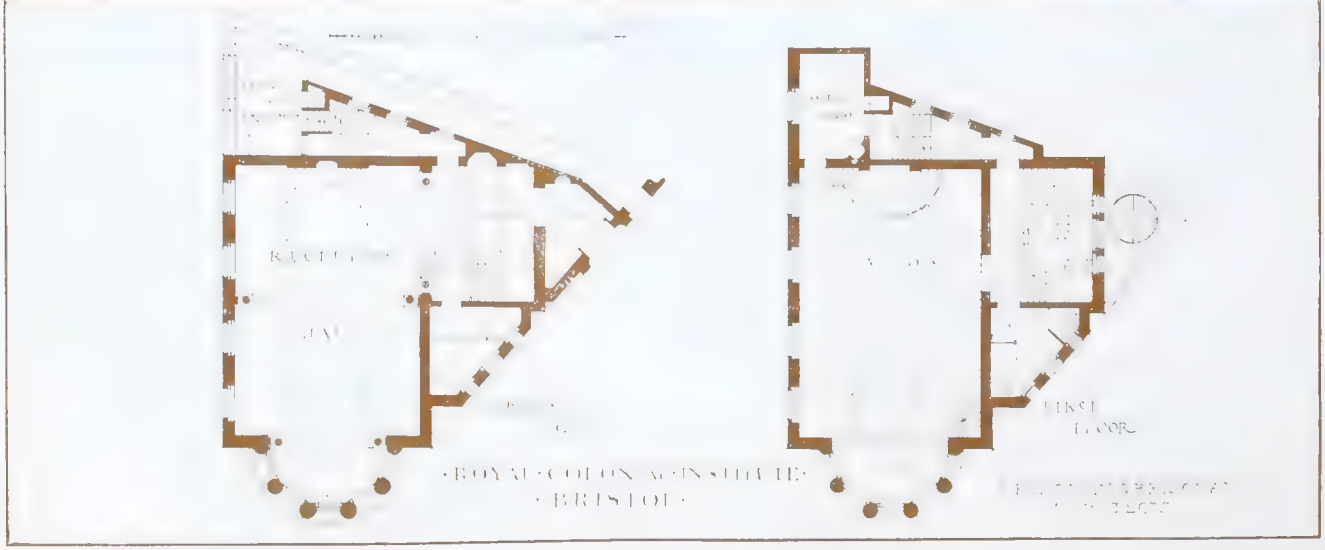




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MR S B RUSSELL, F.R.I.B.A. ARCHITECT.

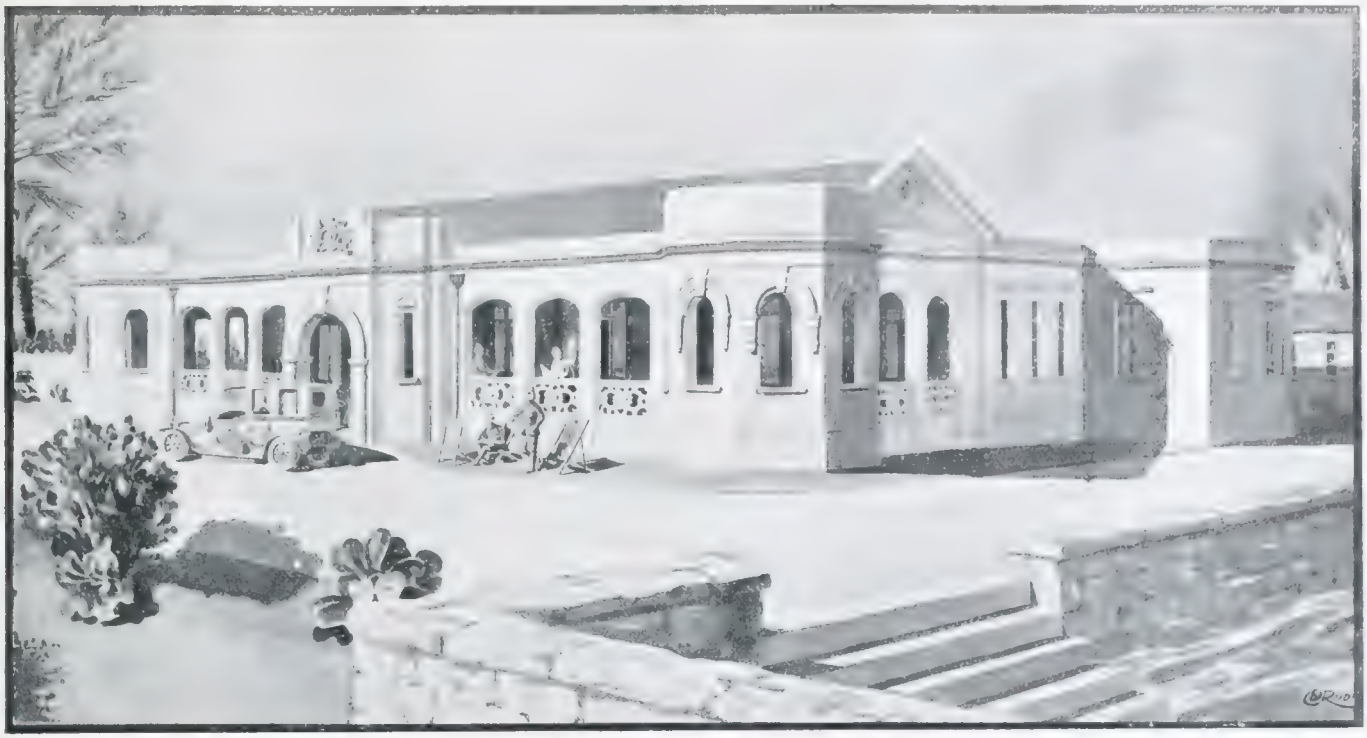


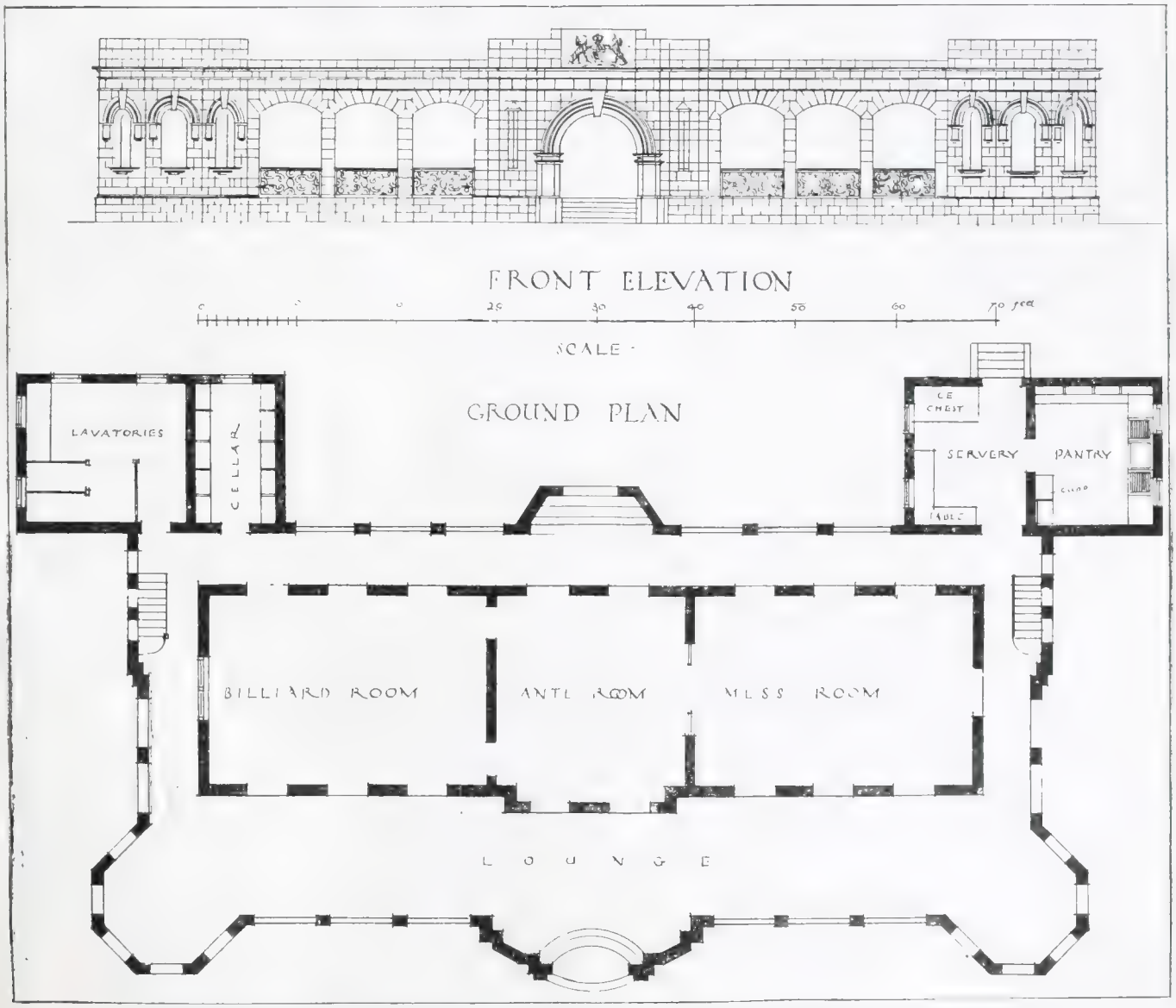


ROYAL COLONIAL INSTITUTE, BRISTOL.—Messrs. BRIDGMAN and BRIDGMAN, Architects.



THE PARSONAGE FARM, SHIPTON UNDER-WYCHWOOD, OXFORDSHIRE. Mr. OSWALD P. MILNE, Architect.





THE OFFICERS' MESS, WEST AFRICAN FIELD FORCE, LAGOS, WEST AFRICA.
Mr. E. Carrington Hanson, A.R.I.B.A., Architect.

Intercommunication.

QUESTIONS.

[13129.]—WEEPING OF WATER INTO BASEMENT. In consequence of a new drainage system having been put into a low-lying country town, and the jointing of all pipes made quite water-tight instead of the open-jointed system which existed previously, and which carried away both drainage and sub-soil water the sub-soil has become much more water-logged, affecting the cellars and basements, and a large basement which was water-tight before the new drainage system was put in has developed some very slight weepings of water in places, which necessitates the pumping out of a few gallons of water daily, causing trouble and inconvenience. The basement in question forms part of large new business premises, which were built about ten years ago, and the whole area of the basement portion has a bed of excellent cement concrete 18in. thick, going well under the walling, and the walls, which are 18in. thick, are built of excellent impervious bricks, set in, and grouted in cement, every course. The face of the concrete was well rendered with a ¾in. floating of cement, and sharp, washed sand, finished with ¼in. of best asphalte, laid by one of the best London firms, and the walls were floated up to above water-level with cement and sharp, washed sand ¾in. thick; the slight weeping is principally in the angle of walls and floor. I wish to know if any of your readers can recommend a very quick-setting cement, or other material which would not be affected by the slight weeping whilst it is being used, and that would set sufficiently hard to cure the trouble?—A Subscriber to your Paper for more than 40 Years.

The foundation stone of a new block of buildings to St. Anne's College, Abbots Bromley, has been formally laid. The estimated cost is £8,500.

The Local Government Board has acceded to the application of the Paddington Borough Council for power to acquire The Lodge site in Porchester-road at a cost of £20,000 for the purpose of erecting thereon public baths.

At Hull on Friday a statue was erected by public subscription to the memory of the late Mr. Charles Henry Wilson, First Baron Nunburnholme, who died in 1907, after serving the city in Parliament for 32 years. He was chief proprietor of the Wilson line of steamships.

New police barracks and headquarters in Great Brunswick-street and Townsend-street, Dublin, are in course of erection from plans by Mr. Andrew Robinson, M.V.O. The walls are built of County Dublin granite with Ballyknocken granite dressings. The builders are Messrs. J. and R. Thompson, of Fairview, Dublin.

Devonport Town Council decided, at their meeting on Thursday in last week, to apply to the Local Government Board for permission to borrow £105,000 for the erection of the projected municipal buildings. An amendment that the matter be deferred until December received the support of not more than three members of the council.

The Brighton Town Council have decided, by a large majority, to purchase twenty acres of land adjoining the new Brighton Grammar School (illustrated in our photolithographic pages this week), at a cost of £18,000, for the purpose of playing-fields. A scheme for the erection of a concert-hall at the Aquarium, at the western end of the site, has also been approved, subject to the removal of the prohibition in the Act of Parliament against erecting any building higher than the footpath of the Marine-parade.

In Volume II. of the report on the Twelfth Census of Scotland, issued on Tuesday, housing conditions are dealt with in detail, and it is shown that of the population of Scotland 2,077,277, or 43.6 per cent., are living more than two in a room; 1,005,991, or 21.2 per cent., more than three in a room; and 397,262, or 8.3 per cent. more than four in a room. Comparison with the figures of the earlier censuses demonstrates that the proportion of the population living in the less crowded conditions has increased, and the proportion living in the more crowded conditions has decreased.

The crypt of the Church of St. Clemente, at Rome, which, since 1870, has been inaccessible on account of the subsoil water, with which it has been filled, has now been drained at a cost of £2,800, borne by Cardinal O'Connell, of Boston, Mass. The plans have been prepared by Mr. C. A. Mills, a C.E. of Rome, who has also supervised operations. The drain is 6ft. high, and 2ft. 6in. broad, and will be, when finished, 600yds. long, of which 400yds. have been completed. It starts from the old Roman drain, which passes round the Colosseum, and it proceeds at a depth of 40ft. below the two modern main sewers of that district. It is hoped that the Oratory of St. Clemente, after 43 years, may be once more opened to the public on St. Clement's day, November 23.

LEGAL INTELLIGENCE.

INCREMENT VALUE DUTY ON BUILDERS' PROFITS.—Lumsden v. Inland Revenue Commissioners.—In the Court of Appeal, on Thursday in last week, judgment was given by the Master of the Rolls and Lords Justices Kennedy and Swinfen Eady in this appeal from a decision by Mr. Justice Horridge on January 13 of this year, on a special case stated by a referee under the Finance Act, 1909-10. The appeal was heard on June 25 (see report in our issue of June 27, p. 910), when their Lordships took time to consider their decision. They now delivered judgment, dismissing the appeal, with costs, Lord Justice Swinfen Eady dissenting. As stated in the appeal, it appeared that Mr. J. R. Lumsden had been assessed to increment value duty under Sections I. and II. of the Act in respect of a dwelling house and shop, No 32, Lansdowne-road, Forest Hill, Northumberland, and a gross duty of £25 was charged in respect of an alleged gross increment value of £125. Notice of appeal against that assessment was given by Mr. Lumsden. The "occasion" on which the duty was alleged to have become payable was a sale on August 23, 1910, by Mrs. Lumsden, of the fee simple of the dwelling-house and shop to a buyer, who took possession for the purpose of carrying on a business in the shop. The sale was of the property subject to the burden of tithe, which tithe was referred to in the provisional valuation as of the capital value or burden of £33. On February 9, 1911, the dwelling-house and shop were provisionally valued under the Act as at April 30, 1909, and this valuation was accepted, owing to Mr. Lumsden raising no objection within the time prescribed by the Act. The valuation showed the original assessable site value as £105. The consideration for the transfer on sale on the "occasion" giving rise to the claim was £750. At the time of the sale the fee simple of the property, if sold in the market by a willing seller in its then condition, free from encumbrances and from any burden, charge, or restraint other than rates or taxes, might have been expected to realise £658. It was admitted that there had been no variation in the full site value between April 30, 1909, and August 23, 1910, and that that value was £228 on each date. It was also admitted that £90 represented the amount of deduction for roads to be made under Section 25 (4) (b) from the total value to arrive at the assessable site value. The capital value of the tithe was admitted to be £33. On behalf of the appellant, it was contended that the increment value was either (1) the difference between the original assessable site value of £105, fixed by the provisional valuation, and the assessable site value on the occasion of the sale, which in the present case was to be taken to be the value of the consideration for the transfer on the sale to a Mrs. Stobie, subject to the like reductions as were made under the general provisions of Part I. of the Act as to valuation for the purpose of arriving at the site value of the land from the total value, or (2) the difference between the original site value of £228 and the admitted full site value of £228 on the present occasion when the increment value was to be collected. For these reasons it was contended before the Referee, on behalf of the appellant, that there was no increment value duty. On behalf of the Commissioners of Inland Revenue, however, it was argued that under Section 2 (1) of the Act, increment value duty was exigible on the difference between £230, the site value on the "occasion," and £105, the original site value of the land as found in the provisional valuation. The Referee dicided that the contention of the appellant was correct, and that he was not liable to pay any increment value duty on the "occasion" in question. From the findings of the Referee the Commissioners of Inland Revenue appealed, and on that appeal Mr. Justice Horridge held that the proper method of calculating the increment value under the Act was to deduct £430, the difference between the full site value (£228) and the gross value (£658), and the allowance of £90, from the purchase price of £750, leaving £230, or an excess of £125 over the original site value of £105, and that therefore increment value duty was payable on the sum of £125. From this decision Mr. Lumsden appealed. Mr. Dankwerts, K.C., and Mr. Allen appeared for the appellant, and the Solicitor-General and Mr. Finlay for the respondents. In giving judgment, the Master of the Rolls said: This appeal raises an important question as to the mode in which increment value is to be ascertained on the occasion of a sale of the fee simple in possession. It involves the consideration of several terms used in Section 25 of the Finance (1909-10) Act, 1910—namely, gross value, full site value, total value, and assessable site value, and perhaps also of original site value. In case of a sale by an owner of land for a price which may be in excess of the gross value, what is to be done? Section 2 sub-section (2) (a), tells you to take the price paid as the starting-point of your calculation, but you are to make "the like deductions as are made under the general provisions of this part of the Act as to valuation for the purpose of arriving at the site value of land from the total value." These words obviously refer to Section 25 (4). The contention on the part of the Crown, which has been adopted by Mr. Justice Horridge, is that you must follow these plain and unambiguous directions. The contention on the part of the appellant, as stated in the special case, is twofold. The increment value is either (a) the difference between the original assessable site value and the assessable site value on the occasion; or (b) the difference between the original full site value and the full site value on the occasion. Neither of these contentions seems to me consistent with the express provisions of the Act. The former, by reason of the words in brackets at the end of Section 25; the latter, by reason of the words in Section 2 and Section 25. But another suggestion deserving careful consideration is made by Lord Justice Swinfen Eady in the judgment which he is about to read. It is that there is no necessity to make, and no justification for making, a new gross value on the occasion, and that when the actual price paid has been ascertained, it is unreasonable to attempt to guess what the land might be expected to realise. I am unable to accept this view. It seems to me inconsistent with the language of the statute. The actual price paid may be either greater or less than would have been reasonably expected. To substitute actual price for "gross value," or "total value," is to effect a complete change in the scheme of the statute. I am aware that the construction which I feel driven to adopt has the effect of taxing builders profits. It is not for me to consider the policy of the Act. My duty—by no means an easy one—is to discover the true effect of the language used by the Legislature in expressing its intention. On this point I quite agree with Mr. Justice Horridge. A further argument was raised upon some words at the end of Section 25:—"Any reference in this Act to site value (other than the reference to the site value of land on an occasion on which increment duty is to be collected) shall be deemed to be a reference to the assessable site value of the land as ascertained in accordance with this Section." It seems to me that the words in brackets expressly refer (inter alia) to Section 2 (2), and negative the idea that "site value" in that Section means "assessable value." There are, however, certain observations in the recent case in the House of Lords of Herbert's Trustees v. Inland Revenue Commissioners, which demand consideration. The question in that case was whether "assessable site value" can be a minus quantity, and it was held that against the Crown a point was made under Section 3 (5), and it was said, How can you give effect to a provision which is intended to give the owner a benefit, in certain circumstances, of a sum equal to 10 per cent. of a minus quantity? And it was argued that therefore the assessable site value must be a positive quantity. The Lord Chancellor dealt with this argument, but with the most profound respect I have not been able to fully appreciate his view. Lord Atkinson expressed his inability to solve the difficulty which may arise under Section 3 (5). Lords Shaw and Moulton thought the difficulty might be solved by referring to the words in brackets as justifying the view that "site value" in section 3 (5) means full site value and not assessable site value. I feel bound to exercise my own judgment, and to hold that there is nothing in this fresh point in favour of the appellant. The appeal must be dismissed.—Lord Justice Kennedy: This case has arisen as to the application of Sections 2 and 25 of the Finance (1909-10) Act, 1910, to a set of facts stated by a Referee in the form of a special case. It is of the first importance that, in seeking the solution, one should adhere to the principle stated by the Lord Chancellor early in the course of his judgment in the recent case of "Herbert's Trustees v. Inland Revenue Commissioners." I conceive that this Court is not entitled, because the statute in Section 2 (2) (a) directs us to ascertain the site value on the occasion by making certain deductions from the sale price, to substitute, in ascertaining the amount of these deductions in accordance with Section 25 (4), the sale price for the gross value which is expressly prescribed in Section 25 (4) (a) as an element in the process. We are not at liberty to depart from the directions of the statute, or from the figures stated in the special case. In my opinion this appeal must be dismissed.—Lord Justice Swinfen Eady, dissenting, remarked: By Section 2, sub-section 2 (a) in order to ascertain "the site value on occasion," when the occasion is a transfer on sale of the fee simple, as in the present case, you start with the value of the consideration for the transfer. From this amount you are to make certain deductions; and

these are to be "the like deductions" as are made under the general provisions of this part of the Act as to valuation for the purpose of arriving at the site value of land from the total value. Section 25, sub-section 4, provides for the deductions which are to be made from the total value for the purpose of arriving at the "assessable" site value, and by the last paragraph of that sub-section, any reference in the Act to site value means the assessable site as ascertained in accordance with Section 25, unless such meaning is excluded by the words within brackets in the last paragraph. Section 26 (1) provides that a valuation of all land in the United Kingdom is to be made, and the value is to be estimated as on April 30, 1909. When once the assessable site value or original site value has been fixed as of that date, it has been so fixed once for all, and remains a constant quantity. "The like deductions" which are directed to be made by Section 2 (2) are therefore like deductions to those which are directed to be made from total value for the purpose of arriving at "assessable" site value, unless such meaning is excluded by the words between brackets in the last paragraph of 25 (4). In my opinion, the proper construction of the words between brackets is—that they should be read as meaning other than "site value on occasion"; in other words, that any reference to "site value" means to "assessable site value," unless the context shows that "site value on occasion" is referred to. I therefore construe Section 2 (2) as containing a direction to make the like deductions from the value of the consideration for the transfer as are made under Section 25 (4) from total value for the purpose of arriving at assessable site value. It will be observed that the direction is to make "the like deductions" and not "the same deductions." The deductions are those specified in Section 25, sub-section 4, Clauses (*a*) (*b*) (*c*) (*d*) and (*e*), or such of them as may be applicable. After making these deductions from "the value of the consideration for the transfer," the remainder of this consideration is "the site value on occasion," upon which increment value duty is payable, so far as it exceeds the original site value. This, in my opinion, is the true construction of the statute. There is no difficulty in carrying out its provisions on this construction; whenever the site value on occasion exceeds the original site value, the amount of the increment is ascertained, and duty at the rate of £1 for every complete £5 of the increment value is payable upon it, subject to the reduction allowed under Section 3, sub-section 5. The special case states that there was no variation in the "full site value" between April 30, 1909, and August 23, 1910, and that the value was £228 on each date. It was also admitted that £90 represented the amount of deduction for roads to be made under Section 25 (4) (*b*), and that the capital value of the tithe was admitted to be £33. On these figures, which are identical on each of the two occasions to be compared, there is and can be no real difference between present and past site value. This difficulty is not met by saying that, in this case, the "full site value" happens to be the same at each date; but this is merely accidental; because it is, in this case, where the "full site value" is the same at both the material dates that an increased site value of £125 is claimed. The real crux of the matter lies in the contention that the direction to make "the like deductions" from the "consideration for the transfer" involves a direction to arrive at a gross value of land on the occasion of a sale. The amount by which the "consideration for the transfer" exceeds this gross value, from whatever cause the excess in price may arise, is then said to be increment in site value. The statute does not contain any direction to arive at a gross value of land on the occasion of sale, and the value of the divested site can be arrived at without doing so. The problem is this. On the basis of a given figure of value, what would be the value if divested of all structures and growing things? The problem is the same, whether the given figure is the consideration on sale, or an estimated gross value. Moreover, although for the purpose of the original valuation of all the land in the kingdom it was necessary to arrive at a figure of gross value, by estimation, it is quite a different matter to require it to be done on every sale which takes place, and when the consideration for the same is known. It seems strangely anomalous to require after a sale an ex post facto valuation of what the land might (erroneously) have been expected to realise. I say erroneously, as, unless the sum to be arrived at differs from the sum actually realised, there is no object in obtaining the valuation. Moreover, the defect of this method is to attribute the whole difference between actual price realised and what the land was expected to realise to an increase in site value. In the case under appeal, the alleged increment in site value is really obtained in the following manner:—The land, subject to a charge of £33 for tithe, was sold for £750; it was only "expected to realise" £658, if free from tithe; therefore there is a gain of the difference between £750 and £658, or £92 and the £33 tithe or £125 in all. This is claimed as "increment in site value," although the full site value has remained the same, and the whole increment entirely depends on such figure as the valuer may fix upon as a new gross value. Full effect can be given to make the "like deductions" by starting with "the consideration for the transfer," and making the deduction from this amount—that is, such deduction as is necessary to ascertain the divested value. The fact that the full site value was the same on each occasion, and the deductions for tithe and for works and capital expenditure the same, negatives any increment in site value, and the process by which an apparent increment was obtained—namely, estimating what the property, if then sold free from encumbrances, might have been expected to realise, deducting this from the consideration for the transfer, and claiming the difference as an increment in the site value, is one not authorised by the statute. I can find no justification in the statute for the contention that wherever the price realised is greater than would have been reasonably expected the whole of the excess in price is to be deemed to be an increment in site value. I have only to construe the statute by the language used. I am of opinion that the appeal should be allowed, and that the special case should be answered by saying that the appellant was not liable to pay any increment value duty on the occasion in question. The appeal was therefore, by a majority of the Court, dismissed, with costs. The Master of the Rolls informed Mr. Danckwerts, K.C., that, if necessary, he would give leave to appeal.

THE LONDON BUILDING ACT AND WOODEN HOUSES IN GARDENS.—At Greenwich police-court on Friday Messrs. G. Hayward and Co., of Crofton Park, appeared to a summons charging them with erecting a building at the rear of a house in Tressillian-road, Brockley, without giving the notice required by the Building Act. Mr. Baxter Greig, A.R.I.B.A., district surveyor for Deptford, prosecuted, and quoted a case in which a wooden structure on wheels, used as a butcher's shop fronting the street, had been held to be a building requiring notice, saying that the judge expressed the opinion that the wheels had been put on to evade the Act. The defendants contended that no notice was necessary. The erection was carried on wheels, was 9ft. by 12ft., and was placed in the garden, furnished as a bedroom with two beds. Mr. Chapman decided, with some reluctance, that notice ought to have been given. He thought the building was intended for use as a dwelling-house and was not exempt. The use of wheels was immaterial. He would not record a conviction, but the defendants must pay 23s. costs. He would grant a case if the defendants desired him to do so.

LORD DECIES AND HIS ARCHITECT AND BUILDERS.—In the King's Bench Division on Thursday, July 31, Mr. Justice Bailhache, sitting without a jury, concluded the hearing of a dispute between Messrs. Holland, Hannen, and Cubitt, Ltd., builders, of Gray's Inn-road, and Lord Decies, the latter counter-claiming against the builders, and Mr. Horace Farquharson, an architect, and Messrs. Evill and Morle, quantity surveyors. The case related to extensive work done to Lord Decies' house at Sefton Park, about the time when he was married in America, the builders' bill being disputed in part on the ground that some of the things done were subject to complaint. The facts sufficiently appear from the following judgment:—His lordship said the circumstances out of which this litigation arose were that in December, 1910, Lord Decies, being on the point of getting married to a lady in America, was desirous of having certain very extensive alterations done to his house at Sefton Park. The alteration involved the reconstruction and practically the pulling down and rebuilding of the dining-room, drawing-room, boudoir, and smoking-room, and the reconstruction of the hall, a bedroom, bathroom, etc. He got into communication with Mr. Farquharson, who submitted certain plans to Lord Decies, which, in the short time that Lord Decies had at his disposal, commended themselves favourably to him. Mr. Farquharson, at the same time, or shortly after, on July 6, 1911, made a report to Lord Decies, in which he estimated the cost of the work at from £8,000 to £10,000. At that time it was intended that the work should be done and finished off plainly, and without ornamentation. Lord Decies went to America, and the work was put in hand, and Lord Decies, so far as he was concerned, and while he was absent in America, was represented by his solicitor, Mr. Anderson, who was empowered to, and did, sign a contract on his behalf, which was dated February 9, 1911. In the meantime, Mr. Farquharson and Messrs. Evill and Morle (quantity surveyors) had been busy with the builders (Messrs. Holland, Hannen, and Cubitt) preparing a schedule of prices. The work was to be done not according to specification, nor for a lump sum, but according to a schedule of prices. That schedule of prices, together with the contract and the plans, formed the contractural documents in this case. Lord Decies went to America. He sent some instructions while he was there, and in April or thereabouts he returned to England with Lady Decies, to whom in the mean time he had been married. When he returned with his wife, they determined that they would have considerable ornamentation done in addition to the plain work which Lord Decies had had in mind before he departed to America, and in particular they decided that they would have a great quantity of oak panelling in the drawing-room and hall, and they went to South Kensington to see some samples of oak-panelling there. They selected some they desired to have, and that panelling was directed to be put into this house, and was afterwards put there. The result of this ornamentation was that the original estimate was very considerably exceeded. The architect did not inform Lord Decies what the extra cost was likely to be, and Lord Decies had apparently no very clear idea upon the matter. "The architect's view, and the view upon which he acted," continued his Lordship, "was that money was not much of an object, and he seems to have consistently acted on that view throughout the whole of the proceedings. What was present to his mind, and what must be present to my mind in deciding this case, was that time was of great consequence, and everything had to be done in the shortest possible time, so that this house might be ready at the earlist possible moment for habitation by Lord and Lady Decies. On July 27, 1911, Mr. Farquharson had got in most of the builders' bills, and so on, and they came then to about £17,000. He communicated this fact to Lord Decies and his advisers, and that was the first time that the much larger sum which is the subject of this action was brought forward. Nothing appears to have been said very much about it at the time; but Lord Decies handed the matter over to Mr. Anderson (his solicitor), and Mr. Anderson pursued somewhat leisurely inquiries into this bill, and into the large and very surprising amount of it, with the result that, at the end of the year 1911, a Mr. Addis, who figures as a witness in this case, and very prominently, was instructed by Mr. Anderson to go thoroughly into the whole matter, and advise Lord Decies as to whether he was getting good value for his money. The £17,000, in the mean time, had increased to over £18,000, and it now, in this action, appears as a sum of practically £20,000. Mr. Addis, who was a quantity surveyor, started his work early in January. He began to make inquiries, which afterwards became very exhaustive, and in April, 1912, he sent in a report to Mr. Anderson, in which he reported that, as far as his inquiries then went, he thought the value of the work, not on the schedule prices, but on prices which he considered fair and reasonable, was somewhere about £13,500. He reported favourably on the work as a whole, but called attention to one or two minor matters which, in his opinion, required seeing to. Lord Decies had paid somewhere about £13,000 on account of this work, and was unwilling to pay the remainder until Mr. Addis's inquiries were completed. Before Mr. Addis's report, the builders had become impatient, and in February, 1912, they issued a writ for £19,920, giving credit for the £13,000 paid on account, and £500 retention money, and they claimed a balance of £6,420 12s. They were pressing Mr. Farquharson to give them a certificate that that amount was due under the contract. Mr. Anderson, on the other hand, was telling Mr. Farquharson that he was not to give his certificate until the investigations were complete; but Mr. Farquharson yielded to the request of the builders, and gave them a certificate for that sum. An attempt was made to obtain judgment under what is known as Order 14—an attempt which must obviously have been known to be foredoomed to failure. The action went on, and came before me in November of last year, coming before me then on a preliminary point as to deduced prices. I decided that question then in favour of the builders. There were many questions left outstanding which, at that time, it was thought would go to arbitration, the case being one obviously for arbitration or reference, and not a class of case which one ordinarily tried in open Court in the High Court. Circumstances arose afterwards which seem to make it desirable that considerable amendment of the pleadings should take place, and that the

case should be tried by a Judge and, as the parties arranged, tried before me. Without going into the alterations and amendments of pleadings in detail, they in substance amounted to this: Mr. Farquharson and Messrs. Evill and Morle were to be brought into the action, and that, as against them, there were to be allegations of collusion with the builders, and fraud, and also allegations of negligence. So the matter went on, and, after a great many interlocutory proceedings, the matter came on, and began to be tried before me about a fortnight ago. In the course of these proceedings, very voluminous particulars were delivered by Lord Decies in January, 1913, and so far as the details of the case are concerned, it is these particulars with which we have chiefly to deal. So far as the builders were concerned, the case resolved itself into this: That there were allegations of fraud against them in respect of certain vouchers and accounts; there were allegations against them of bad work, allegations that work was charged for and not done, and there were claims to put right things which, in the course of the work, had been wrongly done. So far as the architect was concerned, there were allegations of fraud and collusion against him in this respect, really that he had passed work which was obviously bad. There was also an allegation of fraudulent representation in the report; but these allegations of fraud against the architect could not be sustained and they have dropped out of the action so far as the action is concerned. It is only right of me in my judgment to say that there is not, and never was, any foundation at all for those charges of fraud and collusion. Similar charges were made on somewhat different grounds against Messrs. Evill and Morle, and in regard to them I have also to say the same thing, and I am quite satisfied that for those charges there is not the slightest shadow of foundation. The allegations of negligence against the architect, and quantity surveyor stand on a different footing, and I will deal with them in due course. The architect made his report to Lord Decies on January 6, 1911, and in that report he gives a general statement of the kind of work proposed to be done. He goes on to say this: 'As to the business side of the matter, in order to get the best work done in the shortest time, I propose employing a first-class firm, such as Messrs. Holland, Hannen, and Cubitt, of Gray's Inn-road, whose standing is of the highest. I suggest that the work be done on schedule prices.'" Proceeding, his Lordship said the architect estimated that the cost of the work would be from £8,000 to £10,000. The charge of misrepresentation in regard to his fee was absolutely absurd. Mr. Farquharson said that he would go into the prices very carefully, and when the work started it would be measured up by him or by his surveyor from week to week, the builder to be paid accordingly. The truth of the matter was that Mr. Farquharson did not go into the prices very carefully or at all. He left the question of prices to be settled between the quantity surveyor and the builders. Moreover, although he said that the work was to be measured by him or by his surveyor from week to week, and the builder paid accordingly, he took no steps to see that the work was measured up week by week, and the builder was not paid accordingly. These were statements which obviously ought not to have been made. There never was any excuse or any real justification for making a statement which was not true, and these statements were untrue and misleading. His Lordship said he did not want to press this too hardly. The report was got up somewhat hastily, and presented to Lord Decies before he left. It was a report of a man who was honourably anxious to get a big job of this kind, and therefore he (the Judge) would make considerable allowances for the report. At the same time, the statement that the surveyor would measure up from week to week, and the builder be paid up accordingly, was a statement which had a very important bearing on the case, and he very much regretted that that statement of Mr. Farquharson's intention was not carried out. If it had been carried out, he could not help thinking that a great deal of trouble in this case would have been avoided. Following upon that report, a schedule of prices was agreed which contained, among other things, a provision in regard to night work. The charges in this connection were to be on the basis that every ten hours' work was to be treated as equivalent to 18 hours' day work, and special prices were arranged in regard to measured work done at night. His Lordship thought that the clause relating to extra work done at night was inserted after the contract was signed, and that it did not support the charge made in the bill on the basis of 18 hours' paid for 10 hours' work. "The work," the Judge went on to say, "was put in hand at the end of January, and the first week's work ended on February 3. The work was under the charge of a man named Turner, who was the general foreman and superintendent, and it was his duty first of all to keep a book, which he did, in which he entered all the men who were working, the number of hours they worked, and the wages they earned. It was his duty, further, to make out a pay-sheet, which was for the information of his employers (the builders), and it contained the same information as his own little book, with the addition of a very general and rough necessarily general and rough description of the kind of work the men were engaged upon. That was the sheet which he made out for the builders, who were also under an obligation to make out day-sheets or vouchers to send on to the architect or the quantity surveyor. These day sheets were made out first of all in this way. The foreman made them out on the job, getting materials from his little book, and he made his descriptions of the work that was being done, the number of men employed, and the number of hours worked, and, of course, obviously all that corresponded with the number of men employed, and the number of hours worked as represented in the pay sheets. These day sheets were sent by the foreman to the builders in Grays Inn-road, where they reached what was called the surveyors' department there. It was the duty of those in the surveyors' department to make out vouchers, which, in turn, were sent to the architect or the quantity surveyor, and these vouchers purported to represent exactly the number of men who were employed, the names of the men, the hours they worked, and the wages paid. That is to say, not the wages actually paid by the builders, but the wages actually paid, plus, in each case, the profit which the builders were entitled to charge in respect to the wages so paid. In the very early history of this case, a most unfortunate incident happened. The case started inauspiciously with the report of Mr. Farquharson, and it had not gone on long before a worse disaster befell it. The foreman on the job, of course, had no accurate knowledge at all of the work done in the yard, and the gentleman at the builders' who was over the foreman, and had charge of this work, and in whose department the work was being carried on there, was a Mr. Donovan, who was a perfectly competent and honest man. Mr. Donovan, knowing that there were these yard charges, gave some instructions to Turner with reference to them. There is some doubt as to what the precise instructions were. Turner says the instructions were: 'Put upon your day-sheets something to cover yard charges.' But Mr. Donovan says that that was not quite so. What he says he told Turner was: 'Put a note upon your day-sheets that there are yard charges to be covered.' Whatever the instructions were, they were given during the first week, and when the first day-sheet was sent up to the surveyors' office, Mr. Donovan noticed that there was nothing upon it in respect of yard charges. He thereupon instructed the superintending clerk in the surveyors' office to send the sheet back to be altered as directed. What Mr. Turner (the foreman) did is quite clear. Having this sheet back, he proceeded to invent the names of carpenters, bricklayers, and labourers, and to put down these fictitious people as working, of course, for a certain number of hours. This sheet came back to the surveyors' office, and there, apparently, without any further question, it passed muster, and was copied on to the voucher, and was sent forward to Mr. Farquharson or to Messrs. Evill and Morle as truly representing the wages paid and the hours worked at Sefton Park. The working foreman was inserted as a carpenter that might have been done from some misdirection, and the timekeeper was also inserted as a workman; but the serious matter is the matter to which I have already referred. There is no doubt that that was a fraud no doubt at all; and Mr. Leslie Scott, K.C., said—and, I think, truly said—that it was a fraud of the worst kind. In matters of business there is, in my opinion, no worse fraud than the falsification of books. Turner was made a party to this fraud acting on instructions he had, or thought he had. It is no part of my duty, fortunately, to ascertain with precision where the fraud originated, or what the precise instructions to Mr. Donovan were, because there is no doubt that, however the fraud originated, the builders are responsible in damages for any damage that results from that fraud so carried out. I only desire to say at the earliest possible moment I have had of saying anything about it that I am quite satisfied that Mr. Hannen, one of the members of the firm, was himself absolutely and entirely ignorant of the fraud and quite innocent of it." His Lordship added that the work was done, and the final bill came to some £20,000. This sum was proved to be a very startling one, and one could well understand that Lord Decies, having embarked upon alterations which were anticipated to cost from £8,000 to £10,000, was startled to have a bill for £20,000, notwithstanding the fact that he had ordered very extensive ornamentation, which he must have known would largely increase the original estimate. The matter had been inquired into from every conceivable standpoint, and with a minuteness of detail which exceeded any case in which he (the Judge) had had any experience. He thought it was very much to be regretted that Lord Decies' advisers should not have pruned down the report of Mr. Addis as to things of which complaint was made, and have eliminated things of no consequence or of no serious consequence. On the question of night-work and measure-work charges, he was in Lord Decies's favour, and in regard to another matter he had come to the conclusion that the overwhelming balance of evidence in the case was in favour of the quality and fixing of the oak panelling. In that respect he made no allowance. There was a very serious complaint, and, in his opinion, the worst thing that was the matter with the house was that certain sounds from upstairs penetrated to the rooms below, and vice versa. The worst of those sounds was that when the plug in the W.C. was pulled, the noise was heard in the drawing-room, and in some of the other rooms downstairs. That, of course, was a very great and almost intolerable nuisance, and he sympathised with Lord Decies in his desire to have that remedied at the expense of either the architect or the builders; but he was unable to yield to that sympathy, because he was satisfied upon the evidence that, bad as the noise was, Mr. Farquharson, in the precautions that he took, had not fallen below the average standard of skill which one would have a right to expect from an architect designing a house of this kind. Another serious defect in the house was the actual vibration of certain floors, and in that respect Lord Decies would have the relief to which he was entitled. Translating his judgment into pounds, shillings, and pence, the Judge said he had decided that Lord Decies was entitled to recover on his counterclaim £5,121 5s. 7d. In regard to Mr. Farquharson, his Lordship said he had used the word negligence in its legal sense only, and there would be judgment against him for £50. There would be a rebate from Mr. Farquharson's fees of £300, that being in respect of part of the £5,121 that represented work not done, or things of that nature. Judgment would therefore be against Mr. Farquharson for £350, if he had been paid his fees, and if he had not been paid his fees it would be a matter of account. So far as Mr. Morle was concerned, he had come to the conclusion that, upon the whole, that gentleman did not give Lord Decies the protection which Lord Decies was entitled to expect from a quantity surveyor. He was not in the least degree fraudulent, and was not in the least degree collusive; he was really overawed by the name of the builders, and could not imagine that anything done by that firm could possibly be bad. His Lordship added that he would be very sorry indeed if anything that happened in this case affected the future career of either Mr. Donovan, Mr. Turner, or a Mr. Smethers, who had also been mentioned. The Judge also paid a compliment to the architect upon the designing of the house, and said he thought it did Mr. Farquharson the very greatest credit. Judgment was entered for the builders for £7,035, his Lordship mentioning that he was taking into account the retention money. The costs of the action would be the builders'; but the heavy costs had been incurred on the counterclaim, and the builders must pay those. Mr. Farquharson would pay so much of those costs—he hoped a very small amount—as were attributable to him, subject to this: that he would be entitled to be allowed, and to be paid all such costs as were attributable to the charges of collusion and fraud. So far as Mr. Morle was concerned, he had given no damages against him, for the reason that wherever he, by slackness or oversight, had gone wrong, he (the Judge) had taken that into account against the builders. He thought the most satisfactory thing would be that Mr. Morle should pay his own costs, and nobody else's. It was intimated that the case might be taken to the Court of Appeal.

FATALITIES DUE TO COLLAPSE OF STAGING.—An inquest was held on Tuesday into the death of the three men who fell some 80ft., owing to the collapse of the staging on which they were at work painting the sides of the gasometer at the West Ham Gas Works, on Friday last. The victims were Frederick Charles Keeling, twenty-seven, of Bridge-road, Stratford; Charles Richard Quate Smith, twenty-three, of Napier-road, West Ham; and Charles Edward Minns, twenty-nine, of Priory-street, Bromley-by-Bow. Percy Edgar Beaumont, contractor, of Bromley-by-Bow, said the three men were working on a staging which consisted of a plank 11in. wide, 3in. deep, and about 20ft. long. It was secured at each end by a 3in. or 3½in. rope, which was capable of holding five

tons He went to the works before the men started, but he did not examine the staging, as an examination had already been made by the porter. A piece of the rope, showing where it had parted, was handed up to the witness, and he said it looked as if it was a pure tear through overstrain. He should say the rope, by the look of it, was bought in 1912. It seemed to have had an overstrain, or terrible jerk, but he failed to see where it could get the jerk while the men were on the staging. It stood the tremendous strain while the staging was pulled up into position. With constant usage a rope would last six months. The firm had been on this kind of work for 20 years, and this was the first accident they had had.—The foreman asked witness how long the rope had been in use.—I should say one season. —The Foreman: More like five years.—Charles Stevens, Burgess-street, Bow, who was in charge of the men, said he examined the ropes, and he could not account for this one breaking. William Marchant, the workman who was with the three other men on the plank and who had a remarkable escape, said he was an old seaman. He thought "dry rot" was the primary cause of the rope breaking. He added that if the rope had been put away wet that would have caused dry rot, and in a rope like that they could not tell if dry rot existed. — William Price, storekeeper to Messrs. Beaumont, said he examined every rope before it was sent out. The rope was guaranteed to carry 10 tons. He agreed that it might have had dry rot in one place, and said that had been caused by coming into contact with some chemicals at the gasworks. He thought the test he used was a good one, and when he passed the rope out on June 30 he quite believed it was sound.—Thomas Stackable, an ex-seaman, of St. Leonard's-road, South Bromley, said that between May 15 and June 24 he overhauled all the ropes for Messrs. Beaumont and condemned several. The piece of rope was handed to the witness, who, on being asked what he thought of it, replied: "Not very good," adding that it seemed to have been used a great deal. He thought it would have been better to have tested it; that at sea they tested ropes, new and old, by putting them round a winch. The jury returned a verdict of accidental death, and found there was negligence on the part of Messrs. Beaumont and Sons for sending out a rotten rope.

BRICKLAYER'S APPEAL DISMISSED BY THE LORDS.—The House of Lords, on Friday, delivered judgment in the case of Godwin (pauper) v. the Lords Commissioners of the Admiralty—an appeal from an order of the Court of Appeal ordering that the appellant's appeal against an award of his Honour Judge Gye, in the Portsmouth County Court, made in an arbitration under the Workmen's Compensation Act, 1906, whereby he dismissed the man's application for arbitration, be dismissed with costs. The appellant was a bricklayer, and had been employed by the Admiralty in that capacity for 20 years. He met with an accident to his hand, and ultimately a finger had to be amputated. The man was informed by the Admiralty that a grant of 3s. 5d. a week had been made to him, in respect of his injuries; but this sum he refused to accept, and by letter demanded further compensation, which was refused. He, however, persisted in his demand, and an offer of an increased allowance of 6s. 9d. per week was offered by the Admiralty. After arbitration proceedings had been begun, the Admiralty offered a further increase, at the rate of 10s. 2d. a week, subject to review after 12 months. The man filed an application for arbitration in the County Court, claiming compensation at the rate of 17s. 3d. a week under the Workmen's Compensation Act. The Admiralty denied that the man's average weekly earnings previous to his injury were correctly stated in his application, and also stated that he had contracted with the Admiralty that the provisions of a duly certified scheme should be substituted for the provisions of the Act, and that they were therefore only liable in accordance with the provisions of that scheme, and that the County Court judge had no jurisdiction to entertain the application. An award was made dismissing the application for arbitration with costs. The man appealed, with the result that his appeal was dismissed with costs, and he thereupon appealed to the House of Lords. Lord Shaw said, after long and anxious consideration, he had come to the conclusion that the judgment of the majority of the court of appeal was right, and this appeal must be dismissed, and he moved their Lordships accordingly. Lords Loreburn, Mersey, and Parker concurred, and the man's appeal was accordingly dismissed.

The Doncaster Corporation, in order to carry out a scheme of street improvement, has purchased the Elephant Hotel, in St. Sepulchre-gate, for £12,000.

Our Office Table.

The four modern stained-glass windows in William of Wykeham's Chapel at Winchester College are about to be replaced in an attempt to get back to the conditions which existed prior to 1821, when the priceless old glass was removed, and the present examples by Evans of Shrewsbury were inserted. The old windows were sent by Warden Huntingford to Shrewsbury for repair; but most of the panels were destroyed or lost in the attempt to make the copies that were substituted. Three of the panels escaped the destruction, and these are now in the Victoria and Albert Museum. A single light, the gift of an old Wykehamist, has been placed in the north window, near the Head Master's stall, for purposes of comparison. The aim has been to reproduce the effect of 15th-Century windows, both in design and colour, and this has led the Warden and Fellows to decide on a restoration throughout the chapel. There are forty-six lights in the north and south walls, and several of these have been promised by old Wykehamists. The cost of each light will be £70. The work is being proceeded with during the holidays, and at the same time the completion of the new oak panelling is being carried out. Mr. Arthur C. Benson and Mr. A. F. G. Leveson Gower, F.S.A., write to the *Times*, expressing their concern at the proposal to remove examples of Evans's glass-staining of ninety years since, and pointing to William Butterfield's deplorable error of judgment during his restoration of the chapel in 1875, when the Jacobean carved woodwork was given to the contractors, and after passing through two or three hands, was sold for nearly £30,000 for the embellishment of a private house near Winchester.

The streets committee of the City Corporation have under consideration a scheme for improving the Cloth Fair area, between Aldersgate-street and Smithfield. If carried out, the cost will be approximately £200,000, while it will remove what is practically the last remaining substantial grouping of Mediæval Domestic architecture. The project is to clear an area extending from Sun-court, Long-lane, Smithfield, to Cloth-street, at the back of the Manchester Hotel. Two blocks of buildings in that area would be demolished, while the buildings in Cloth Fair abutting on to Back-court, adjoining the ancient Church of St. Bartholomew-the-Great, would also be dealt with. Through the two blocks suggested for demolition on the other side of Cloth Fair run the narrowest alleys in the City—Back-passage and East-passage—and these would be built over, while Long-lane, Middle-street, and the eastern portion of Cloth Fair would be materially widened.

There are 329 open- and 73 Oliver-flame arc electric lamps in use in the City. The former cost £26 per annum each, and the latter £17 10s. In addition, there are 21 experimental arc lamps and 45 metallic-filament lamps. Of gas-lamps there are 2,621 in use. The charge for gas is 2s. 2d. per 1,000 cubic feet. The experimental lighting by gas and electricity instituted in the City in 1910 for ascertaining the most suitable form of illuminant is still being continued by the companies. A complete reorganisation of the lighting of the City, whereby the streets, courts, and alleys will be illuminated in about equal proportions by gas and electricity, will (states the City engineer) be completed before the winter.

The 122nd award of certificates at the Crystal Palace School of Practical Engineering was made on Thursday in last week by Mr. William B. Bryan, chief engineer of the Metropolitan Water Board. This was the close of the first term of the forty-first year. Mr. Bryan, in his address, said he was glad to find that the school had furnished as many as 682 students who had entered the various ranks of the Institution of Civil Engineers. Forty of these had attained the rank of Member, and 240 that of Associate Member, and, besides that, many others had joined the great engineering societies. He advised the students that when they got into practice, either on their own account or under others, not to shrink from taking some responsibility, because it was the responsible man who went up the ladder.

MEETINGS FOR THE ENSUING WEEK.

Saturday (To-morrow).—Association of Managers of Sewage Disposal Works. Midland District Meeting at Stratford-on-Avon.

Monday.—Sheffield University Architectural School Tour from Paris to Auteuil, Blois Bourges, and Chartres.

CHIPS.

The Normanton Urban District Council have decided to apply to the Local Government Board for sanction to a loan of £16,475 for the erection of seventy-six houses under the Housing of the Working Classes Act.

At the Vestry Hall, Dawlish, on Tuesday, a Local Government Board inquiry was conducted by Mr. R. H. Bicknell re the application of the urban district council to borrow £2,500 for the purchase and adaptation of the Knowle Estate, situated in Barton-road, for purposes of offices, depot, fire-station, and recreation-ground.

"E. A. C." writes to the *Times*:—"The stifling atmosphere in the Academy of Arts is bad for the health of thousands of visitors. The windows in the roof are very small, and in several rooms there are none at all. Would it not be for the good of all to remedy this crying evil?"

After a long discussion and a division, the city council of Exeter adopted on Tuesday a recommendation of the housing and town-planning committee to erect twelve cottage dwellings on the site of the temporary playground in Commercial-road, at the estimated cost of £2,115.

The urban district council of East and West Molesey adopted in principle, and decided to seek Parliamentary powers for carrying out, a scheme for enhancing the amenities of the Thames-side. The proposal involves the construction of a riverside boulevard, extending a distance of half a mile, from Molesey Lock to the boundary of the parish at Hampton. It is proposed to acquire, voluntarily if possible, but if not, by compulsory powers, a strip of land varying in width from 30ft. to 64ft. adjacent to the towing-path, and commanding a view of one of the most picturesque reaches of the Thames.

Two fine examples of Roman pottery, dating probably from the middle or latter period of the Roman occupation, have been discovered at Eltham by workmen who were digging for a new drain in connection with the building operations on the Corbett estate. The larger of the two vessels, both of which are intact, is a cinerary urn, of a bluish-grey colour, about 9⅛in. in height, 3l¼in. in girth, and 2⅝in. diameter across the mouth. It contained broken and charred bones mixed with yellow sand. The smaller vessel is of red clay, 6in. in height, and 12⅛in. round, the opening, or mouth, being 11-16in. across.

The Road Board have approved Mr. H. Percy Maybury, M.Inst.C.E., who, since 1904, has been the county surveyor of Kent, as chief engineer to the Board. Mr. Maybury's salary was raised by the Kent County Council last year from £1,000 to £1,500 a year, as an inducement for him to withdraw from his candidature for the appointment of chief engineer to the London County Council. Colonel Crompton, R.E., C.B., will continue to act, as he has hitherto done, as consulting engineer. The Board have also added to their engineering advisory committee Mr. E. Purnell Hooley, the county surveyor of Nottinghamshire, and Mr. Alfred Dryland, the county surveyor of Surrey.

A Committee of the House of Lords had under consideration on Wednesday, and again yesterday, the Government Bill for the construction on behalf of the Post Office of an underground tube railway, six miles and a half long, from the District Post Office, near Paddington Station, to the Eastern District Office, Mile End-road, Stepney, running from Paddington to a point near the British Museum, then going north to Mount Pleasant, then south again to the General Post Office, and finally east to Liverpool-street Station and Stepney. One of the tube stations is to be under Liverpool-street terminus, but all the others are to be under post-offices. The estimated outlay is £1,000,000. The committee adopted a clause giving compensation where the railway passes beneath the cellars or vaults of house. The Bill has already been passed by the House of Commons.

TRADE NOTES.

Under the direction of Mr. I. P. Davies, architect, Ebbw Vale, the "Boyle" system of ventilation (natural), embracing Boyle's' latest patent "Air-Pump" ventilators and air-inlets has been applied to Ebbw Vale Cottage Hospital, Ebbw Vale, Mon.

It may be of interest to our readers to know that the Letters Patent Insurance Co., Ltd., have granted a policy to Messrs. Kerner-Greenwood and Co., in respect of their patent powder "Pudio." ("Pudlo" makes cement waterproof.) The policy covers legal action in the event of anyone infringing the patent.

Mr. H. C. Scott has retired from the managing directorship of the Val de Travers Asphalte Paving Company, Ltd., but retains the position of chairman, a post he has now occupied for 41 years. Mr. Thomas Dryden Cooper has been appointed to a seat on the board, and succeeds Mr. Scott as managing director. Mr. Arthur Findlay has been appointed manager, and Mr. Charles William Wood, secretary, of the company.

Extensive additions are about to be made to the lunatic asylum at Carlow, from plans by Mr. W. P. Hade, of Dublin.

The salary of Mr. A. E. Newey, engineer and surveyor to the Foleshill Rural District Council, has been increased by £100 per annum.

The Roman Catholic church at Drumagarven, Co. Derry, has just been restored at a cost of £2,000 from plans by Mr. J. V. Brennan, of Belfast.

The late Mr. John James Myers, of Fleckburgh, Lancashire, retired architect, land surveyor and civil engineer, left estate of the value of £21,608.

It is now proposed that the memorial to the late Dr. Meade, Bishop of Cork, take the form of adding a chapter house to the cathedral, in place of carrying out interior decorations, as was originally intended.

Messrs. William Hinton and Sons, of Funchal, Madeira, have obtained a contract from the municipality to supply that city with proper sanitary drainage, and to bring down a supply of pure water from the mountains.

It has been decided that the Rochester Cathedral memorial to the late Canon Herbert C. Pollock shall take the form of refurnishing the Lady-chapel. The designing is in the hands of the architect to the Dean and Chapter, Mr. Temple Moore.

The accommodation for the proper arrangement of entomological exhibits at the Natural History Museum, South Kensington, is exhausted, and the trustees are considering a proposal for a considerable extension to the westward of the main building.

The arcade from Queen-street to Werberg-street, Cardiff, is about to be improved, the entrances being refronted in marble and the central island removed. Mr. W. R. Jackson, of Cardiff, is the architect, and the contract has been taken at £3,500 by Messrs. E. R. Evans and Brothers, of the same city.

Tenders for the construction of the sea-wall, breakwater, ship-canal, and retaining wall in connection with the $25,000,000 Toronto harbour improvement scheme have been asked for by the Canadian Dominion Government. The breakwater will extend from the eastern gap to Woodbine-avenue, and from the western gap to the Humber River. The ship-canal is to give access to the industrial district planned by the harbour board in Ashbridge's Bay. The cost of this portion of the work will be about $5,000,000.

The work in connection with the renovation of Buckingham Palace was begun on Tuesday, and it is the intention to have the whole undertaking completed in time for the return of the Court in October. Double shifts of workmen are employed, so that the operations may be carried on without cessation. We illustrated Sir Aston Webb's revised design for the new facade in our issue of May 2 last. The facing material is Portland stone furnished from the quarries of Messrs. F. J. Barnes and Co. Lifts have been supplied by Messrs. R. Waygood and Co., Ltd.

The new railway-station in Market-street, Pretoria, is three stories in height, and has an arched porte-cochère to the main entrance on the ground floor, with a long arcaded loggia on either side, and deeply recessed columnar features in the centre of the three principal façades. Deep overhanging eaves protect the walls and windows from sun and rain. On the west side is a covered main exit porch with granite columns. The building is entirely faced with flatnan sandstone from the Orange Free State, and is roofed with red tiles made at Vereeniging.

LATEST PRICES.

IRON.

Steel Joists, Belgian and German (ex steamer, London)	per ton	£6	2	6	to	£6	5	0
Steel Joists, English		7	10	0	,,	7	12	6
Wrought-Iron Girder Plates		7	0	0	,,	7	5	0
Steel Girder Plates		7	2	6	,,	8	2	6
Bar Iron, good Staffs		6	5	0	,,	8	10	0
Do., Lowmoor, Flat, Round, or Square		20	0	0	,,	0	0	0
Do., Welsh		5	15	0	,,	5	17	0
Boiler Plates, Iron—								
South Staffs		8	0	0	,,	8	15	0
Best Snedshill		9	0	0	,,	9	10	0

Angles 10s., Tees 20s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £8 15s to £9.
Ditto galvanised, £14 to £15 10s. per ton.

Galvanised Corrugated Sheet Iron—

	No. 18 to 20.	No. 22 to 24
6ft. to 8ft. long, inclusive	Per ton.	Per ton.
gauge	£13 0 0	£13 10 0
Best ditto	13 0 0	14 0 0

Wire Nails (Points de Paris)—

3 to 7	8	9	10	11	12	13	14	15	B.W.G.
8/3	8/9	9/3	9/9	10/3	11/-	11/9	12/6	13/6	per cwt.

	Per ton.				Per ton.		
Cast-Iron Columns	£7	10	0	to	£9	0	0
Cast-Iron Stanchions	7	10	0	,,	9	0	0
Rolled-Iron Fencing Wire	8	5	0	,,	8	10	0
Rolled-Steel Fencing Wire	7	5	0	,,	7	10	0
,, ,, Galvanised	8	15	0	,,	9	5	0
Cast-Iron Sash Weights	5	0	0	,,	5	5	0
Cut Floor Brads	9	15	0	,,		—	
Corrugated Iron, 24 gauge	16	0	0	,,		—	
Galvanised Wire Strand, 7 ply, 14 B.W.G.	14	5	0	,,		—	

B.B. Drawn Telegraph Wire, Galvanised—

0 to 8	9	10	11	12	B.W.G.
£10 10s.	£10 15s.	£11 0s.	£11 5s.	£11 15s.	per ton.

Cast-Iron Socket Pipes—							
3in. diameter	£6	2	6	to	£6	7	0
4in. to 6in.	6	0	0	,,	6	5	0
7in. to 24in. (all sizes)	5	7	6	,,	6	0	0

[Coated with composition, 5s. 0d. per ton extra, turned and bored joints, 5s. 0d. per ton extra.]

Pig Iron—	Per ton.		
Cold Blast, Lilleshall	110s. 0d.	to	117s. 6d.
Hot Blast, ditto	70s. 0d.	,,	75s. 0d.

Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—

Gas-Tubes	75 p.c.
Water-Tubes	72½ ,,
Steam-Tubes	67½ ,,
Galvanised Gas-Tubes	65 ,,
Galvanised Water-Tubes	62½ ,,
Galvanised Steam-Tubes	57½ ,,

OTHER METALS.

Spelter, Silesian	Per ton	£20	15	0	to £21	0	0
Lead Water Pipe, Town		25	5	0	,,	—	
,, ,, ,, Country		26	0	0	,,	—	
Lead Barrel Pipe, Town		26	5	0	,,	—	
,, ,, ,, Country		27	0	0	,,	—	
Lead Pipe, Tinned inside, Town		27	5	0	,,	—	
,, ,, ,, ,, Country		28	0	0	,,	—	
Lead Pipe, Tinned inside and outside ..... Town		29	15	0	,,	—	
,, ,, ,, ,, Country		30	10	0	,,	—	
Composition Gas-Pipe, Town		28	5	0	,,	—	
,, ,, Country		29	0	0	,,	—	
Lead Soil-pipe (up to 4½in.) Town		28	5	0	,,	—	
,, ,, ,, Country		29	0	0	,,	—	

[Over 4½in. £1 per ton extra.]

Lead Shot, in 28lb. bags		24	15	0	,,	—	
Copper Sheets, sheathing & rods		82	0	0	,,	82	10	0
Copper, British Cake and Ingot		71	10	0	,,	72	0	0
Tin, English Ingots		190	0	0	,,	191	0	0
Do., Bars		191	0	0	,,	191	10	0
Pig Lead, in 1cwt. pigs (Town)		22	5	0	,,	—		
Sheet Lead, Town		24	15	0	,,	—		
,, ,, Country		25	10	0	,,	—		
Genuine White Lead		30	15	0	,,	—		
Refined Red Lead		25	10	0	,,	—		
Sheet Zinc		30	0	0	,,	—		
Old Lead, against account		19	15	0	,,	—		
Tin	per cwt.	11	0	0	,,	—		
Cut nails (per cwt. basis, ordinary brand		0	11	6	,,	—		

TIMBER.

CONSTRUCTIONAL.

Yellow Pine Deals, Quebec, per standard:— 1st quality	£38	0	0	to	£45	0	0
,, ,, ,, 2nd ,,	26	0	0	,,	32	0	0
,, ,, ,, 3rd ,,	16	0	0	,,	18	10	0
Spruce Deals: St. Johns	10	0	0	,,	11	10	0
,, ,, Miramichi	9	10	0	,,	10	10	0
,, Boards: Swag	11	0	0	,,	12	0	0
Red Deals: Archangel 1st quality	21	0	0	,,	24	0	0
,, ,, ,, 2nd ,,	16	0	0	,,	19	0	0
,, ,, ,, 3rd ,,	12	0	0	,,	14	0	0
,, ,, St. Petersburg—							
,, ,, ,, 1st quality	16	10	0	,,	18	0	0
,, ,, ,, 2nd ,,	14	10	0	,,	15	10	0
,, ,, Wyburg & Ulcaborg	12	10	0	,,	15	0	0
,, Gefle, Gothenburg, and Stockholm	12	10	0	,,	17	0	0
White Deals: Crown	14	0	0	,,	15	10	0
,, ,, Seconds	11	10	0	,,	13	0	0
Flooring: White and Planed—							
1st and 2nd quality mixed	10	15	0	,,	11	15	0
1st, 2nd, & 3rd quality mixed	10	5	0	,,	11	0	0
Red Planed, 1st quality	14	10	0	,,	17	0	0
Pitch Pine: Prime Deals and Boards	18	0	0	,,	23	0	0
Lignum Vitæ ..... Per ton	7	0	0	,,	14	0	0

	Per cubic foot.						
Yellow Pine Logs (waney board)	0	5	0	,,	0	5	6
Pitch Pine Logs	0	2	0	,,	0	2	6
Birch: Quebec Logs	0	2	3	,,	0	2	9
Oak: Austrian Wainscot	0	7	0	,,	0	8	0
Mahogany: Gaboon [	0	2	0	.	0	2	3

FURNITURE AND HARDWOODS.

Teak: Burmese, per load, 50ft.	£20	0	0	to	£25	0	0
Teak: Java, per load, 50ft.	16	0	0	,,	21	0	0
	Per cubic foot.						
Oak Planks: U.S.A., imported	0	1	9	to	0	2	6
,, Boards ,, ,, Prm.	0	3	0	,,	0	3	6
,, ,, ,, ,, Mdm.	0	2	6	,,	0	2	9
Sequoia (Californian Redwood)	0	2	4	,,	0	3	6
Birch: Quebec logs	0	2	3	,,	0	2	9
,, ,, sawn planks	0	1	3	,,	0	2	0
Oak: Austrian Wainscot	0	7	0	.	0	8	0
Walnut: Prime boards and planks	0	6	0	,,	0	6	6
Walnut: Mdm. ,, ,,	0	3	6	,,	0	4	6
Greenheart: Hewn logs	0	3	3	,,	0	4	0
Cedar: Cigar box	0	4	9	,,	0	5	6
Satin Walnut: Imp. sawn boards, prime	0	3	4	,,	0	3	9
Orham: Imp. sawn boards, prime	0	2	0	,,	0	3	3
Mahogany: St. Domingo, Cuba, and Honduras	0	6	0	,,	0	9	0
,, African, Assinee, &c.	0	5	0	,,	0	6	6
,, Lagos and Benin	0	4	6	,,	0	6	0
,, Sekondi and Cape Lopez	0	3	0	,,	0	4	0
,, Gaboon	0	2	0	,,	0	3	3
Satinwood: West Indian	0	10	0	,,	0	14	0
Rosewood	Per ton	8	0	0	,,	12	0	0
Lignum Vitæ	,,	7	0	0	,,	14	0	0

STONE.*

Red Mansfield, in blocks	per foot cube	£0	3	4
Darley Dale, ditto	,,	0	2	3
Red Corsehill, ditto	,,	0	2	3
Closeburn Red Freestone, ditto	,,	0	2	0
Ancaster, ditto	,,	0	1	10
Greenshill, ditto	,,	0	1	10
Chilmark, ditto (in truck at Nine Elms)	,,	0	1	10½
Hard York, ditto	,,	0	2	10
Ditto ditto 6in. sawn both sides, landings, random sizes	per foot sup.	0	3	8
Ditto ditto 3in. slab sawn two sides, random sizes	,,		1	3

* All F.O.R. London.

Bath Stone, delivered on road waggons, Paddington Depot	per foot cube	0	1	7½
Ditto, ditto, Nine Elms Depot	,,	0	1	9½
Beer Stone, delivered on rail at Seaton Station	,,	0	1	0
Ditto, delivered at Nine Elms Station	,,	0	1	6

Portland Stone, in random blocks of 20ft. average:—

	Brown Whit Bed.	White Base Bed
	Per foot cube.	
Delivered on road waggons at Paddington Depot, Nine Elms Depot, or Pimlico Wharf	£0 3 3	£0 3

SLATES.

	in. in.	£	s.	d.	per 1,000 of 1,200 at r.stn
Blue Portmadoc	20×10	12	12	6	
,, ,,	16×8	6	12	6	,,
Blue Bangor	20×10	13	2	6	,,
,, ,,	20×12	13	17	6	,,
First quality	20×10	13	0	0	,,
,, ,,	20×12	13	15	0	,,
,, ,,	16×8	7	5	0	,,
Eureka unfading green	20×10	15	17	6	,,
,, ,,	20×12	18	7	6	,,
,, ,,	18×10	13	5	0	,,
,, ,,	16×8	10	5	0	,,
Permanent green	20×10	11	12	6	,,
,, ,,	18×10	9	12	6	,,
,, ,,	16×8	6	12	6	,,

BRICKS.

(All prices net.)

First Hard Stocks	£1	15	0	per 1,000 alongside, in	
Second Hard Stocks	1	11	0	,, ,,	(river
Mild Stocks	1	9	0	,, ,,	,,
Picked Stocks for Facings	2	5	0	,,	livered at rly. stn.
Flettons	1	10	0	,, ,,	,,
Pressed Wire Cuts	1	18	0	,, ,,	,,
Red Wire Cuts	1	14	0	,, ,,	,,
Best Fareham Red	3	12	0	,, ,,	,,
Best Red Pressed Ruabon Facing	5	0	0	,, ,,	,,
Best Blue Pressed Staffordshire	3	15	0	,, ,,	,,
Ditto Bullnose	4	0	0	,, ,,	,,
Best Stourbridge Firebricks	3	14	0	,, ,,	,,
2½in. Best Red Accrington Plastic Facing Bricks	4	10	6	,,	Net, delivered in full truck loads in London.
" Accrington Best Red Plastic Facing Bricks					per 1,000 £2 10 0
3½" ditto Second Best Plastic ditto					2 2 6
Ditto Ordinary Second Bricks					1 11 3
Ditto Plastic Engineering Bricks					1 17 6
Sewer Arch Brick not more than 3½" in thickest part					2 0 0
3½" Chimney Bricks fit for outside work					2 6 0
3½" ditto ditto through and through					2 0 0
3½" Beaded, Ovolo and Bevel Jambs; Octagons; 2½" and ½" radius Bullnoses; Stock patterns					3 7 6
Accrington Air Bricks, 9"×2 course deep, each					0 0 6
Ditto ditto 9"×1 course				,,	0 0 3

Accrington Camber Arches:—

3 course deep, 4½" soffit, per foot opening						0	1 3
4	ditto	4½"	ditto	ditto	ditto	0	1 8
5	ditto	4½"	ditto	ditto	ditto	0	2 1
6	ditto	4½"	ditto	ditto	ditto	0	2 6
3	ditto	9"	ditto	ditto	ditto	0	2 1
4	ditto	9"	ditto	ditto	ditto	0	2 11
5	ditto	9"	ditto	ditto	ditto	0	3 9
6	ditto	9"	ditto	ditto	ditto	0	4 6

Net free on rail or free on boat at works.

GLAZED BRICKS.

HARD GLAZES, (PER 1,000.)

	White, Ivory, and Salt Glazed. Best.	Buff, Cream, & Bronze. Best.	Other Colours. Seconds.	Second Colours.
Stretchers—	£12 7 6	£10 17 6	£13 17 6	£17 17 6	£12 7 6
Headers—	11 17 6	10 7 6	13 7 6	17 7 6	11 17 6
Quoins, Bullnose, and 4½in. Flats—	15 17 6	14 17 6	17 17 6	21 7 6	15 17 6
Double Stretchers—	17 17 6	16 7 6	20 17 6	24 7 6	17 17 6
Double Headers—	14 17 6	13 7 6	17 17 6	21 7 6	14 17 6
One side and two ends, square—	18 17 6	17 7 6	21 17 6	26 7 6	18 17 6
Two sides and one end, square—	19 17 6	18 7 6	22 17 6	26 17 6	19 17 6
Splays and Squints—	17 7 6	15 17 6	21 17 6	24 17 6	17 7

Plinth and Hollow Bricks. Stretchers and Headers—
5d. each 4d. each 6d. each 6d. each 5d. each
Double Bullnose, Round Ends, Bullnose Stops—
5d. each 4d. each 6d. each 6d. each 5d. each
Rounded Internal Angles—
4d. each 3d. each 5d. each 5d. each 4d. each

MOULDED BRICKS.

Stretchers and Headers—
8d. each 8d. each 8d. each 8d. each 8d. each
Internal and External Angles—
1/2 each 1/2 each 1/2 each 1/2 each 1/2 each
Cill Bullnose, Stretchers and Headers—
5d. each 4d. each 6d. each 6d. each 5d. each
Majolica or Soft Glazed Stretchers and Headers ..... Per 1,000 £22 17 6
" Quoins and Bullnose... 27 17 6
Compass bricks, circular and arch bricks of single radius £6 per 1,000 over above list for their respective kinds and colours } Not exceeding 9in.
Camber arch bricks, any kind or colour, 1s. 2d. each ..... } by 4½in. by 2½in.
Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.
* These prices are carriage paid in full truck loads to London Stations.

	s.	d.	
Thames Sand	7	6	per yard, delivered
Pit Sand	7	0	" "
Thames Ballast	6	0	" "

	s.	d.			Per ton,
Best Portland Cement	36	0	to	41	0 delivered
Ground Blue Lias Lime	21	0	per ton delivered.		

Exclusive of charge for sacks.

	s.	d.		s.	d.	Per yard,
Grey Stone Lime	13	6	to	14	0	delivered

Stourbridge Fireclay in sacks 27s. 0d. per ton at railway station.

TILES.

	s.	d.	Dlvrd. at
Plain red roofing tiles	42	0	per 1000 ry. stn.
Hip and Valley tiles	3	7	per doz. " "
Broseley tiles	50	0	per 1000 " "
Ornamental tiles	52	6	" " "
Hip and Valley tiles	4	0	per doz. " "
Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000 " "
Ornamental do.	60	0	" " "
Hip tiles	4	0	per doz. " "
Valley tiles	3	0	" " "
Selected "Perfecta" roofing tiles:—Plain tiles (Peake's)	46	0	per 1000 " "
Ornamental do.	48	6	" " "
Hip tiles	3	10½	per doz. " "
Valley tiles	3	4½	" " "
"Rosemary" brand plain tiles	48	0	per 1000 " "
Ornamental tiles	50	0	" " "
Hip tiles	4	0	per doz. " "
Valley tiles	3	8	" " "
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 " "
Hand-made sand-faced	45	0	" " "
Hip tiles	4	0	per doz. " "
Valley tiles	3	6	" " "
Hartshill" brand plain tiles, sand-faced	50	0	per 1000 " "
Pressed	47	6	" " "
Ornamental do.	50	0	" " "
Hip tiles	4	0	per doz. " "
alley tiles	3	6	" "

OILS.

Rapeseed, English pale, per tun		£28	15	0	to £29	5	0
Do., brown	" "	26	15	0	" 27	5	0
Cottonseed, refined	" "	29	0	0	" 30	0	0
Olive, Spanish	" "	39	10	0	" 40	0	0
Seal, pale	" "	21	0	0	" 21	10	0
Cocoanut, Cochin	" "	46	0	0	" 46	10	0
Do., Ceylon	" "	42	10	0	" 43	0	0
Do., Mauritius	" "	42	10	0	" 43	0	0
Palm, Lagos	" "	32	5	0	" 33	5	0
Do. Nut Kernel	" "	35	0	0	" 35	10	0
Oleine	" "	17	5	0	" 19	5	0
Sperm	" "	30	0	0	" 31	0	0
Lubricating U.S.	per gal	0	7	0	" 0	8	0
Petroleum refined	" "	0	0	6½	" 0	0	6½
Tar, Stockholm	per barrel	1	6	0	" 1	10	0
Do., Archangel	" "	0	19	6	" 1	0	0
Linseed Oil	per gal.	0	2	5¾	"	—	
Baltic Oil	" "	0	2	8	"	—	
Turpentine	" "	0	2	4½	"	—	
Putty (Genuine Linseed Oil)	per cwt.	0	9	0	"	—	
Pure Linseed Oil "Stority" Brand	"	0	10	0	"	—	

GLASS (IN CRATES).

	15oz.	21oz.	26oz.	32oz.
English Sheet Glass: Fourths	2d.	3d.	3½d.	4½d.
Thirds	2½d.	3½d.	4½d.	5½d.
Fluted Sheet	2½d.	3½d.	6½d.	7d.
Hartley's English Rolled Plate:	⅛in.	3/16in.	¼in.	
	2½d.	2½d.	3d.	
Figured Rolled and Repoussine		White.	Tinted 3½d.	5d.

VARNISHES, &c.

	Per gallon.
Fine Pale Oak Varnish	£0 8 0
Pale Copal Oak	0 10 0
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of churches	0 14 0
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flatting Varnish	0 18 9
White Copal Enamel	1 4 0
Extra Pale Paper	0 12 9
Best Japan Gold Size	0 10 9
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 0

Trade News.

WAGES MOVEMENTS.

NORTH-WEST DURHAM JOINERS' WAGES ADVANCED. As the result of negotiations, which have been pending for some weeks between the Consett and Annfield Plain branches of the Amalgamated Society of Carpenters and Joiners and the master builders in North-West Durham, the employers have granted an advance of ½d. per hour upon the present district wage of 9d. an hour, the increase to take effect on August 25.

Telephone: DALSTON 1388

OGILVIE & CO. Many years connected with the late firm of W. H. LASCELLES & CO., of Bunhill Row.

Mildmay Avenue, ISLINGTON, N.

EXPERTS in HIGH-CLASS JOINERY.

ALTERATIONS & DECORATIONS. ESTIMATES FREE.

FOR

Olivers' Seasoned Hardwoods,

APPLY TO—

WM. OLIVER & SONS, Ltd.,

120, Bunhill Row, London, E.C.

TENDERS.

*** Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

ASHFORD, MIDDLESEX.—For additions and alterations to the Clarendon-road Council School at Ashford, for the County Council of Middlesex. Mr. H. G. Crothall, F.R.I.B.A., architect to the education committee:—

Jordan, A.	£1,166 0 0
Fassnidge and Son	1,095 0 0
Hanson, A. and B.	1,094 0 0
Fairhead, A., and Son	1,056 0 0
Lacy, W.	1,044 0 0

* Recommended for acceptance.

BELPER.—For alterations to heating apparatus at the workhouse, for the board of guardians:—

Freer, W. (accepted)	£253 0 0

BIRMINGHAM.—For the erection of a weights and measures office at the junction of Corporation-street extension and Potts-street, for the city council:—

Smith, F. H. (accepted)	£3,345 0 0

BRISTOL.—For various plant at Avonmouth Docks, for the docks committee. Accepted tenders:—
Grain elevating plant:—Spencer and Co.
Steel wire and crane ropes:—Bullivant and Co.
Electric cable:—Johnson and Phillips.

BROOMHILL AND LYDD.—For carrying out sea-wall work, for the sewer commissioners. Messrs. Weldon and Stokes, 11, Bank-street, Ashford, Kent, joint clerks:—

Smith and Durrant, Pevensey	£6,099 19 0
Brann, G., Broomhill, Sussex	2,600 0 0
Armistead, R., and Co., Sheerness-on-Sea, Kent (accepted)	2,050 0 0

BROWNHILLS.—For supply and erection of gas-engine, suction-gas plant, and three-throw pump capable of lifting 22,500 gallons per hour, for the urban district council. Mr. R. Green, M.I.C.E., 37, Waterloo-street, Birmingham, engineer:—

Croseley Bros., Manchester	£1,559 0 0
Waller and Son, Stroud	1,374 0 0
Rees-Roturbo Co., Wolverhampton	1,300 0 0
British Westinghouse, Birmingham*	1,276 0 0
Davey, Paxman, and Co., Colchester	1,257 0 0
Mather, G. R., and Son, Wellingborough	1,240 0 0
Campbell Gas Engine Co., Halifax (accepted)	1,117 17 0

* Excluding delivery, piping, and connections.

CRESSAGE.—For works in reinforced concrete to the abutments of the highway bridge at Cressage, for the Salop County Council:—

Liverpool Ferro-Concrete Contracting Co., Ltd. (accepted)	£1,772 0 0

CROWBOROUGH.—For installing low-pressure heating apparatus in the infants' school at Crowborough, for the East Sussex Education Committee:—

Smith & Sons, Brighton (accepted)	£104 2 0

CUDHAM.—For building a council school at Cudham, for the Kent Education Committee:—

Honour, F. W. (accepted)	£1,537 0 0

DAWLISH.—For alterations and extension of premises, for the Constitutional Club Co.:—

Shapter Bros. (accepted)	£335 0 0

DEFFORD.—For construction of a brick bridge of four arches over the Bow Brook, near Defford, for the County Highways and Bridges Committee. Mr. G. F. Gettings, Shirehall, Worcester, county surveyor:—

Firth, B., Wakefield	£2,997 4 11
Vale, T., and Sons, Ltd., Stourport	2,075 10 0
Higgins, W., Northampton	1,907 0 0
Currall, Lewis, and Martin, Ltd., Birmingham (accepted)	1,884 18 3
Smith, H., Wolverley, Kidderminster	1,670 0 0

DENBIGH.—For alterations and additions at Howell's School, Denbigh. Heaton Comyn, A.R.I.B.A., 16, Finsbury-circus, E.C., architect:—

Brown and Backhouse, Liverpool	£16,156 0 0
Henshaw, J., and Sons, Liverpool	15,900 0 0
Jones, J., and Sons, Liverpool	15,436 0 0
Parnell and Sons, Rugby	14,898 0 0
Thornton, W., & Sons, Liverpool	14,565 0 0
Norman and Burt, Sussex	13,863 0 0
Colls and Son, London	13,813 0 0
Treasure and Son, Shrewsbury	13,796 0 0
Parker Bros., Chester	13,328 9 9
Dallow, J., & Sons, Birmingham	13,266 0 0
Marshall, G. and H., Birmingham	12,223 0 0
Barnsley and Sons, Birmingham*	12,266 0 0

* Accepted by the Drapers Company.

DITHERINGTON.—For the laying of about 500 yards lineal of 9in., 6in., and 4in. sewers at the Garden Suburb, Ditherington. Mr. A. E. Williams, County Chambers, 12, High-street, Shrewsbury, architect:—

Harris, J., Bootle, Liverpool	£275 3 4
Trentham, G., P., Ltd., Birmingham	267 10 0
Probert, G. E., Bilston	230 3 2
Edwards, G. & W., Welsh Bridge, Shrewsbury (accepted)	204 0 0

DONCASTER.—For extension of jockeys' room and weighing room at the racecourse:—

Wortley, Nether Hall-road (Accepted.)	£250 0 0

DUBLIN.—For the construction of reservoirs at Roundwood, for the Dublin Corporation:—

Mackay, J., Dundee (accepted) over	£70,000

GUILDFORD.—For additional shedding at the markets, for the corporation. Mr. C. G. Mason, A.M.I.C.E., borough engineer:—

Swayne, T., and Son, Guildford	£373 0 0
Carn, T., Guildford	262 0 0
Wood, R., and Son, Guildford	257 0 0

HADLEIGH, ESSEX.—For enlargement of Hadleigh school, for the Essex Education Committee:—

Eglin, J. C., and Co. (accepted)	£679 0 0

HODDLESDEN.—For erecting 15 houses, Carus-street, for the Co-op. Industrial Society, Ltd. Mr. C. H. Woods, Albert Buildings, Darwen, architect:—

Lloyd and Millward, Blackburn-road, Darwen	£4,469 0 0

(Considerable delay caused by re-tendering—only just settled.)

KILGAY.—For the erection of a new school, for the Norfolk Education Committee. Mr. John E. Burton, Victoria Chambers, Bank Plain, Norwich, architect:—

	A.	B.
Ashby, F. W., Ltd., Downham	£3,450 0 0	£3,368 0 0
Hannant, W. J.	3,244 0 0	3,214 0 0
Hurn, J., and Son	3,159 0 0	3,123 0 0
Porter, G., Southery	3,111 1 9	3,059 16 5
Gill, T., and Son	3,047 0 0	3,017 0 0
Collins, W. J., Downham	2,983 9 0	2,923 0 0
Tofts, H. C., Hingham	2,926 1 4	2,888 10 0
Youngs, J., and Son	2,743 0 0	2,700 0 0
Shanks, R., Chatteris	2,767 0 0	2,698 0 0
Tash and Langley, Lynn*	2,593 11 3	2,535 15 3

A.—Tiled roofs. B.—Slated roofs.

* Accepted subject to reductions. (Rest of Norwich.)

KIRKCALDY.—For the construction of the new works of water supply at Glenfarg, for the Kirkcaldy District Committee. Messrs. Leslie and Reid, of Edinburgh, engineers. Accepted tenders:—
Construction of reservoirs and laying of mains and pipes:—

Jackson & Anderson, Edinburgh	£61,723 5 8

For supplies of mains and pipes:—

M'Laren, Robert & Co., Glasgow	£8,187 3 5

LANCASTER.—For the supply of two top-deck covers, for the town council:—

Electric Car Co., Preston (accepted),	£125 each.

LANGLEYDALE.—For laying of a water main, consisting of 667 yards of 4in. and 1,394 yards of 3in. diameter cast-iron spigot and socket pipes, for the Barnard Castle Rural District Council. Mr. R. Brown, Barnard Castle, surveyor:—

Hedley, C., Barnard Castle (accepted),	£404 8s. 6d.

LLANSPYDDID.—For alterations to latrines, drainage, &c., at the council school:—

Morgan, W., Brecon (accepted)	£117 3 0

LISKEARD.—For building a brick stack for boiler at the workhouse, for the guardians:—

Runnalls, R. H., and Sons	£119 10 0
Trehane, S.	105 10 0
Bartlett F. (accepted)	95 10 0

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THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House, Strand, W.C.

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OUR ILLUSTRATIONS.

River Plate House, Finsbury-circus, E.C., Offices of the Buenos Ayres Great Southern Railway. Mr. Richard Creed, F.R.I.B.A., Architect.

Streatham County Secondary School for Girls, L.C.C. Two view and plan. Mr. W. E. Riley, F.R.I.B.A., Superintending Architect.

Bristol Baptist College, Tyndall's Park. View and plans. Messrs. G. H. Oatley, F.R.I.B.A., and G. C. Lawrence, A.R.I.B.A., Architects.

King Edward VII. Memorial, Barnum Bank. Mr. Albert Toft, Sculptor.

"Harcombe," Chudleigh, Devon, for Sir E. C. Wills, Bart. View and plans. Mr. J. Archibald Lucas, A.R.I.B.A., Architect.

Organ and Organ Loft, Whitstable Church, Kent. Mr. A. H. Goodsall, Architect.

Harrogate Elementary School Competition: Selected design. Elevations, section, and plan. Mr. C. H. Channon, F.R.I.B.A., Architect.

HOW NOT TO DO THINGS—WHY?

Is it possible for an architect to have any building work carried out in a proper manner by a contractor, without making his specification a complete treatise on building construction, and embodying it in the contract? This question has suggested itself to us over and over again, and it has come to the front more persistently than ever during the last few days, in connection with such simple matters as mortar-making and the use of lintels to ordinary openings. Although building work has been continuous throughout the ages, experience affording builders stores of knowledge; although father hands on to son the information he has gained by doing rather than talking, and technical teachers by talking and not doing, it is disheartening to find that even with these advantages we have builders with us who are as innocent of the rudiments of their business as were their ancestors of the Stone Age, and they appear to multiply in increasing numbers. Workmen are ingenious, and we cannot help remarking at times how demoniacal their ingenuity is when, apparently with the best intentions, they can do work in such a way as to be of no value whatever for its intended purpose, and remain quite indifferent to the fact. The distressing thing about these manifestations of ignorance, or indifference, is that the only way the architect can cope with them is to multiply the number of his drawings, and lengthen his specification; and this is the reverse of modern requirements, which look for the curtailment of both, as we have on several occasions pointed out.

Building is a very complicated process at best; but the builder should be acquainted with all the trades he controls. If he is not, his work will be an expensive failure, and it may more directly affect the welfare of the community than a disaster attending any other business which ministers to its wants. Lawyers and doctors must have certificates of ability before they are allowed to practise; architects are endeavouring to place themselves under similar regulations. Why, then, should not the builder be required to prove his competency as such before he is allowed to build? For his work is of as much importance to the public well-being as that of the professions we have enumerated. Again, why should not builders' workmen be required to prove that they have learned the trade by apprenticeship to a master man in the old-fashioned way? For, surely, no one in his senses could think that attending a technical school class will ever make a good tradesman of anyone? Just think of it! Say a man wishes to become a stonemason. He first acquires a partial knowledge of how the work is to be done. In this the technical school may help him. Then comes the necessity for doing the work in a workmanlike way, and here the technical class fails, for it is only by steady, incessant labour for years that deftness in handling his tools, which is the sure mark of a finished workman, can be attained. We have frequently tried to work a plane surface on a piece of hard stone; it looked so easy to do it. But, although we were well acquainted with the process, and understood thoroughly all the geometry underlying the subject, we failed to get an inch of chisel draft, or even a punched face the size of half a crown. We have for some time abandoned stone-cutting, and from our experience we are entitled to consider it one of the most difficult trades to learn. Joinery is a more fascinating trade; but it takes a lifetime to learn it properly, with all the lines pertaining to it. A good staircase hand must be well up in geometry of a complicated kind, and an ordinary bench hand must also have a knowledge of Euclid, as applied to ordinary building work, besides knowing how to sharpen his tools and turn out accurately-worked, clean joinery. Very little consideration will show that the equipment of every skilled building tradesman must consist of a knowledge of the principles underlying his work, and ability to do it. The former may be acquired in school, but the latter can only come by continuous practice. We might have a more efficient class of builders' tradesmen if a law was made requiring a workman to produce his indentures before he could sue in any court for wages. We have sometimes been sued for tradesman's wages by men who were only labourers. Surely, in such cases, it would inflict no injustice on the workman if he were asked to produce his indentures, and show he was what he claimed to be? We have had men, on tramp, offer their services as bricklayers, and the only tool they possessed was a piece of a broken 2ft. rule! When, through sheer good nature, we employed them, and found that they were frauds, we had to pay them full tradesman's wages on discharging them.

Various irregularities occur through workmen not being registered as belonging to some society of standing that would take cognisance of improper conduct, or incapacity on their part, and employers are frequently victims on that account. Engaging a strange workman is like hiring a horse from a hotel yard that you have not ridden before, and you know nothing of his virtues or his vices—they are taken on trust—until in passing a motor you are thrown into a hedge. So with a workman. He may prove just as unsatisfactory, and one only comes to know of his virtues when it is too late. But to return to our mortar-making. We have a bricklayer, his labourer, a load of lime and a heap of sand, in a yard where some brickwork is in progress. An apprentice on a scaffold leans against the wall waiting for mortar, and this is how it is made in the year of our Lord 1913: The lime is spread on the ground in a roughly-circular shape, and about 9in. deep, it is hedged round with sand, and water is poured on the lime. The latter being nearly pure, that portion which is well turned slakes at once with violence, giving off great heat, which is allowed to escape. Sand is spread on the lime eventually, and the whole is thrown against a screen. All the sand, and about one-half the lime, pass through the screen, and the large unslaked lumps are thrown aside to slake gradually. The lime and sand are made into mortar in less than half an hour after the process commenced. Beating or "tempering" the mortar was not thought of, for water was added to it until the whole became liquid mud, or "slosh." On our pointing this out to the bricklayer, he said that was the proper way to make the mortar, for the bricks were dry, and they would take it up. The bricks did certainly act in this way; but his reason for using so much water was to save labour in making the mortar, not that he cared anything about the bricks or the work. Of course, rich lime slaked in this way is always found to have a grain like small shot; when, if properly slaked, it would be a powder so fine that any mechanical grinding could not equal it. Indeed, we have been so often imposed on by this hurried slaking, that we thought of running all lime used on the building into putty; but this plan would not do for lias lime, or any other lime containing clay. It is next to impossible to get labourers to beat mortar sufficiently, and on large buildings mills are used, although we would prefer hand work if properly done.

The use of a wood lintel should be known to everybody; but few workmen have any other idea of it than that it spans a doorway or windows opening to carry the superincumbent brickwork or masonry. Many architects appear to have the same opinion, for they increase its thickness according to the span, not in proportion to the actual work it has to do, but to meet some imaginary stress that will come on it. A wood lintel is put to the openings mentioned for the purpose of having those wood linings fixed to it which form the finished soffit of the windows, and without which they could not be fixed. Its function, therefore, is only to hang some light woodwork, panelled or plain; in fact, it has to do little more than carry itself. A wood lintel should be fixed with this fact in mind; but how often do architects see

such lintels made to do work they were never intended for? One is fixed without a discharging arch, the wall being carried up on the wood; another is made to do duty as a centre for the discharging arch, and as the rough core which was placed on the lintel, to turn the arch, is not removed, the weight of the wall is transferred to the lintel. The proper arrangement here is a matter of common-sense, the exercise of which is held in abeyance during the execution of this, and many other building operations. As the only use a lintel should be put to is to hang joinery, it is obvious that where there is to be no soffit lining there need be no lintel. No one thinks of putting panelled or plain wood linings to the door or window-heads of labourers' cottages, yet lintels are always fixed to carry the imaginary woodwork, and they have to be lathed to carry plastering to match the jambs. It does not appear to strike anyone that where there are to be no wood linings to such openings there need be no lintels, and the window or door openings will look all the better if the plastering is attached directly to the brick arches over them. Another strange practice brick layers have is that of bedding stone window-sills as the work is carried up, thus insuring their fracture (the sills—not the bricklayer!); but this is not so common as the absurd use of wood lintels first mentioned. An ordinary window-sill is from 4in. to 6in. thick, and this, if built into the jambs, is certain to break across the opening if it is bedded in the centre. The process is exactly like breaking a piece of wood across one's knee; the panels go down, but the window's back does not settle in the same proportion, and the sill, unable to resist the transverse strain, breaks across. Mediæval masons were wiser in their generation than we are, for the sills of their largest windows, even when they spanned 20ft. or more, were constructed so as to avoid the unsightly failures referred to. With them the largest sill was built with small blocks; they never put in stones reaching from jamb to mullion, or from mullion to mullion, and the depth, often as much as 3ft., was made up of several courses weathered. Working in this way, the sill might be omitted until the springing of the window was reached; in any case, if the sill was fully bedded as the work went up, the jambs might settle; as the settlement would be distributed over so many joints it would be imperceptible.

One great difference between Classic architecture (Greek) and Gothic is that in the former the stone lintel is common, while in the latter it is unknown. Stone is not a safe material to subject to transverse strain, and Mediæval masons always subjected it to compression; the principles of construction underlying the two styles are totally different, the latter being the most scientific of the two. Mediæval mason work was not, however, always perfect, for the old mason used ironwork in connection with stone, so as to insure its destruction. We need only point out the mullions and jambs of many fine windows, burst from top to bottom by the iron saddle bars and stanchions inserted in them. How little experience affects our conduct when we allow other considerations to intervene may be seen in all those cases where iron railings are leaded with stone or terra-cotta plinths, for the invariable result, after a time, is the certain destruction of the latter.

One of the strangest things connected with building is the entire ignorance of the workmen and their employers as to almost every fact connected with the timber they use, dry-rot, especially, being to them a kind of supernatural process that it would be useless to inquire into. Much has been written on building timber; the subject has been treated exhaustively in our columns, and still one would think that the literature of the subject was a blank, so little is known about it, or that it is too abstruse for the ordinary mind to grapple with. When will it be understood that if ordinary timber, as it comes from the dock, or the timber-yard, is placed where there is no circulation of air about it, wet-rot will set in, to be followed by "dry-rot" when the process is far advanced? We examined a church wall once, in which there was what appeared to be a horizontal flue 6in. square; but this turned out to be the space once occupied by bond timber, which completely perished, leaving scarcely a trace behind. Over and over again we read of cases where floors have been attacked by dry-rot, because a circulation of air was not provided in them by the simple arrangement of air-bricks in the walls. Again, how often do we see joinery utterly ruined by the shrinkage of the wood leaving unsightly gaps in the joints? Floor-boarding is especially liable to failure of this kind, and, in this case, there is apparently no help for it but by laying the boards without nailing, and leaving them so for a year or two. They might then be cramped together and nailed; the skirtings would, however, be a difficulty in this case, if the house had to be occupied.

It is not pleasant to have work done in such a way that the architect has no option but to condemn it; and this fact is one of the most unpleasant in an architect's practice. Over and over again we have to object to the manner in which stonework and joinery is being executed, and this we do to save ourselves, for if the work is passed as being properly done, we shift the responsibility for making it good to our own shoulders—or, at least, our satisfaction with the work is assumed if we raise no objection to it, and it may be imputed to us that we did not know the material was faulty or the workmanship bad. The most kindly-disposed architect will, therefore, under such adverse circumstances, condemn the work without hesitation; and if pulling the work down subjects the contractor to great loss, a compromise may be arrived at—always, however, with the consent of the employer. Bad work is an eyesore, and it remains one until time mercifully destroys it.

THE NEW WORKMEN'S DWELLINGS OF THE L.C.C.

By W. E. Riley, F.R.I.B.A., Etc.

We publish below an English translation of a paper read in French by Mr. W. E. Riley, F.R.I.B.A., M.I.C.E., R.B.A., at the "Construction des Villes" Session of the International Congress at Ghent, held from July 27 to the 2nd instant.

Mr. Riley was appointed with Mr. A. T. Taylor, L.C.C., F.R.I.B.A., as the official representatives of the London County Council at this Congress.

The title of the lecture was suggested by Prof. Geddes, and the paper was illustrated by slides, the majority of which were coloured.

Those whose acquaintance with London extends over any considerable period cannot fail to be struck with the changes which are manifest in the appearance of the city. So far as municipal work is concerned, this transformation is chiefly attributable to three causes: Street widenings and improvements, the condemnation and clearance of slum areas, and rebuilding due to educational requirements. As showing the magnitude of these operations, it may be stated that on Metropolitan improvements alone the sum of nearly £9,000,000 has been spent in the last quarter of a century, besides large sums in smaller improvements of local importance. It is not intended to go into the details involved in these changes, but it has been thought that one aspect would be of special interest to the Congress—viz., the erection of dwellings for persons of the working class.

REHOUSING THE DISPLACED.

In the past 14 years more than 29,000 persons of the labouring class have been displaced in London by the operations of the County Council, who have, in the same period, provided accommodation for 48,000, either in block dwellings, common lodging houses, or cottages of varying size. The great improvement schemes recently carried out, the most important of which was the formation of Kingsway and Aldwych, have involved large rehousing obligations. This improvement resulted in the clearance of a densely populated area, notorious for the meanness of its streets and alleys and the unhealthiness of its moral and sanitary conditions; and also in the displacement of 3,700 persons of the working class. For these, accommodation had to be provided elsewhere, and for the majority within one mile of their former houses. The mode in which this was done may be regarded as more or less typical of one side of municipal housing in London; 1,864 of these 3,700 persons were accommodated on the Bourne Estate, of which a short description may be given. The site has an area of 2¾ acres, and was purchased for £200,000. It is covered with blocks of five-story dwellings, planned so that the internal blocks lie north and south, in order that the maximum of sunlight may be obtained for the living-rooms, and each tenement has at least one room looking on to a garden. The type of plan designed for the buildings is an improved balcony plan arranged so that the living-rooms and bedrooms do not look on any of the balconies, and have unobstructed light. All the sculleries and domestic offices are separated from the habitable rooms by a ventilated lobby. The average area of the living-rooms is 150ft. superficial, and of the bedrooms 100ft. The dwellings are divided into 537 tenements, of which only 16 are associated and the remainder self-contained. The 16 associated tenements—that is, tenements in which the domestic offices are shared by more than one tenement, all consist of one room, of which the weekly rental is 4s. 6d. to 6s.; for a two-room tenement, 7s. 6d. to 8s. 6d. a week is charged; for a three-room tenement, 9s. 6d. to 11s.; and for a four-room tenement, 11s. to 13s. Accommodation for some of those displaced by the Kingsway improvement was also provided for in a lodging-house for men, erected at the corner of Kemble-street and Drury-lane, with cubicles for 699 men. The building is six stories in height, and on the ground floor the lodgers' section contains dining, smoking, reading, and writing rooms. Fixed teak tables and seats are provided to accommodate 360 men at one time. The lodgers can cook their own food, and sinks are provided where food can be prepared. The smoking-room contains fixed teak tables and seats, accommodating 96 men, in addition to movable armchairs. The reading-room is similarly furnished, book-cases with books being provided. In the basement the lavatory room is fitted with 68 basins, each having hot and cold water supply. Adjoining the lavatory is a feet-washing room, and bathrooms containing five slipper-baths and one shower bath, with hot and cold water supply to each. There is a washhouse for the use of lodgers wishing to wash their own garments, and also a drying chamber. Shops are provided for a barber and a bootmaker. With regard to the cubicle floors, each is divided into sections by division walls, which admit of the isolation and disinfection of sections. Each lodger has an independent cubicle with a minimum width of 4ft. 10½in., and an area of 36sq.ft., and is lighted by a separate window. The height of the stories is 9ft., the partitions between the cubicles being 7ft. 6in. in height, and the portion adjoining the corridor 6ft. 6in., thus insuring ample ventilation. Each cubicle contains an iron bedstead with a spring mattress, the whole of which can be folded back against the partition for the purpose of sweeping and cleaning the floor. The charge for the use of the cubicle is 6d., 7d., 1s., and 1s. 2d. for a single night. For a private bath with hot and cold water, one penny is charged, including soap and use of towel. A further

instalment of those displaced by the Kingsway improvement was rehoused on the Millbank Estate, Westminster, the development of which affords an example of rehousing on the site of an old landmark. The site of the old Millbank prison was recommended by the Royal Commission on Housing to be appropriated for housing purposes, and was sold by the Government for £22,242. It is laid out for 17 blocks of workmen's dwellings, providing accommodation for 4,430 persons. The planning is arranged to insure a through current of air and sufficient ventilation under all circumstances, and a large portion has been left for use as a garden.

DIRECT AMELIORATION SCHEMES.

The dwellings already referred to can only be regarded as rehousing those displaced in consequence of street improvements, and do not represent the attempts made directly for the amelioration of the housing of the working class. The first large scheme undertaken with this special object was to deal with the huge slum in Bethnal Green known as the Boundary-street area. The occupants of this area were described as heathens, and morality was literally at its lowest ebb. The death-rate of the neighbourhood was 40 per 1,000, a rate nearly twice that for the parish of Bethnal Green. The area was 15 acres in extent, and the number of persons displaced was 5,719. The scheme was to demolish the old houses bit by bit; to form new wide streets, and to construct blocks of flats for the re-accommodation of as many persons as was consistent with due regard to health and sanitation. Under the laying-out plan, the area is approached by an avenue 60ft. wide, leading to a central open space in which is a bandstand where music is provided in the summer months. Streets 50ft. wide radiate from this centre. Blocks of dwellings have been erected for 5,380 persons, and 144 were accommodated in cottage dwellings. There are three public gardens between various blocks of dwellings of an aggregate area of nearly three-quarters of an acre. A central laundry is provided containing troughs, drying horses, wringing machines, and mangles, and behind the laundry is a small annexe containing 12 hot and cold slipper-baths and a shower bath. A similar scheme which has recently been under consideration is that decided upon with reference to a large area at Tabard-street, Grotto-place, and Crosby-row, Southwark and Bermondsey. This is the largest clearance ever embarked upon under the Housing Act, the area affected having a total extent of 17 acres, being about two acres more than at Boundary-street. The narrowness of the streets, the closeness of the houses, the defective planning, and the insanitary condition of most of the property, rendered it impossible to effect any lasting benefit to the area by dealing with individual properties. It was decided to deal with the matter on a comprehensive scale, and a plan has been prepared for this purpose. The central portion of the area, about five acres in extent, will be laid out as a public open space, and most of the rehousing accommodation will be provided in five-story balcony dwellings overlooking the open space. On a detached portion of the area as many cottages as convenient will be erected.

THE SUBURBAN DISTRICTS.

The housing hitherto dealt with has been confined to that undertaken in the central area, and the action taken in this direction has been guided by conditions which are more or less characteristic of most large towns. The population in the central areas has, however, become stationary, or shows a tendency to decrease, residential buildings giving place to those of commercial or industrial character. The population in the suburban districts, on the other hand, is rapidly increasing, and the only practicable course appears to be to take measures to control the outward flow of the population. This object can best be attained by securing cheap and rapid travelling facilities, and by the provision of cottages in outside districts within the means of the labouring classes. Given equal conditions, there can be no question as to the hygienic superiority and the greater attractiveness of housing the worker in a cottage with pleasant surroundings rather than in a block dwelling in a central district, to say nothing of the saving to the community.

TOOTING.

The first estate purchased by the Council for cottage development was at Totterdown Fields, Tooting. It has an area of about 38 acres, and 1,229 cottages and four shops have been built, accommodating 8,733 persons. The estate has been completely developed and is fully occupied.

NORBURY.

At Norbury, an estate of about 30 acres was purchased in 1901. Cottages have been erected on about 16½ acres of the estate, to accommodate 3,472 persons. The cottages are similar in size to those at Totterdown Fields, but the elevations are varied in design.

WHITE HART LANE, TOTTENHAM.

The largest scheme for the development of a cottage estate near London was that undertaken by the County Council when 226 acres of land were purchased north of the county boundary. The purchase price was £90,225, or at the rate of £400 per acre. Development of the estate has up to the present been confined to the extreme southern portion, where roads and sewers have been constructed sufficient to enable about 48 acres to be covered, and on about 36 acres (including three and one-third acres laid out as a public garden) 875 two-story cottages have been erected, providing accommodation for 6,835 persons. The accommodation provided is in three, four, and five-room cottages, each of which has its own front door and its own proper garden at the rear. The three-room cottages are let at 6s. 6d. to 8s. per week, the four-room cottages 8s. 3d. to 8s. 9d., and the five-room cottages at 9s. 3d. to 13s. per week. The cottages are readily let, a return for the quarter ended March, 1913, showing that the loss by empties was only .27 per cent. of the gross rent. A site has been reserved for administrative buildings, and a meeting hall for tenants. The roads are planned so that the majority of the blocks of cottages run north and south, and each frontage therefore receives direct sunlight. An estate garden is provided, turfed for tennis and bowls, and surrounded by raised terraces and flower gardens. The development of the remainder of the estate will be the subject of a garden suburb scheme. A working-class population already predominates in the district, and it was felt that it would be advantageous if a substantial portion of better-class property could be erected on the land. Authority has been given by Parliament for development on the lines of a garden suburb which will comprise various types of houses, including small cottages at a moderate rental, and larger houses suitable for middle-class occupation.

THE OLD OAK ESTATE.

The estate most recently purchased in London for working-class development is that known as the Old Oak Estate, situated on the western boundary of the county. It originally contained about 54¼ acres, but a railway company subsequently obtained running powers for a new line across the estate diagonally, acquiring nearly eight acres for this purpose. Development is now proceeding on the western section, which includes about 14 acres west of the proposed railway. Five shops and 345 cottages and cottage flats will provide accommodation for 2,413 persons. The size of the cottages will vary from five rooms down to a cottage flat of one room. The needs of small families of the poorer class requiring only one or two rooms were considered, and it was decided that as an experiment a limited number of tenements of one, two, and three rooms will be provided at very low rents. The smallest type of one-room cottage flat with a separate scullery and water-closet is let at a rent of 4s. per week. It is intended to restrict the occupation of such cottage flats to old married couples, or to two persons of the same sex, married couples with young children being excluded.

The time at my disposal has only permitted me briefly to sketch the salient features of the great work which has been carried out in the present century by the London County Council, and I am afraid that the subject has been treated in an imperfect way; but if I have given my audience the key to further investigation on the great question of housing the poor, I am more than satisfied.

KINROSS, LOCH LEVEN, AND ST. SERF.

By invitation of Sir Basil Montgomery, a party of members of Edinburgh antiquarian and architectural societies, under the leadership of Dr. Thomas Ross, architect, of that city, paid a visit to Kinross on Saturday for the purpose of seeing the mansion-house, Loch Leven Castle, and the less well-known island in the loch, St. Serf. In 1675 Sir William Bruce, the well-known architect of Holyrood Palace and of Hopetoun House, purchased the estate of Kinross from the Earl of Morton, and ten years afterwards he began to build from his own designs the mansion-house situated on the shores of Loch Leven. The erection of this house was an event of considerable consequence in the history of the domestic architecture of Great Britain. It is probably the earliest example of a type of mansion-house which became almost universal throughout the whole of the 18th century. The house proper, consisting of a central block, with porch, and slightly projecting wings, has at each end of the façade a circular colonnade terminating in pavilions. Internally it is divided along its length by a wall, with rooms on each side. This is the general plan of such mansions, with infinite variations in scale and richness of detail and size. In the case of Kinross there are two fronts of equal importance—one facing the long avenue from the town, the other overlooking the garden and loch. The party were struck with the lightness and elegance of the ornamentation of the Classic columns and pilasters and other details—Adam-like in appearance—both inside and outside the mansion; and it was recalled that the celebrated architects, Adam, father and two sons, were born in the locality, and had been trained under the Bruce influence. The garden wall at three points had also been made a subject of architectural treatment in order that an uninterrupted view of the loch may be had from the windows of the house; and several Classical summer houses in the garden, as also a number of statues in lead, are also features of interest. There is a tradition that the house was built in the hope that it would become a royal residence for James VII. of Scotland. It remained inhabited till the early years of the 19th century, after which it was desolate and unfurnished for 80 years. It was fast tending towards ruin when, some ten or twelve years ago, Sir Basil Montgomery restored it to something not far short of its original splendour, and at the same time the garden and grounds were set in order. In the house are several ancestral portraits by Raeburn, Romney, Hoppner, and other masters, and some Chippendale furniture.

Accompanied by Lady Montgomery, the party were, after an inspection of the house and grounds, ferried in motor-boats to the Castle Island, where Sir Basil Montgomery gave an interesting sketch of the famous fortress, and pointed out the parts of the ruined keep and castle which Mary, Queen of Scots, occupied during her captivity here from June, 1567, to May, 1568. This historic castle is the private property of the lairds of Kinross, and upon its upkeep considerable sums of money have been expended, both by the late Sir Graham Montgomery and by his son, the present proprietor. At present the ruin is well maintained.

The party then visited the low, sandy, treeless island of St. Serf, where there are the remains of a Celtic church dating from about the 6th century. Of the ancient priory of Loch Leven, dedicated to St. Serf, the only remains are part of the four plain walls of a small chancel. On the west side the nave opening, though now filled up with masonry, may still be traced, and at the east end, under the grass, the foundations of an apse were at one time said to have been uncovered. The ruins of the nave and of the domestic build-



GOTHIC LIVERY CUPBOARD IN OAK, FROM FARM NEAR TICKENHALL MANOR, SHROPSHIRE.
Formerly belonging to Arthur, Prince of Wales, eldest son of Henry VII. Presented by Mr. Robert Mond, F.R.S., to the Victoria and Albert Museum, S.W.

ings of the priory may be noted all around in irregular heaps, covered with rank vegetation awaiting the spade of the antiquary. On the return from St. Serf Professor Baldwin Brown and Mr. Moir Bryce thanked Sir Basil and Lady Mackenzie Montgomery for enabling the party to spend a day among scenes of such antiquarian and historical interest.

NATIONAL ART TREASURES ACQUISITION REPORTS.

[WITH ILLUSTRATIONS.]

It goes without saying, and the ninth annual report just issued confirms the fact, that the National Art Collections Fund, of which King George is the patron, has hitherto accomplished, and is still doing, in a quiet way, most excellent work by supplementing the occasional and none too ample grants made from time to time by the Government towards the acquisition of choice examples of art for our public galleries and national collections. Official bodies are proverbially slow, and are too frequently hampered by a variety of causes which seem vexatious, when speedy purchases are called for. This possibly natural inability to act quickly displayed by the trustees controlling such institutions is confirmed more than often by lack of money, precluding all chance of acting quickly by seizing opportunities for securing treasures of unquestioned importance as they occur. No doubt caution is the indispensable duty of all trustees, and errors incidental to precipitant judgment probably are sometimes avoided thereby, but precaution inevitably encourages delay just when swift decision is most imperative. Some of these authorities are too prone to predilections for some particular type of design, or a particular period of art, while officials are also concerned who invariably have to be approached diplomatically, owing to personal or other reasons which we need not here enumerate, with the result that instead of being able to determine each case on its individual merits, the business becomes readily involved in a controversy which encourages concerted opposition to anything like immediate action. The National Arts-Collections Fund, conducted under the chairmanship of the Earl of Crawford and Balcarres, aided by a strong representative committee consisting of men distinguished by their mature judgment in such matters, and having the help of Sir Isidore Spielman as acting honorary secretary, supplies the qualifications so necessary for the effective furtherance of the initiative, and by being first in the field exercising, as it best can, the catholic knowledge of a body of experts in



the varied departments of the Fine Arts. In this way only is it at all likely that such treasures of artistic importance can be secured whenever they chance to change hands, either by private treaty or in the open market, and thereby forestalling other equally alert competitors, who for the most part act for wealthy collectors in foreign countries, and notably in America. Great works of art are necessarily few in number, and no artificial stimulus can increase their quantity.

During the past twelve months this Fund has been largely instrumental in acquiring for the nation several excellent samples of very different kinds, though there appears to have been no sensational acquirements comparable with Holbein's "Duchess of Milan," bought in 1909, or of "The Adoration of the Magi," by Mabuse, which signalised the purchases of 1911. We have the satisfaction of recording the addition of Sir George Hayter's historic large group of 180 portraits included in the oil painting illustrating "The Trial of Queen Caroline in the House of Lords," and dated 1823. This historic canvas has been presented to the National Portrait Gallery. Of an entirely differing interest is the pair of marble figures from China, exported last year, of military mandarins intended to be used as tomb guardians. Such sculptures are very uncommon, and were unrepresented in the Victoria and Albert Museum. They are most extraordinary in design. Both statues wear high hats with narrow brims and elaborately embroidered robes, their decoration being finished in modelled detail. They are rather less than life size, and date from the Ming dynasty about the 15th century. They are unique specimens in London of such Oriental sculpture, and are to be seen to the left of the main entrance in the west hall of the Victoria and Albert Museum, to which the Fund presented them at a cost of £200. The Gothic Livery Cupboard in oak here illustrated was formerly the property of Arthur, Prince of Wales, eldest son of Henry VII. This also has been given to the same collection. It came from a farm between Tickenhall Manor and Ludlow Castle, on the borders of the Marches of Wales, where Henry VII. built his son a residence at Bewdley. Here the Prince held his court and to this place, in 1502, only five months after his marriage with the Princess Catherine of Aragon, he died in the 16th year of his age. The Perpendicular Gothic traceries of this cupboard, and its open-work panels of the front, are alternated by single ostrich feathers, and also the use of the letter A, very similar to the details of Prince Arthur's Chantry in Worcester Cathedral. Mr. Robert Mond, F.R.S., contributed this piece through the good offices of the Fund. "Livery cupboard," of course implies that it was employed for food-handed (liv'ree), for the use of the Royal Household servants. It was only recently discovered in the old farmhouse in Shropshire, as already mentioned. It measures 5ft. 4in. high by 4ft. 1in. wide, and is 2ft. deep.

The sum of £30 purchased the original Plaster Sketch by Alfred Stevens, here illustrated, for the semicircular top of the overmantel in the saloon at Dorchester House, Park Lane. The chimneypiece itself is executed in Carrara marble. This exceedingly beautiful specimen of modelling is 4ft. 6in. long by 2ft. 6in. tall in the centre. In execution the design was added to by candelabra pilasters crowned by torch flames on either side, and a winged ornament was used at the top. This example is now in the National Gallery of British Art at Millbank (Gallery 18). Perhaps the most important addition of English woodwork made during the year to the Victoria and Albert Museum is the Early Georgian Panelled Room from 27, Hatton Garden. The house occupied the site of the garden of Hatton House, Holborn, built by Sir Christopher Hatton, Lord Chancellor in the reign of Queen Elizabeth. The Georgian house in question was erected by Thomas Miller in 1729, on land leased from Viscount Hatton. After his death in 1762 the Hatton Garden Estate was sold, and in 1785 this "capital brick dwelling (exceedingly well fitted)" passed into the family of Garle. In 1851 it was acquired from this family for the use of the "City Orthopædic Hospital" by Mr. Chance, a specialist surgeon, and in 1891 the hospital trustees purchased the house, which was pulled down in 1907. The present room in question was exhibited at the Franco-British Exhibition five years ago. Its design is attributed to James Gibbs, and dates about 1730, just after the completion of St. Martin's-in-the-Fields by the same architect. It measures 23ft. by 22ft., and the panelling is of dark pine, elaborately carved, specially the chimneypiece, wall cupboards, and doorways. The Fund purchased this splendid example (with the help of subscribers, including Sir William Lever, who gave £25) for £400, from Messrs. White, Allom, and Co., who sold the room for the price they paid for it.

The principal acquisitions during 1912 to the Victoria and Albert Museum are concisely reported on by Sir Cecil Smith, the Director, in an excellent little book, with many illustrations, published for one shilling at his Majesty's Stationery Office. This "Review" is most interesting. The outstanding purchases in the Architectural and Sculpture Departments during the year were made from the funds of the Murray Bequest, and among these are two beautiful angels by Tilmann Riemenschneider and the small wood group of "The Deposition." Little more than £200 was spent out of the ordinary museum grant during the year, but this included the Early 14th-century sandstone figure of a knight of the De Lucy family in full armour, decorated with gesso, painted and gilt, lately excavated on the site of Lesnes Abbey, Kent, and also this £200 included a pair of English alabaster figures of St. Christopher and St. Etheldreda (?) of the 15th century, delicately decorated in gold. They were made to stand as part of an altar-piece between the usual "Tables." Under the heading of Department of Woodwork, the Hatton Garden

House panelling is described and illustrated as one of the principal gifts to the museum, as above mentioned, and a small photograph view appears also of the livery cupboard already alluded to. It is entirely free from modern restoration, and its face still retains traces of vermilion colouring, which in all probability once enriched the exterior, like much sculpture and architecture of the Middle Ages. From the Design section the most noteworthy individual purchase of the year is a design for a Bishop's "Crosier," attributed to Jacques Androuet Du Cerceau (b. about 1510, d. about 1585), and it dates about 1533, at which time this artist is known to have made a number of designs for ecclesiastical goldsmiths' work; one by him of a retable is in the Foule Collection, and is dated 1534. This fine pen drawing of a crosier at South Kensington is quite one of the best for goldsmiths' work possessed by the Department. It is a full-size detail, 22¾in. high, the crook being 7in. A sectional plan makes it a perfect working draft, illustrating a curious mixture of Gothic traditional ornaments, typical Renaissance patterns, and architectural details. The Christian personages are associated with pagan grotesques and myths. The draughtsmanship is firm, and clearly illustrates the designer's intentions. Mr. Murray Marks has given a richly-decorated French 14th-century oak casket of exceptional value, with copper gilt mounts set with armorial bearings in champlevé enamel in medallions. Dean Swift's Writing Cabinet, illustrated in Macquoid's "History of English Furniture," is of early 18th-century date, in figured walnut and marquetry, of ebony and holly, a most uncommon piece. The Fund purchased another example of rare character, viz., a pair of English oak doors, painted about 1500 with orders of angels. They were brought from Northamptonshire, but nothing is known of their history. We can only name one further example of cabinetwork. It is an artist's table in the style of Chippendale (third quarter of the 18th century), with flat strap-work, and made in mahogany with a top ingeniously fitted with an adjustable slope. The front pulls out, disclosing in the interior an arrangement of compartments for artists' materials, making a most interesting piece, the front legs being divided vertically so as to support the pulling out part when open.

THE ESSENTIAL AND THE NON-ESSENTIAL IN PURE WATER.*

Such standards of purity as have been tentatively advanced in the past are purely technical in character. The ordinary sanitary analysis, on which such standards are based, consists of a long list of determinations, both qualitative and quantitative, and the usefulness of many of them is supposed to lie in the information they afford with respect to whether the water has ever been polluted with animal excrement, and when and in what quantities. If it be assumed that water is free of pathogenic bacteria, and it can be shown that mere organic and mineral matter does not deleteriously affect the health of the consumer, what possible good can come from laboriously and expensively analysing water for "oxygen consumed," "nitrites," "nitrates," "chlorine," and "total solid matter"? Why would it not be much better to restrict the ordinary chemical analysis to the really important, although simple, determinations, such as taste, odour, colour, and turbidity, in order to establish the range in its physical characteristics, and for suspended matter, iron, and hardness to furnish a line on the really essential features of its chemical make-up?

How many waterworks are supporting laboratories at no small cost, for the purpose of filing file after file with the results of chemical analyses which not only are incapable of definite interpretation, but which would be of no aid to the superintendent in the operation of the works if they were? In many cases such laboratory work is continued as routine because similar work is done in so many other waterworks laboratories.

Therefore, why not pay more attention to the recording only of such important data as will give clear, continuous, and valuable information that any waterworks superintendent can understand, and which will serve as a reliable guide in the operation of the works under him? It is astonishing how much really valueless information is available on the nitrogen content of waters, and how comparatively little on colour, turbidity, and hardness. The filtration man does not strive for the removal of nitrogenous matters from water, per se, but he certainly bends every effort to the removal of colour and turbidity, and very often, too, of hardness and iron. Let us now consider briefly of what real value is the chemical analysis so commonly carried out as routine work in the waterworks laboratory, taking up each determination in the order in which it usually appears on the record sheets.

VALUE OF CHEMICAL ANALYSIS.

Temperature observations are of some value in connection with the operation of a filtration plant, because it is well known that all filters do their poorest work during cold weather, and where coagulating and softening chemicals are employed in water treatment it is equally well known that the coagulating and softening reactions are measurably slowed up by low temperatures, and accelerated by high temperatures. Temperature observations at different depths in ponds, lakes, and reservoirs often furnish valuable information with respect to stratification, etc., and readily explain the reason for the periodic unsatisfactory appearance and taste of some waters, due to spring and autumn "overturn."

TURBIDITY.

The ordinary citizen does not look with favour on a water which is turbid; that is, carries in suspension mud, silt, and clay in quantities sufficient to impart to it a marked cloudiness or a distinct muddy appearance. It is not so much a case of whether such matter is actually injurious as that it is not agreeable to the sight, and promotes other æsthetic prejudices such as those against taking into the system so much actual mud and dirt. Therefore, in all up-to-date cities where the water-supply is turbid it is the custom to treat it in some way before delivering it into the mains, in the endeavour to remove the turbidity and make it agreeable to the sight.

COLOUR.

Many first-class water-supplies are highly coloured. This yellowish colour originates for the most part in vegetable extractions, and where stains are usually prominent. Such colour has no sanitary significance, but offends the æsthetic sense of sight, and it has become the custom in large cities to use every reasonable effort to effect its removal before the water is delivered into the mains. Bacterial decomposition of the deposits on the bottom of some lakes deprives the lower strata of their oxygen, and such layers become highly coloured. With the periodic appearance of the "overturn" in spring and autumn these coloured layers are brought to the surface, distributing the colour throughout the entire body of water. Furthermore, under the anaerobic conditions sometimes existing at the bottom of lakes and ponds, iron is thrown into solution. On being brought into contact with air this iron is oxidised, imparting to the water a reddish brown colour. Under ordinary circumstances sun-bleaching is actively felt for a depth of about 1ft. below the surface, and in a month's exposure to the sun's rays the colour removal will amount to about 20 per cent. By treating coloured waters with chemicals all vegetable stains can be removed. Ozonisation and the use of oxygenated compounds of calcium, sodium, or chlorine will effectively decolourise water; but their high cost is usually prohibitive, were there no other objections to these forms of treatment. Filtration of coloured water through clean quartz sand will not effect measurable decolourisation, and it is well known that without the aid of a coagulating chemical slow sand filters will not consistently remove more than about 20 per cent. of the dissolved colour in water. The most efficient and satisfactory method of water decolouration is by coagulation, followed by filtration.

TASTE AND COLOUR.

Objectionable tastes and odours are sometimes naturally imparted to water through the growth of certain forms of microscopical life, and when such are recorded in the laboratory are followed by the taking of prompt measures to correct them, such as the application of copper compounds and the like to the affected water in the lakes and reservoirs on the collecting and distributing system. Such tastes and odours have no sanitary significance, but are æsthetically objectionable. In some cases certain industrial wastes discharged into the water above the intake will impart an offensive taste and odour to it. The routine test at the laboratory should furnish reliable data in this line, and allow such odours and tastes readily to be traced to their source, and thus make their elimination possible.

NITROGEN.

All organic matter naturally passes through a cycle of changes before arriving at the final stage of nitrate or saltpetre, and free and albuminoid ammonia, as determined in the chemical analysis of water, represent the nitrogenous organic matter in its earlier transitional stages. The presence in water of nitrogen in this form furnishes circumstantial evidence of its prior pollution, since fecal matter invariably contains such products. The word "circumstantial" is used advisedly, for the reason that vegetable matter from swampy areas, although remote from sources of animal pollution, often contributes nitrogen in these forms in considerable quantities. As such it would, of course, have no sanitary significance. By some it is considered that the ratio between free and albuminoid ammonia serves as a fairly accurate guide in determining the character of the organic matter contributing it, and that a high free-albuminoid ammonia ratio coincident with a low chloride and nitrates characterise vegetable organic matter; and, conversely, that high free ammonia with high amounts of chlorides, characterises animal organic matter. In a very general way this is true; but since by chemical analysis one can obtain from vegetable matter precisely the same combination in free and albuminoid ammonia, nitrites and nitrates, that come from the analysis of water polluted with animal excrement, the evidence furnished is certainly but circumstantial. And, after all, of what sanitary significance is mere organic matter, whether animal or vegetable, in the absence of specific germs of disease? Eliminating the æsthetic phase, and the possible effect of imagination on the human organism, it actually has very little sanitary significance, as will be shown later on.

CHLORINE.

The chlorine found in water is not of particular sanitary significance; but inasmuch as sewage and domestic wastes contain large amounts of salt, its presence in water-supplies indicates that it may have come from such sources. The water-supplies of seaboard cities, even when unpolluted, are normally higher in chlorine than unpolluted inland supplies, due to the salt blown in from the ocean. In certain inland localities unpolluted water-supplies are high in chlorine, due to mineral deposits in the soil. Therefore, like nitrogen, high amounts of chlorine in water merely furnish circumstantial evidence of dangerous pollution.

TOTAL SOLIDS.

When a sample of water is evaporated to dryness the dry residue represents the total solid matter which the water originally contained. This includes, not only the matter in suspension which rendered the water turbid, but matters in solution. The results have little or no sanitary significance.

VOLATILE SOLIDS.

When the dish containing the "total solids" is heated the so-called "volatile" solids are burnt up. These are supposed to represent the organic matters present in the water, and some analysts attempt to characterise these by their charred appearance and

* Abstract of a paper by Mr. Geo. A. Johnson before the American Water Works Association.

odour when burning. Such determinations have little or no value in water analysis.

HARDNESS.

Water, in its passage over and through the soil, dissolves and picks up certain minerals, among the most common being lime and magnesium. These give to the water its hardness. There are two kinds of hardness—namely, temporary and permanent. The carbonates of lime and magnesium, held in solution by the dissolved carbonic acid in the water, constitute the temporary hardness and may be almost completely softened by boiling. Waters which, in addition to dissolved carbonates, contain in solution calcium and magnesium sulphates, chlorides, or nitrates, cannot be effectively softened by boiling. Such hardness is termed permanent.

It is difficult to set a maximum limit for the amount of hardness a water may contain and yet be considered satisfactory. In the lake cities a total hardness of 100 parts per million is considered satisfactory, yet such a hardness in Eastern Atlantic cities would be considered unsatisfactory. At Columbus, O., where the total hardness of the raw Scioto River water ranged from 41 to 372 parts per million, and averaged 222 parts during the year 1912, the water is softened, and the endeavour is always to deliver to the consumers a water having a total hardness of 100 parts per million or less. In 1912 the actual hardness of the Columbus tap water averaged 79 parts per million. Hardness determinations are highly important, and should be carried as routine in all waterworks laboratories. By determining the total hardness and the alkalinity (the difference generally representing the permanent hardness) an excellent line is afforded on this important characteristic of water. The records are of value in settling discussions as to the advisability of softening the water; in soap consumption; on its utility for various industrial purposes, and on its suitability for steam raising. Where a coagulating chemical is used in the purification of a water-supply it is indispensable, owing to the fact that a certain amount of alkalinity is required to decompose every grain of added coagulant; otherwise, if the alkalinity be deficient, coagulation will be unsatisfactory and undecomposed coagulant appear in the treated water; an inadmissible condition. The sanitary aspect of hardness will be referred to later on.

IRON.

Practically all natural waters contain iron. The soil contains iron in the form of sulphide or oxide. Being dissolved out in water it may be present as an oxide, a carbonate, or as "humic acid," the original organic compound which holds ferric oxide in solution. Ferric oxide can be removed by sedimentation and filtration; ferrous carbonate by aeration through the opportunity thus afforded for the escape of carbonic acid; and if the iron happens to be in combination with organic acids, the addition of alkalies will break up the loose combination and liberate the iron. Generally speaking, no water can be considered entirely satisfactory which contains more than about one part of total iron per million parts of water. Even a less quantity than this is desirable, as a taste is sometimes perceptible in water containing around one part of iron.

CARBONIC ACID.

The determination of free carbonic acid in water is of importance, as it is well understood that it is an active agent in the corrosion of metals, particularly iron and lead. "Red water" troubles are often to be laid at the door of free carbonic acid, in some measure at least, and where it is present in relatively large quantities steps are often taken to remove it by adding lime to the water. Where coagulating chemicals are used, particularly where lime is not employed with the salts of iron and aluminium which are more commonly used as coagulants, the determination of free carbonic acid furnishes valuable information, as with each grain of added coagulant there is a corresponding increase in the amount of free carbonic acid.

Eliminating from discussion for the time being all forms of bacterial and other microscopic life, let us consider the evidence bearing on the sanitary significance of the more common constituents of water, as determined by chemical analysis.

PHYSICAL FEATURES.

Under this heading, of course, come taste and odour, colour and turbidity. What effect on the health of the consumer have these features as applied to water? A water heavily charged with mud will naturally possess an argillaceous or clayey taste and odour, the same being intensified on heating. This is not agreeable to many. Assume that a water contains on the average 100 parts per million of suspended matter. In a year's time an adult will consume in this way about 1-7lb. of such matter, or some 5lb. in a lifetime. This quantity in itself cannot be considered as having any sanitary significance.

Water which is naturally highly coloured sometimes possesses a slight astringent taste, but such colouring matters, being vegetable stains for the most part, can have no deleterious effect on the health of the consumer. Some waters possess offensive tastes and odours, due to growths in them of certain higher forms of microscopical life, and due to the liberation by them of essential oils in process of their development or decay. These are relatively small in quantity, and cannot in themselves actually cause serious disturbances in the body of the consumer. Some waters are so heavily polluted with certain industrial wastes as to give them a highly objectionable taste and odour. Probably the most prominent in this line are waters tainted with the waste liquids resulting from the destructive distillation of wood and coal. Creosotes, phenols, and similar compounds are especially offensive and far reaching. A very few drops of creosote will impart a marked taste to a gallon of water.

Now as to the sanitary significance of such substances in water. Let us assume that the 200lb. of creosotes and phenols were all pure creosote. The medicinal dose of creosote may safely be taken at ten drops. To get a single medicinal dose from water polluted as above it would be necessary for one to consume over thirty gallons of the water. Furthermore, creosote is not a cumulative poison, but is rapidly excreted through the pores of the body, leaving nothing behind. Finally, then, those physical characteristics natural to many surface waters which lend to them an unsightly appearance, or an objectionable taste and smell, are of actual injury only in so far as they may affect the individual imaginatively. This feature is not to be disregarded, however, for there is no doubt that many thousands of people actually have thought themselves into the grave. One of the first lines of common-sense water logic, therefore, is that drinking water shall be free from perceptible quantities of colour and turbidity, and that it shall possess no disagreeable, or actually foreign, tastes or odours.

ORGANIC MATTER.

Under this heading, although it may not be precisely correct, we will include all nitrogenous matter, such as free and albuminoid ammonia, nitrites and nitrates; and carbonaceous matter, such as "oxygen consumed" and the like; in short, all organic matter found in water, both of vegetable and animal origin, whether derived from human or animal excrement or from the wash of woods and fields. It is necessary at this point only to eliminate living bacteria from the discussion. They will be considered later on. There is nothing in the complex compounds of organic matter commonly found in water-supplies which need give alarm to the water consumer. Prior bacterial decomposition of such matters, doubtless, is instrumental in producing certain ptomaines, which in sufficient quantity would exert in some degree a toxic effect on the human organism. But while such conditions might be conceived of in sewage, in water, even after it has received sewage up to the limit of its powers of digestion, the dilution of such substances is too great to warrant serious consideration being given to this feature.

CHLORINE.

The effect of chlorine on the public health in the quantities and as found in water is nil. The average individual consumes at the table each day many times as much salt as is ever present in a drinking-water supply.

HARDNESS.

It is the contention by some physiologists that those constituents which make water hard are deleterious to the public health. In some cases this view would seem to have considerable merit. The traveller is unpleasantly reminded of the effects of abruptly changing from a soft to a hard water, and vice-versa; but there are no statistical data to prove that in general the hardness of a water has any clearly defined effect one way or the other on the public health. Although it is strongly maintained by some that various specific diseases, such as urinary calculi, goitre, etc., are produced by the continued use of very hard waters, the confirmatory data to prove out this view are lacking. It it much more probable that the effect of hard waters is really restricted to simple gastric and intestinal disturbances, which are temporary only in their effect.

IRON.

The chief objections to iron in a water-supply, from a sanitary standpoint, are its undesirable taste and appearance, when present in sufficiently large quantities. Where it comes from the source of supply it can readily be removed by aeration and filtration; and when it comes from the service pipes, through the corrosive action of carbonic acid or other agents, corrective measures have to be taken before the water is delivered into the mains. The sanitary significance of iron in water may be considered as nil, for when present in large amounts its undesirable taste would preclude its use.

MICROSCOPICAL EXAMINATIONS.

Water-supplies are examined for the higher forms of microscopical life as a routine procedure in but few places. In the majority of cases such examinations are carried on only at times when the water possesses objectionable tastes and odours, the endeavour being at such times to locate and identify the organism which is causing the trouble. Knowing the kind of organism, it is relatively easy to destroy it at its source through chemical treatment.

BACTERIA.

It is the almost universal custom in waterworks laboratories to make daily analyses of the water-supply for total numbers of bacteria; in some the number of bacteria developing on special media at body temperature is also determined; and in many presumptive tests for B. coli are carried as daily routine. There is no question that the results of bacterial analysis are of more value in determining the hygienic quality of a water than the entire chemical and microscopical data laboriously and expensively obtained.

Bacteriology is a comparatively new science, and by no means a precise one. It is a matter of common knowledge that with the methods of analysis of to-day the bacteriologist can isolate and positively identify specific disease germs only with the greatest effort and difficulty, and even then it is of primary importance that their number and virulence be also known before the water can justly be condemned. The finding in water of germs known to be associated in one way or another with disease-producing germs furnishes valuable circumstantial, but nevertheless, indefinite, evidence. Sometimes the presence of comparatively large numbers of bacteria in water has no sanitary significance whatsoever. This is true even when the evidence is quite positive that among the number are forms whose best known habitat is the intestines of man and domestic animals. Waters draining uninhabited areas, and therefore far removed from opportunities of pollution, particularly where the areas drained are swamps, sometimes show high numbers of bacteria.

The test for B. coli is the usual way the present-day bacteriologist has of ascertaining the relative purity of waters, also of forming a judgment of the purity of an individual water. This organism is the normal in-

habitant of the intestines of man and some domestic animals, and of course is always present coincidentally with the typhoid germ when a person is suffering from that disease. It is equally true that in the vast majority of cases where B. coli is found in water the typhoid bacillus is absent. Therefore, where B. coli is found the inference that B. typhosus is or may be present funishes circumstantial evidence purely, yet because the typhoid bacillus may be isolated from water supply with the greatest difficulty, and because the reverse is true of the colon bacillus, the presence or absence in water of the latter organism is looked upon as the surest index of sewage pollution available to modern water bacteriology. But the colon bacillus found, even if the number of coli be large, may have come solely from the excreta of domestic animals, or even from fish, and such animals do not suffer from typhoid fever. Again, the bulk of the coli may come from the excreta of perfectly well persons, and where a water is contaminated with city sewage this is always the case. So its presence in water merely furnishes evidence that it has been polluted with animal excrement; that typhoid fever germs may be present, but no proof that they are.

A water may contain a few stray coli and yet be perfectly safe to drink, for they all may have come from domestic animals. Furthermore, coli may have entered a water months before, even accompanied by typhoid germs; but both of these organisms, being out of their natural habitat in water, quickly become attenuated and lose their virulence. In judging water on the presence in it of B. coli, it is necessary to possess a knowledge of the number of these germs and of their vitality, in order that it may be known whether the pollution is recent, in what relative amount, or if it occurred a long time in the past and the germs found represent the attenuated survivors of those which entered the water originally. The numbers of bacteria in a water and the results of the test for coli have definite, though limited, value. High numbers of bacteria and the persistent appearance of B. coli can only mean a dangerously polluted water. Not that it is actually unsafe to drink all of the time, but that at any time it may become so. Low numbers of bacteria and no coli can only mean a water of high sanitary purity. The absolute value of bacteriological examinations is difficult to express except in this manner. B. coli may be present in a water every day for weeks and months on end and the water be perfectly safe. Almost all of the supplies show evidence of prior contamination. The mark is there but what does it signify? Compare Kansas City with New York. We know that the water supply of the former, with either its high turbidity or hardness, would not be acceptable to the water consumers of New York City, yet the bacterial results at Kansas City make a more satisfactory showing, and the typhoid fever death rate in the two cities was virtually the same in 1912.

It is unnecessary to go farther in a discussion along comparative lines. A supply which is satisfactory in one city would be held as unsatisfactory in another, although both are safe to drink. Communities accustomed to turbid or coloured waters do not instinctively rebel against them, but only after they have seen and drunk clear and colourless waters. With hard water it is the same, but in a less degree, for the householder is aware that here lies the reason for high soap consumption, and the steam raiser objects because of the cost of keeping his boilers free from incrustation and corrosion. But in a general way that is all. We must acknowledge that it is not feasible to obtain from surface sources public water supplies which are free from all evidences of sewage contamination; but there is no reason to doubt the entire feasibility of so purifying contaminated supplies that they will be safe and wholesome. Such purified waters will still contain in reduced quantity the original sewage matters, but are made satisfactory to all the senses, and from a physical and chemical standpoint may justly be accepted as reasonably pure and entirely wholesome waters.

As to the bacteria; no matter what their significance, as shown by the usual sanitary analysis, sedimentation and filtration will reduce their original number to a relatively small residual, and sterilisation effectively will remove the last vestige of potential danger which the contaminated water originally possesses. Therefore, what matters it, within the limits of reason, how contaminated the water was originally, if by purification, which is called for in connection with practically all surface waters, we can obtain at moderate cost a clear and colourless water, one which does not possess objectionable tastes and odours, and one in which bacterial life is reduced to a practical minimum? Is such water not to be classed as "pure and wholesome"? It certainly may justly be termed "wholesome," and reasonably "pure," since its consumption is conducive to health, even though the strict and generally accepted interpretation of the word will not allow us to term it absolutely "pure."

The writer lacks the temerity to set down a list of standards of purity for public water supplies; but after what has been said above he does not hesitate to say that in his humble opinion "pure and wholesome water" should mean water which is free from noticeable turbidity and colour, offensive tastes and odours, and forms of bacteria known to produce disease. Waters which in their natural state or by purification cannot be made to comply with this standard are without the pale. The writer submits that a water reasonably free from colour, turbidity, and objectionable tastes and odours is not impossible, or even difficult, of achievement; nor is it difficult to pass judgment on a water that does not comply with these requirements. With the bacterial requirement it is vastly different, for the reason that modern methods of bacteriological analysis are not sufficiently precise and speedy to allow of the ready detection of disease germs in water. How, then, is it possible to meet this most essential requirement in the light of the existing bacteriological methods? Until the typhoid bacillus and other germs which may produce disease can promptly and certainly be detected in water, it cannot be done. Would it be heresy to say that B. coli may be found in a water day after day and month after month, even in 1c.c. volumes, and yet that water be perfectly wholesome and innocuous? Such a condition can be imagined, even realised, for to become a producer of typhoid fever there would be required among those persons contributing the coli persistently found in the water an individual suffering from typhoid or convalescent from that disease. Indeed, the coli might all come from the harmless excrement of domestic animals, the same being used as fertiliser on the water-shed and washed into the stream at time of rains and thaws.

B. coli when found in water is a danger signal. There is no doubt about that. The more that are found, and the oftener they are present, indicates increased and continuous contamination. It does not prove; it furnishes circumstantial evidence that the water may contain germs of typhoid fever. The greater the pollution the larger must be the number of people contributing to the pollution. Hence, by increasing the number of people the danger is proportionately increased, because of the greater number of individual possible sources of typhoid fever. Therefore, the number of coli present in a water is of significance, yet with one colon bacillus there may be a typhoid, and with a hundred, none. In the New York water supply in 1912, B. coli was found in 10 per cent. of the 1c.c. samples examined; in 3 per cent. of the samples of the same volume at Cincinnati; at Columbus daily tests of this volume showed it to be present only on two occasions during 1912; and at Minneapolis and Pittsburgh it was never present. The typhoid fever rates in those cities that year were 10, 7, 19, 11, and 6. What absolute proof is afforded by the above colon results with reference to the typhoid fever death rate, which, after all, is the surest index of the hygienic quality of a water supply? Where water is filtered and made satisfactory on physical grounds, there is absolutely no excuse for the persistent presence in it of living B. coli or typhoid fever germs when hypochlorites or other effective germicides are employed as a finishing touch in the purification process. But, nevertheless, if they do not appear at times the water cannot, without other good reasons, be condemned as unsafe to drink.

Careful filtration followed by sterilisation presupposes among other desirable features a water of high bacterial purity, and by these means, provided the purification processes are carried through with skill and continued vigilance, everything within the reach of modern practice has been done to remove the impurities it may have contained; and it is plain that such purified water cannot be denied a place in the class of reasonably pure and wholesome waters.

WEBB'S "VALUATION OF REAL PROPERTY."

The third edition of this well-known and most useful manual, just issued by Crosby Lockwood and Son, price 7s. 6d., has the advantage of revision by Mr. Arthur Hunnings, F.S.I., the rating surveyor to the borough council of Hackney, and whose lucid lectures at the Northern Polytechnic Institute some of our own readers have probably appreciated.

The changes under the Finance Act and its amendment, have, of course, necessitated the recasting of the chapter on Land Values Taxation. There is also an entirely new chapter on Tithe Rent Charges, and numerous minor improvements have been effected, and several additional examples are given.

The general result is that a work which has always been recognised as one of the best of its kind will deservedly obtain still wider circulation.

COAST-EROSION AND PROTECTION.*

Probably few but the maritime engineer realise that the configuration of the British coast-line is never the same for two days together, and that while on some parts of our coast accretion is taking place very rapidly, on others—on the East coast especially—erosion is very formidable. As the borough engineer of Bridlington, Mr. Matthews has had many years' experience in the carrying out of sea-defence works, and his book is practical and thorough.

Special consideration is given to methods of construction in reinforced concrete, and comparisons of cost are stated; but the merits and demerits of all forms of sea-defences are fully discussed.

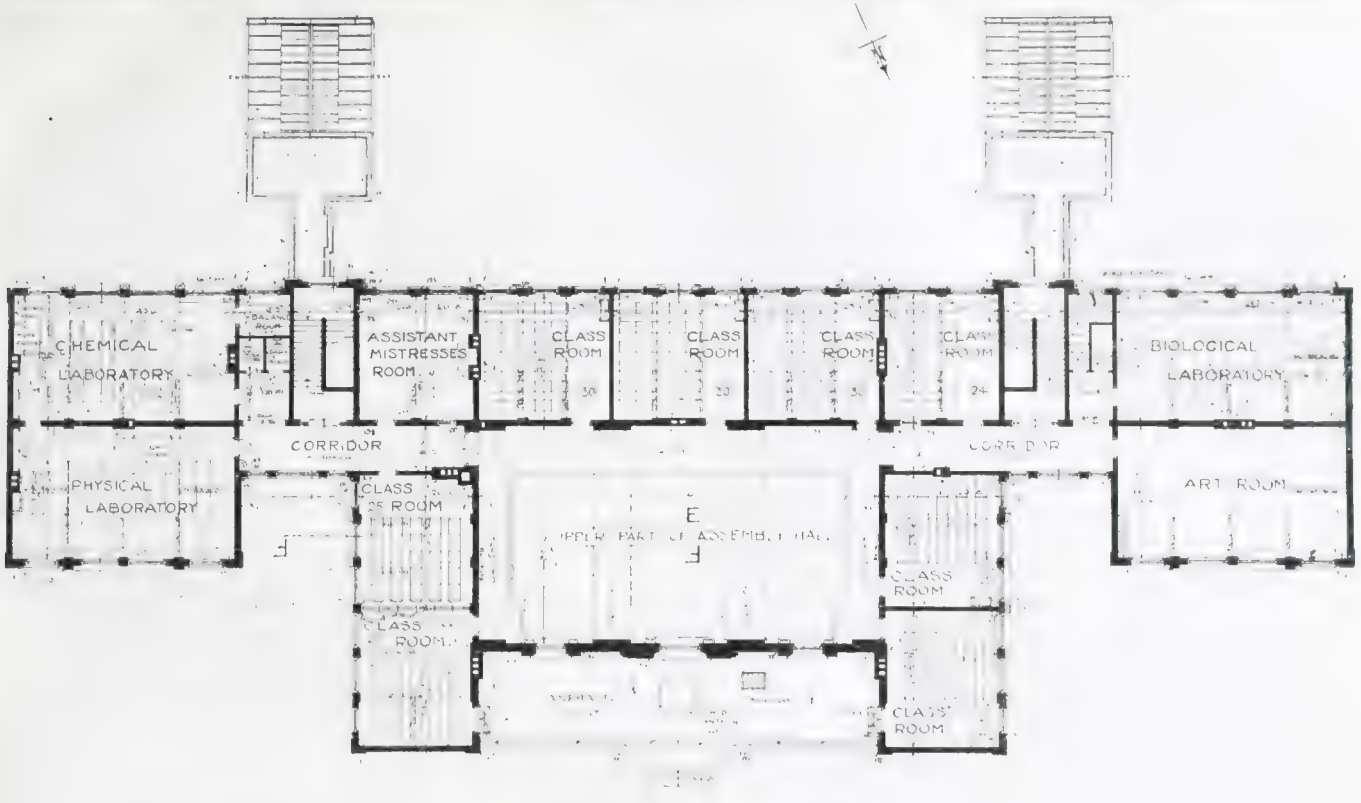
The book is mainly based on a series of articles contributed to *Engineering*. The illustrations are numerous and good, and the work will prove valuable to all civil engineers and students, and especially to those whose lot is likely to be cast among the real defenders of our native land against an enemy more ruthless than Time, and more to be dreaded than any of the bogeys of our panic-mongers.

STREATHAM COUNTY SECONDARY SCHOOL FOR GIRLS.

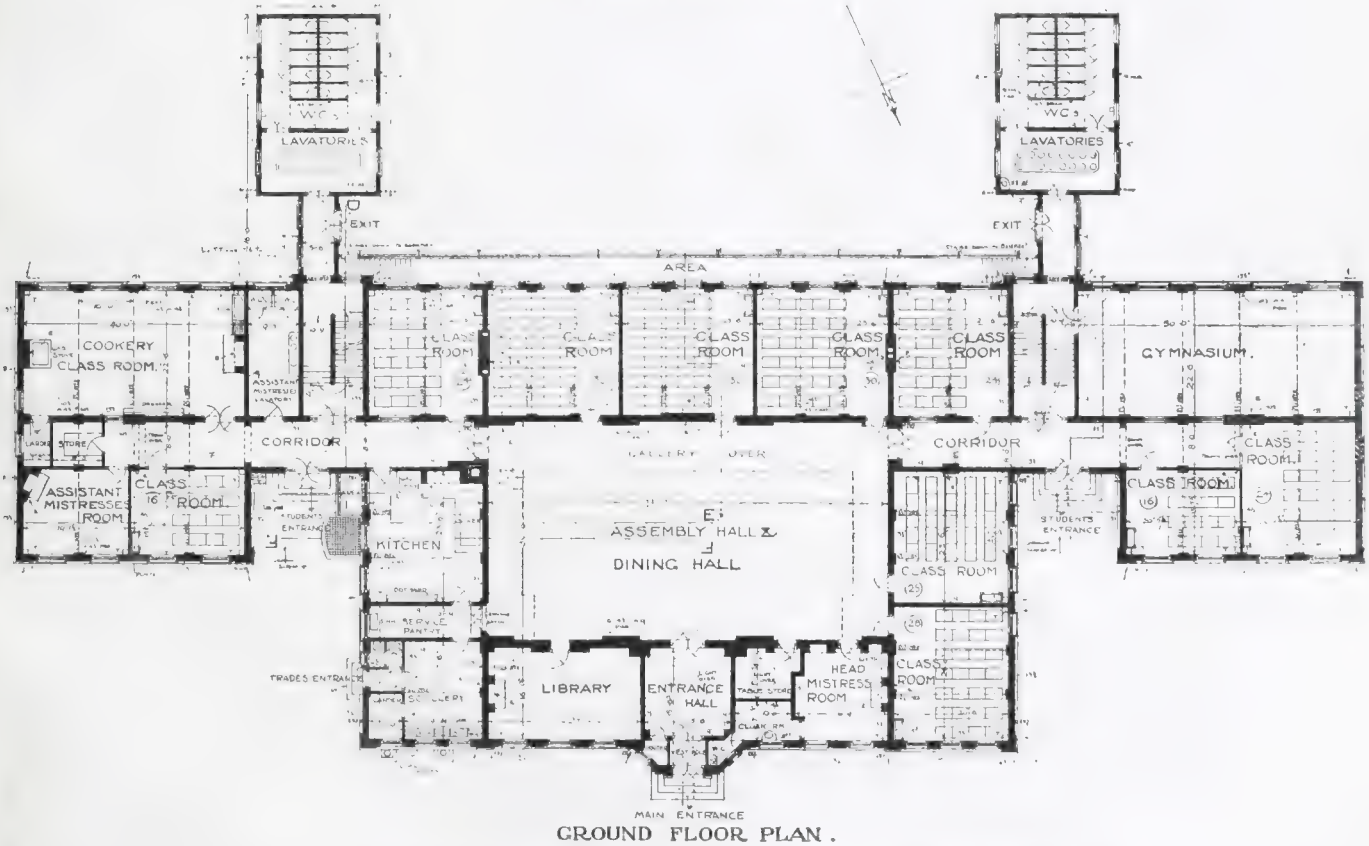
[WITH ILLUSTRATION.]

This school has been erected from the design of Mr. W. E. Riley, F.R.I.B.A., Superintending Architect to the London County Council. The building forms a portion of an educational centre comprising Training College and Hostels, Secondary and Elementary Schools. It is situated on the "Furzedown" Estate, Tooting, and the whole area comprises thirteen acres. The land allocated to this Secondary School is three and two-third acres, and provides space for recreation, and also for horticultural instruction of the students. Tar-paved courts are laid out for tennis and other games. The buildings are of red brick with stone dressings, and are roofed with green slates; all floors are of fire-resisting material. The ground floor comprises entrance-hall, assembly-hall (which is also used as a dining-

* Coast-Erosion and Protection. By ERNEST R. MATTHEWS, A.M.I.C.E., &c. London: Charles Griffin and Co., Ltd. 10s. 6d.



FIRST FLOOR PLAN.



GROUND FLOOR PLAN.

STREATHAM COUNTY SECONDARY SCHOOL FOR GIRLS, L.C.C.

Mr. W. E. Riley, F.R.I.B.A., Superintending Architect, L.C.C.

room), gymnasium, cookery room, ten class-rooms accommodating 247 students, library, mistresses' rooms, kitchen, scullery, etc. The first floor comprises eight classrooms accommodating 214 students, chemical, physical, and biological laboratories, and art room, each accommodating 30 students. The opportunity afforded, owing to the levels of the site, of placing the cloaks in a half-basement was taken advantage of; they are approached from the two main staircases and are adjacent to the students' entrances. The sanitary blocks are in duplicate; and are detached from the main building by covered ways; they are axial with the students' entrances and afford exits to the playground. A feature has been made of the assembly hall, which is carried up the height of the building, and has a gallery round three sides, which serves as a corridor on the first floor. The building is severely plain in treatment, and depends upon its proportions for the general effect. Glazed tile dadoes have been provided to all teaching rooms and staircases; the walls above relieved with a frieze-rail, are plastered and distempered. A caretaker's house and cycle-shed are provided apart from the school building. The contractors were Messrs. Holliday and Greenwood, Ltd., of Loughborough Park Works, Brixton, S.W.

TESTING SAND.

By W. B. Reinke.

For any proposed piece of concrete construction, engineers as a rule, and rightly so, are very willing to inspect, or have inspected, the cement to be used, accepting as a matter of course the necessary expenses involved. When the subject of sand-testing is brought up, however, the reply is generally, "Oh! we don't care about that," or "We will have samples sent to this office and look at them to determine their value." As a rule, they are quite satisfied that they have taken care of everything needed to produce a good concrete when they write strict specifications for the cement. They "pat themselves on the back," look pleased, and forget about the sand, overlooking the fact that this material is used as found in its natural state with every chance for wide variation in quality, and that it forms from two to four times as much of the concrete as does the cement.

CAREFUL SELECTION REQUIRED.

Few specifications contain definite requirements as to the quality of sand, the subject being dismissed with a general clause, providing that it must be clean, sharp, and free from loam. As generally interpreted, the word loam includes clay matter and finely divided silica. Experience has shown that for the best results, work sand may be too clean, that it need not necessarily be sharp, and that under some conditions a certain amount of clay or finely divided silica is advantageous. The quality of sand is, as a rule, judged by the eye and touch. No attention is paid as to what the mineral constituents composing it may be; what granulometric analysis it may have; whether it may or may not contain minerals in a combined or free state, which will make it harmful to the concrete; whether it is so finely divided as, through the formation of colloids or otherwise, to retard or inhibit hardening of the concrete; or whether it may contain soluble alkalies, which may hasten the set of the cement to such an extent that the initial set is broken while it is still in the mixer, and the whole mass becomes for a period, so far as setting is concerned, so much inert or at best feebly cementitious material.

NECESSITY FOR TESTING.

For the last two years the company with which the writer is associated has investigated the reason for failure to harden properly of a number of pieces of concrete masonry. In some cases where the forms had been removed the concrete was showing signs of yielding to stress of its own weight, raising a question as to its ultimate stability. In others the hardening was being retarded, thus delaying the removal of forms. From knowledge gained in these investigations, as well as results of many tests of sands carried on in our laboratory, certain salient features and characteristics of sands in general have been brought so forcibly to our notice as to make it seem imperative to pay quite as much attention, if not more, to the inspection of sand entering into any construction, as is paid to the inspection of cement. It therefore seems advisable that a committee of this society be appointed to prepare definite specifications for sand and uniform methods for testing it.

While the testing of sand is becoming more general, the work is being done under more or less tentative specifications prepared by individuals; no two laboratories seem to apply the same tests or use identical methods, the tests being carried out differently by each investigator. Most tests are made on samples delivered to the laboratories, no opportunity being allowed for the examination of the deposit or the selection of truly representative samples. The reason for this is chiefly one of dollars and cents, and since the condition obtains, the laboratory must do the best it can with the sample submitted.

TESTS.

The following are the usual tests to which samples of sand submitted for testing are subjected; but it is rarely that all are employed in any one laboratory:

1. Determination of the percentage of moisture.
2. Determination of the percentage of voids.
3. Granulometric analysis.
4. Determination of the percentage of silt.
5. Chemical analysis to determine silica and content of clay matter.
6. Loss on ignition.
7. Volume of mortar from a given amount of sand and cement.
8. Comparative tension tests of mortars made from work sand and standard Ottawa sand, using identical cement and only sufficient water to produce normal consistency.

At this point it is hardly necessary to call attention to the fact that although tension tests are used for testing sands, this practice would seem to be altogether arbitrary, and has grown out of the long-established custom of making tension tests of cement, which, as everyone knows, was instituted only on account of convenience of having small portable inexpensive machines, which could be carried from one place to another without much trouble.

We would suggest that all comparative sand tests be made on cubes or cylinders subjected to compression, as concrete itself is rarely subjected to tension. This practice has been adopted in Germany, where tension tests of cement and sand mortars have been largely eliminated.

To the foregoing tests should be added several not usually carried out:—

1. Microscopic examinations, which need not necessarily be exhaustive.
2. The effect on strength developed by the use of different cements.
3. Permeability of resulting mortars.
4. Weight per cubic foot as received and dried.
5. Determination of the amount of organic matter contained.
6. Tension, or preferably compression, tests on wet mortars, having the same consistency as used in the work.

This last test the writer believes to be the most important, and one to which all sands should be subjected. To the best of our knowledge, however, it is not generally used by laboratories other than the one with which the writer is connected. The general practice in testing sands is to compare work sand with standard Ottawa sand, using the same cement, the briquettes being made from mortars having normal consistency—that is, the consistency of a 1:3 Ottawa sand mortar when made according to the standard methods for testing cement. In the test just referred to the sand is made into a mortar of work consistency—that is, the consistency required in mortar to enable the concrete to be poured.

The practice of making comparative sand tests using wet mixtures was developed in our laboratory some years ago while we were trying to find the reason why a sand known to have caused trouble in a certain piece of concrete work gave, when mixed into mortar of normal consistency, tensile strengths greater than those obtained from the same cement and Ottawa sand.

The method of procedure in our laboratory is as follows:—The sand to be tested and Ottawa sand are first made into mortars of normal consistency, using preferably cement from the work. These mortars are then made into briquettes, the whole operation being in accordance with the prescribed methods of this society for the making of sand briquettes when testing cement. The amount of water necessary to make a mortar of normal consistency having been found, a new batch of sand and cement in the desired proportions is thoroughly mixed dry and placed in a cylinder that can be revolved, together with a number of flint pebbles, so that the proportion of the cement, sand, and stone will approximate that desired in the actual work. To this mix is added enough water (generally about 50 per cent. more than needed for normal consistency) to make a mortar having work consistency. The cylinder is then closed and revolved for five minutes. The flint pebbles are picked out by hand and the mortar is made into briquettes. This test more closely approximates the conditions found in actual work, and the strengths obtained from briquettes made from such a mortar, though, as a rule, far below those obtained from a mortar of normal consistency, correspond to those that may be reasonably expected from the mortar if the sand and same cement are used in construction.

AMOUNT OF WATER USED.

It is to be noted that in most cases, using the same cement, more water will be needed to bring a natural sand to normal consistency than is necessary with Ottawa sand. This difference in the amount of water required is accounted for by the difference in granulometric grading, the work sand, as a rule, having the greater amount of fine material, and hence more surface to be covered and a larger percentage of voids.

Further, it is to be noted that the strengths obtained from a natural sand when made into a mortar of normal consistency are often equal to, or greater than, those obtained with the same cement, using Ottawa sand. When the same natural sand and cement are made into a mortar of work consistency, which requires about 1½ times as much water as for normal consistency, the reduction of strength will be more or less marked, depending on the character of the natural sand. The strength of all sand mortars is affected by the amount of water used over that required for normal consistency. The more water used, the greater will be the loss in strength at early periods. The nearer a natural sand approaches the ideal in physical and chemical composition, the less will be the loss in strength for each additional per cent. of water added. The amount of water required to bring a given sand to work consistency forms one of the best measures of the quality of sand. In mixtures using 50 per cent. more water than required to produce normal consistency, Ottawa sand and good natural sands lose from 25 to 35 per cent. of their strength up to the 28-day period, while a poor sand may lose as much as 70 or 80 per cent. of the strength developed when made into mortars of normal consistency. It has been found by experience that with two sands, other things being equal, the one having the smaller amount of fine material will have the less amount of surface to be covered, and when mixed with a given amount of cement will need less water to produce a definite consistency than the one containing a larger proportion of fine material.

Many engineers maintain that in making comparative tests of sand, the same amount of water should be used with each sand, overlooking the fact that in actual work one sand will require more water than another to bring the mortar to the consistency required by the work. We cannot assume that the same per centage of water will give the same consistency with two different sands. If this practice is followed, one sand may have too much water and the other too little. In the actual work where the sand is to be used, a concrete of a certain consistency will be made with no regard to how much water is needed to obtain it, and in order that the test give a correct indication of the strength the sand will develop under actual work conditions, the test mortars should be made of a corresponding consistency. As stated before, most natural sands take about 1½ times as much water to produce work consistency as is required for normal consistency. This, however, is not true of Ottawa sand, which, while taking less water to produce a normal consistency, requires more than 50 per cent. addition to produce a mortar of work consistency.

In general, it may be assumed:

1. That the less water required to produce a mortar of a given consistency, the higher will be the strength developed by the sand.
2. That the coarser the sand, other things being equal, the greater will be the strength developed.
3. That the higher the silica content, other things being equal, the greater will be the strength developed.
4. That where it is necessary to use sands of poor quality, loss in strength at early periods can be largely overcome by using a dry concrete.
5. That the loss of strength is confined chiefly to short periods, being practically overcome with time.



BAPTIST COLLEGE, BRISTOL. Messrs. OATLEY and LAWRENCE, Architects.

BRISTOL BAPTIST COLLEGE.

[WITH ILLUSTRATIONS.]

The new buildings are to be erected on an elevated site, near the buildings of the Bristol University and the Grammar School, from which there is a fine prospect across the city in the direction of the Mendip Hills. The college is to be residential, and will contain study bedrooms (the rooms marked 1A, 2B, etc. on plan) for 20 students. Each group of five of these rooms is provided with its own lavatory annexe. The lecture-rooms, library, and museum are near the main entrance, and Principal's house at the opposite end, and the dining hall and administrative wing in the centre. The museum is provided to receive the large collection which the college owns, including some of the finest specimens of the earliest printed Bibles, numbering amongst them the only perfect copy of the first edition of Tyndale's Testament. "Old Basing" bricks will be used for the facings with dressings. The roofs will be covered with hand-made tiles. A contract for the erection of the buildings at a cost of something over £18,000 has been entered into with Messrs. J. Dallow and Sons, of Blackheath, Birmingham. Messrs. Oatley and Lawrence, of Bristol, are the architects.

THE BRITISH SCHOOL AT ROME SCHOLARSHIPS FOR 1914

The Scholarship in Architecture at the British School at Rome, offered by the Commissioners for the Exhibition of 1851, will be of the value of £200 per annum, and will be ordinarily tenable for three years. Candidates must be British subjects, and less than 30 years of age on July 1, 1914. The competition, which will be conducted by the Faculty of Architecture of the British School at Rome, will be in two stages. A. An open examination. B. A final competition, open to not more than ten candidates selected from those competing in the open examination.

THE OPEN EXAMINATION.

Competitors should notify the honorary general secretary, British School at Rome, 34, Victoria street, London, S.W., of their intention to compete in this examination as early as possible, and in any case not later than January 24, 1914, and with such notification must inclose a certificate of birth or a declaration as to age and nationality, duly attested by two responsible persons. The subject for this examination will be "An Art Gallery," situated in the public park of an important provincial town. The building to have a frontage towards the south of 250ft. (on which frontage is to be the principal entrance), with a depth of 100ft., and to consist, on the ground floor, of a central top-lighted hall for sculpture, with side-lighted galleries around it. The first floor to have top-lighted galleries. A lower floor for reserve exhibits and stores may be provided, and the design may include any terrace, steps, and architectural adjuncts thought necessary for the completion of the design. The size given may be exclusive of any architectural projections, such as porticos or other architectural features. The drawings required are:—Plans of the two principal floors, front and side elevations, longitudinal and transverse sections all to a scale of [illegible] feet [illegible]

detail of an important portion of the front to ½in. scale, a perspective in which the building shall measure 18in. A short descriptive report must accompany the design. The general drawings may be finished in ink or pencil, and the view in any manner at the competitor's discretion. Each design must bear a motto, and must be accompanied by an envelope inclosing the name of the competitor. Drawings must not be executed as part of a school course, and the competitor must submit a written statement to the effect that this regulation has been complied with, together with a declaration that the work has been done by his own hand. The drawings, together with the above-mentioned documents, must be sent to the honorary general secretary, British School at Rome, c/o The Secretary, Royal Institute of British Architects, 9, Conduit-street, W., and must reach him on or before January 31, 1914.

THE FINAL COMPETITION.

This competition will be held "en loge" in London, and particulars regarding it will be announced hereafter. The successful candidate in this competition will be recommended for appointment to the Commissioners' Scholarship. The Faculty reserve to themselves the right, at their absolute discretion, to alter any of the conditions, periods, dates, or times herein specified, and to decline to hold the final competition, or to select any candidate for it, or to make any recommendation for the scholarship. The Faculty also reserve to themselves the right to publish photographic reproductions of, or exhibit, any of the works submitted by competitors.

THE SCHOLARSHIP IN SCULPTURE

will be of the value of £200 per annum, and will be ordinarily tenable for three years. Candidates must be British subjects, and less than 30 years of age on July 1, 1914. The competition, which will be conducted by the Faculty of Sculpture of the British School at Rome, will be in two stages:—A. An open examination. B. A final competition, open to not more than four candidates selected from those competing in the open examination.

THE OPEN EXAMINATION.

Competitors in this examination should submit the following works:—1. A model of a nude figure in the round from the life, half life size. The model to be executed by the competitor. 2. A model in bas-relief of a composition representing not less than two figures, to be designed and modelled by the competitor, and to be 2ft. 6in. by 1ft. 6in. in size. 3. Four drawings from the life, two of which must be of the nude figure, one of drapery, and one of hands and feet life size. The drawings must be the work of the competitor, and must be on sheets of paper 30in. by 20in. 4. Some drawings or photographs, or both, of original works which have been designed by the candidate. 5. Not less than two photographs or drawings of designs for decorative purposes with architectural features, the designs to have been the work of the candidate.

Competitors should notify the honorary general secretary, British School at Rome, 54, Victoria-street, London, S.W., of their intention to compete in this examination as early as possible, and in any case not later than January 24, 1914, and with such notification must inclose a certificate of birth, or a declaration as to age and nationality duly attested by two responsible persons. The models should be cast in plaster, and, together with the drawings and photographs (which must be unframed and unglazed), addressed to the Honorary General Secretary, British School at Rome, care of James Bourlet and Sons, Ltd., 17, Nassau-street, London, W., and delivered at that address not later than January 31, 1914. The words "Scholarship in Sculpture" should be clearly marked on the outside of each case. The names and addresses of competitors must be clearly written and attached to each work. The works must be forwarded at the candidate's expense. The works will be returned to candidates at their own expense. The Faculty will undertake no responsibility in the case of any damage or loss.

THE FINAL COMPETITION.

This competition will be held in London from April 27 to June 20, 1914, and will be open to not more than four candidates selected from those competing in the open examination. The subject will consist of a design for a figure, group, or relief (as determined by the Faculty of Sculpture), for a given purpose, and to a given scale. Eight weeks will be allowed for the execution of the design, and during that time candidates will be provided with studio accommodation, and given an allowance of £2 per week towards the cost of models, etc. The successful candidate in this competition will be recommended for appointment to the Commissioners' Scholarship. The Faculty reserve to themselves the right, at their absolute discretion, to alter any of the conditions, periods, dates, or times herein specified, and to decline to hold the final competition, or to select any candidate for it, or to make any recommendation for the scholarship. The Faculty also reserve to themselves the right to publish photographic reproductions of, or exhibit, any of the works submitted by competitors.

THE SCHOLARSHIP IN DECORATIVE PAINTING

will be of the value of £200 per annum, and will be ordinarily tenable for three years. Candidates must be British subjects, and less than 30 years of age on July 1, 1914. The competition, which will be conducted by the Faculty of Painting of the British School at Rome, will be in two stages:—A. An open examination. B. A final competition, open to not more than four candidates selected from those competing in the open examination.

THE OPEN EXAMINATION.

Competitors in this examination should submit the following works:—1. Not less than four drawings of the nude figure from the life. 2. One painting of a head, and one painting of a figure from the life in oil or tempera. 3. Two figure compositions in colour suitable for wall decoration (not larger than 30in. by 22in.). 4. Sketches of designs for decorative purposes, which should include some architectural studies. Competitors should notify the Hon. General Secretary, British School at Rome, 54, Victoria-street, London, S.W., of their intention to compete in this examination as early as possible, and in any case not later than January 24, 1914, and with such notification must inclose a certificate of birth, or a declaration as to age and nationality duly attested by two responsible persons. The works submitted for the open examination should be addressed to the Honorary General Secretary, British School at Rome, care of Messrs. Chapman Bros., 241, King's-road, Chelsea, London, S.W., and delivered at that address not later than January 31, 1914. The words "Scholarship in Decorative Painting" should be clearly marked on the outside of each package. The names and addresses of competitors must be clearly written on the back of each drawing, painting, etc. The works must be sent unframed and unglazed, and must be forwarded at the candidate's expense. The works will be returned to candidates at their own expense. The Faculty will undertake no responsibility in the case of any damage or loss.

THE FINAL COMPETITION.

This competition will be held in London from April 27 to June 20, 1914, and will be open to not more than four candidates selected from those competing in the open examination. The subject will consist of a design for a wall decoration to fill a given space for a given purpose, and to a given scale. Eight weeks will be allowed for the execution of the design, and during that time candidates will be provided with studio accommodation, and given an allowance of £2 per week for models. The successful candidate in this competition will be recommended for appointment to the Commissioners' Scholarship. The Faculty reserve to themselves the right, at their absolute discretion, to alter any of the conditions, periods, dates, or times herein specified, and to decline to hold the final competition, or to select any candidate for it, or to make any recommendation for the scholarship. The Faculty also reserve to themselves the right to publish photographic reproductions of, or exhibit, any of the works submitted by competitors.

EXCAVATIONS AT ETOCETUM, STAFFS.

For some time past excavations have been in progress under the supervision of members of the North Staffordshire Field Club, on the site of the Roman station of Etocetum, near the village of Wall, and almost two and a half miles from Lichfield. The explorers have had the cordial co-operation and help of Mr. R. J. K. Mott, of Wall House, the owner of the site. Beginning on the spot indicated by a fragment above ground of ancient masonry, the excavators soon unearthed a considerable length of wall, and in the course of time the foundations of a complete villa or house were disclosed.

Everything that has been unearthed has been watched and recorded, so that there is now a considerable collection of relics of the Roman period on view at the temporary museum which stands on the spot. Among the interesting finds was a rough wall stone, low down in a foundation wall, carved with two human heads, facing one another, and an incised symbol, circular in form, with an upright line through the centre of it. Coins, bones, and fragments of plaster floors with painted decorations were discovered in abundance. There were also found fragments of the plastering of walls with colour decoration, bits of pottery and metal, glass, ironwork, slates, incised initials on bricks, with the marks of animals' feet.

THE PLAN OF THE BUILDING.

The dimensions of the building first excavated are stated by Mr. Charles Lynam, F.S.A., F.R.I.B.A., of Stoke-on-Trent, as, roughly, 96ft. by 72ft. To the south-east front there was probably an open colonnade. In its centre was the entrance to the building forming the main front, containing four rooms, that in the middle being the hall, or atrium, leading to a quadrangle about 39ft. square, having a covered corridor on all sides about 6ft. 6in. wide, the centre square being open. On the entrance side, projecting into the open court, was a semicircular apse, of thin rubble walling, either used as a shrine or a fountain. On the north-east side of the square there were originally three rooms; but a subsequent alteration brought a thick wall to interfere with the corridor and one of the former rooms. On the remaining side of the square were the chamber for heating the buildings by a channelled hypocaust, and, possibly, the bathrooms of the house.

A PUBLIC BATHING ESTABLISHMENT.

The second block of building lies to the south-west of the villa on ground of a lower level. It is of a larger size, being 128ft. by 99ft. The characteristics of this building, Mr. Lynam says, point directly to the purposes of a bathing establishment for public use. The plan cannot be fully traced at present because, unfortunately, a fence, dividing ownerships, exists at the southern end of the building. This difficulty can be overcome if the public come forward with financial support. The block consists of first, an open colonnade to the north-east; then a large enclosure not yet fully trenched, followed to the west by a series of rooms of double depth. In the north-west angle of the building is the furnace, from which the various chambers were supplied with heated air, and which distributed it to the rooms above by flues specially formed in the walls. The water departments are marked by existing stone drains and pipes of lead. In the neighbourhood of the furnace chamber a grain of wheat was recently unearthed, and in another department was found one of the extremely rare coins of the time of Carausius, who rebelled against the rule of Rome, and declared himself Emperor of the Britons.

The general situation of the buildings is about forty yards to the north of Watling Street, near to its junction with Icknield Street, and lying westward of Wall Church. It is believed, however, that the city extended both north and south of Watling Street, but at present there is nothing to show what was its total area.

The site of the ancient city is to be inspected by members of the British Association next month.

Currente Calamo.

Mr. Lloyd George, in the House of Commons on Tuesday night, announced the abandonment of the Revenue Bill, one of the professed objects of which was to abolish the tax on builders' profits. The Radical Rump of landtaxers had revolted against a proposal to withdraw Clause 11, which deals with the valuation of agricultural land, and Mr. Lloyd George has either connived at their action or succumbed to it. The double faced part he has played from the beginning renders the first supposition the more probable. Anyway, we are doomed to six months more uncertainty, and the hundreds of small property owners whose land is ripe for development, and on which the workers are waiting to see urgently wanted houses built, must still crowd in the slums or travel miles to their work. The scandalous breach of faith by a Government that has skulked away from its pledges till it was too late to fulfil them, and which doubtless counted on it, will not be forgotten presently.

What, from long habit, we still call "The Estate Market" has been doing pretty badly. The official figures for last month give a decrease of just a million pounds as compared with the sales during July, 1912. Here are the figures:

	July, 1912	July, 1913
The Mart	£521,154	£281,285
Country and suburban	1,570,174	924,537
Private contract	363,010	280,008
Total	£2,454,339	£1,485,830

This is rightly put down by the *Times* to "the renewal of the menace of legislative interference with the land." In other words, land bursting and Radical bluffing, although nothing has come of it, does still frighten investing buyers. And all this bragging will go on for months making mischief. Thus, we read of the break-up of estates, out of which, doubtless, many are doing well. For these broad acres are bought up by keen speculators, who forthwith split them up and sell in lots by auction to the occupying farmers, who are glad so to secure their holdings. This is real business, and it is based upon that idea of yeoman freeholders and peasant proprietors which, in the days of genuine Liberalism, was held to be the very key to the land question. But the modern Radical will have none of it, and aims at creating a sort of new tenancy with official landlords, such as county councils or municipalities or the State, with the needless jobbery of a Land Court, etc., thrown in for salaries and pensions.

Mr. William Woodward, F.R.I.B.A., in a well timed letter in the *Times* of Wednesday, points out that one cause of the trouble in the Krupp case arose from the desire of one firm to ascertain the amount of the tenders of another firm for the same work, and says, quite truly, that this sort of trouble is not confined to Germany. The tenders for the work of our own Admiralty and War Departments are sent in to the officials of those bodies, and the respective amounts supposed to be kept a secret. When the mischief of this procedure has been over and over again pointed out in the House of Commons, the official reply has been that the contractors do not like their fellow-competitors to know the amounts of their tenders. We agree entirely with Mr. Woodward that this official explanation is well described by the word "bosh." All chance of bribery and corruption in connection with tendering for Government and other work would be avoided, says Mr. Woodward, by the system adopted by architects, which is as follows: A stated day, hour, and place is fixed for the receipt of tenders; the contractors deliver their tenders at the time fixed; they are all invited to be present; and the tenders are opened in their presence, and the respective amounts read out and noted by them. We agree, but we regret to add, and Mr. Woodward knows it as well as we do, that this excellent custom is being increasingly more honoured in the breach than in the observance by some architects; and that the attention of the R.I.B.A. was called to it by a resolution passed at the half-yearly meeting of the National Federation of Building Trades Employers, as reported by us on p. 144 in our issue of Aug. 1.

A report by the Comptroller of the London County Council shows that London has paid nearly £700,000 to the Road Board, but has received only £23,234 back. The report states that in view of the fact that the petrol tax was specially designed to secure a contribution proportionate to the use made of the roads, it would seem that in the distribution of the fund some regard should be paid to the amount contributed by a given area, as indicating the extent of the use made by motor traffic of roads in such area. That view, as all of us know, has not commended itself to the new authority. At the time it was constituted we expressed an opinion that it would not. Its formation was a mistake, and its administration is a scandal. Its continued tolerated existence is one more proof of the curious fatalistic despair with which John Bull—grumbling all the time—surrenders himself to irresponsible and unrepresentative oligarchies which do nothing but boast of their achievements to be accomplished somewhere about the Greek Kalends.

The report of the Select Committee on London Motor Traffic recommends that the right to make by-laws for the control of motor-omnibuses should be granted to the London County Council and other county councils in Greater London, subject to confirmation by the Traffic Branch of the Board of Trade, who will hear appeals. It is also suggested that borough councils desiring that the London County Council should make regulations covering their districts may appeal to the Traffic Branch of the Board to move in the matter. The county councils, the report suggests, may determine the routes to be followed by motor-omnibuses, their speeds through certain districts, and generally to supervise this form of traffic. The Committee consider that the system under which the London General Omnibus Company now pays its drivers (so much per journey) is an inducement to speed, and should be revised. Suggestions are also made as to more effective police control of the traffic at crossings. The Report is a sensible one, and the public, who have had enough of the massacre of the innocents by the motor-'bus, and its ruin of the roads, will resent the efforts of those who are discounting the recommendations of the Report with the sole object of delaying action.

Under the terms of the proposed new building code for New York City, when an architect, builder, or owner desires a modification of any provision in the building ordinance, or a ruling on any matter not covered by it, he must make written application therefor with the reasons for his request. The building superintendent must give his decision, with reasons, in writing; the same is to be published in the official "City Record" within two weeks and filed, properly indexed, in the permanent records of the building department. These records, to which the public shall have free access, may be cited as precedents. The clause promises to set an effectual check upon favouritism or arbitrary refusal to exercise dispensary powers of officials, and will protect them from unfounded charges of graft."

The obituary notice, as written by the Official Liquidator, of Measures Brothers, Limited, makes a sad story even in the gloomy history of trading companies. This concern, so well-known to many builders, and which had so prosperous a period, and did such a good business as a company, ended in bankruptcy and ruin all round. The Debenture holders have so far only had 12s. 6d. in the £, but may hope for a trifle more. The goodwill of the business, which for many years and down to the end figured at £80,000 in its balance-sheets, was sold for £1,850. The freehold and leasehold premises, there valued at £32,986, have, up to now, realised but £3,511, while some of the property bought by the company in 1882 for £17,000, is still unsold and seems unsaleable. The managing director, who had made the business and the company, is dead after a tragedy of failure. Of course, unsecured creditors and shareholders get nothing. The fall in the price of iron, and the breaking up of building business, were contributory causes. But the salaries paid for direction and administration were always excessive, and towards the end of its career they made the carrying on of the company financially impossible. The final note in this case is that there is an official debt of £240 for fees and costs lost by the Board of Trade! Thus, we find here, as it were, that insolvency is itself insolvent?

"The Clerk of Works," by George Metson (London: Crosby Lockwood and Son), is an excellent handbook on the supervision of building operations, and the duties and qualifications of the man who, next to the architect, is of more service to the building owner than anyone else. How neglect to employ him facilitates failure and misunderstanding many a legal case we have reported has proved. How, as Mr. Metson points out, in his final chapter, the penny-wise and pound-foolish policy of paying a clerk of works at a lower salary than that of a skilled mechanic, any business man must surely see. If he does not, he will probably feel—in his pocket, sooner or later, and will deserve to. Useful as this little book will prove to the young clerk of works, taking his first appointment, we are quite sure it will prove quite as much so to the building owner about to start the erection of any structure of any size or cost.

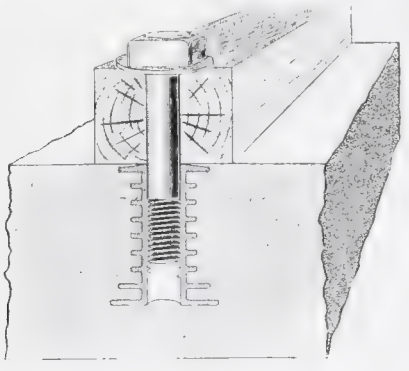
Keying an "ad." and paying a clerk to keep tab on "inquiries" is good business in a ten-cent mail order proposition, but doesn't work out on anything bigger. We know a wall-board man who got 480 inquiries from a farm journal "ad.," sent out a stack of catalogues and booklets, chased follow-up letters out in one-two-three order, and has yet to sell a single foot of the board to any of the idle curious who answered his advertising. The same manufacturer got but two inquiries out of an "ad." in a building magazine, but sold to both parties.—*The Builders' Guide, Philadelphia.*

FASTENING MASONRY TO CONCRETE CEILINGS IN FACTORIES.

Many engineers and those interested in the building and using of concrete ceilings for factories, will appreciate the practical working features of a plan herewith illustrated for installing threaded inserts at regular intervals in ceilings when the mixture is being poured, the threaded devices being then available after the wood forms are removed and the concrete hardened for fastening 2 by 4's or 4 by 4's in any lay-out desired.

The finish is neat, and does not detract from the smoothness of the wall, and is better than any plan which involves drilling holes after the concrete has hardened. The insert acts as a reinforced hole as strong as the ceiling itself.

The illustration shows a cut-through section of a 4 by 4 fastened by means of the in-



serts and ordinary machine bolts. The 4 by 4 is attached every 2ft. Shafting or machinery is then fastened to the timbers in the ordinary way.

One prime advantage of including this arrangement of inserts in plans for a factory ceiling is that the timbers can be changed around or replaced with little trouble, and without drilling new holes, and greater strength and security is obtained.—*The Contract Record.*

The Trail shelter on the beach at Montrose was formally opened on Friday. It has been constituted for the trustees at a cost of £1,000. Mr. John Lindsay being the builder.

Several large works are in prospect in the city of Wellington, New Zealand, the chief being the new Roman Catholic cathedral, to cost £110,000; a new building for a large commercial firm, about £4,000; and a new government railway terminus.

At Porthcawl, the new reservoir, constructed at a cost of £5,000, has just been inaugurated. The reservoir has a storage capacity of one million gallons, sufficient to supply Porthcawl for ten days. The engineers were Messrs. John Taylor, Santo Crimp, and Co., and the contractors Messrs. Parkinson and Hodgens, of Swansea.

Aristide Sartorio, the well-known Abruzzi painter, whose works not long ago were exhibited in London, has executed a frieze for the new Chamber of Deputies at Rome, where the first Italian Parliament elected under universal male suffrage law will begin its sitting shortly. The canvas is 400ft. in length, and contains some 300 symbolical figures. It has just been placed in position.

The rural district council of Shifnal received at their last meeting the award of Mr. Fowler, the umpire appointed to fix the price to be paid to the Earl of Shrewsbury for the land required by the Council for the sewage outfall works at Albrighton, the sum fixed being £532. This sum was stated to be much higher than the council's estimate of the cost of the land.

The Winchester Corporation, on Thursday in last week, decided to purchase the Winchester Corn Exchange and Market-place for £8,100. The corporation adopted at the same meeting plans and estimates for the provision of fifteen slipper baths and two vapour baths, at a cost of £2,500, on a site in North Walls. For men there will be three first-class and five second-class slipper baths and one vapour bath, and for women three first-class and four second-class slipper baths and a vapour bath. The plans will admit of future extensions, and for a swimming bath 90ft. by 30ft.

OBITUARY.

Mr. William Tregarthen Douglass, M.I.C.E., of Airlie-gardens, Campden-hill, W., and 15, Victoria-street, Westminster, son of the late Sir James Nicholas Douglass, engineer of the Eddystone Light house, was drowned on Sunday afternoon off Start Point. With his wife and son he was on a visit to Lady Douglass, who is living at Dartmouth. He went out in the afternoon with his son in a sailing boat, which capsized when off Start Point, and sank. The son was picked up by a pleasure steamer and taken to Plymouth. Mr. Douglass, who was fifty six years of age, was inspecting engineer to the Royal National Lifeboat Institution, an appointment he had held for five-and-thirty years, consulting engineer to the Public Works Loan Board, and the Light house and Harbour authorities, and was the author of several books, including "The New Eddystone Lighthouse," and "Coast Erosion."

The death occurred early on Monday week of Mr. Wm. Ruddle, of Wood-street, Peterborough, the senior member of the staff of Messrs. John Thompson and Co., the well-known church builders and contractors. Mr. Ruddle, who was eighty-seven years of age, appeared to be in his usual health on the previous day, though during recent years his health had been gradually failing. The end came suddenly and peacefully early in the morning. Mr. Ruddle was the third son of Mr. Francis Ruddle, the founder of the firm which for the past fifty years has borne the name of Thompson. After the change he remained with the new firm as draughtsman, and was the senior member of the staff at the time of his death. For many years he led a retired life in a little house behind Wood street, where he was born, and where his father brought his family up.

The death has occurred at his residence, Thornville, Falkirk, after a short illness, and at the age of eighty-two, of Mr. Henry Stark, J.P., timber merchant, Grangemouth, who was identified with the timber trade for more than forty years. Mr. Stark was a partner in the firm of Messrs. J. T. Salvesen and Co., until his retirement, two years ago, and was head of the timber department of that firm.

Mr. James Donnelly, Enniskillen, has been elected assistant county surveyor for Fermanagh.

A convent chapel is about to be built at Carrickmacross. Mr. McDonnell, of Chichester-street, Belfast, is the architect, and Mr Maginnis, of Dundalk, the builder.

A copy of Murillo's "Holy Family," specially painted for Bow Church, Cheapside, and presented by the artist, has been placed over the Communion-table in a frame, carved by Grinling Gibbons, and until recently occupied by the Ten Commandments.

His Honour Judge Benson, at the Sheffield County-court, has given judgment in a case in which he held that if tenants of property complained of a smoky chimney indicating a faulty flue, then the owner of the property became responsible for damage caused by fire through neglect of repair. The plaintiff, a labourer, claimed £27, and judgment was given for £14 10s.

The Ealing Town Council have unanimously appointed Mr. W. R. Hicks, at present deputy borough surveyor, to the position of borough surveyor, in succession to Mr. Charles Jones, M.Inst.C.E., who has recently completed fifty years' service under the Ealing Corporation and its predecessors, and has this week been unanimously requested by the town council to be the next mayor of the borough—a unique and well-deserved honour.

The cloister, 250ft. in length, connecting the east and west columbaria with the chapel entrance overlooking the garden is now in course of construction at Golder's Green Crematorium, and will be finished before the end of the year. This will complete the architectural scheme of the buildings designed by Sir Ernest George, A.R.A., and Mr. A. B. Yeates, F.R.I.B.A., and will afford a permanent and covered place where works of art may be set up as memorials without fear of damage from the weather, similar in idea to the Campo-Santo at Pisa. At the same time the chapel is being improved by the addition of a rose window at the south end.

Our Illustrations.

RIVER PLATE HOUSE, FINSBURY CIRCUS, E.C. OFFICES OF THE BUENOS AYRES GREAT SOUTHERN RAILWAY, LIMITED.

This work is an extensive addition to the original offices of the company, built some fifteen years ago, under the direction of the present architect, Mr. Richard Creed, F.R.I.B.A., of 5, Verulam-buildings, Gray's Inn, W.C. The site is on the north side of Finsbury Circus (Nos. 10 and 11), and when complete will give additional accommodation for the increasing business of the company, and offices for other Argentine companies, or those interested in the development of the Republic. In addition to the increased frontage, one story has been added to the existing building, and as this design was complete in itself, with a central pediment, it proved to be a somewhat difficult problem as to how best to embody the new work with the old so as to form one effective scheme. To meet this the pediment has been removed, giving place to an entirely new motif. The additional story to the old building will form a hall for shareholders' meetings; otherwise the new work consists entirely of additional office accommodation, and strong rooms, etc. The main front is faced with Portland stone on a brick backing, and the general walling throughout is of stock brickwork in cement, with white Suffolk facers or glazed bricks. All floors are constructed in reinforced concrete, and Kulm partitions are extensively used. The woodwork throughout is executed in Austrian oak. The clerk of works is Mr. W. Parminter. Contractors: Messrs. W. E. Blake, Ltd., of Plymouth and London. Fire-resisting construction by Messrs. Richard Moreland and Son, Goswell-road, E.C. Plumbing by Messrs. Beavan and Sons, 27, Victoria-street, Westminster.

STREATHAM COUNTY SECONDARY SCHOOL FOR GIRLS.

(For description and plans see pp. 216 7.)

KING EDWARD VII. MEMORIAL, BIRMINGHAM.

The total height of this important memorial (which is placed in Victoria-square) scales about 24ft. The statue of the King is in marble. His Majesty is represented wearing the uniform of Field Marshal, and over this is draped the Coronation robe. In one hand he holds the orb, whilst in the other the sceptre. The pedestal is made of Stancliffe stone, set upon granite steps. At two sides of this pedestal are buttresses, upon which are seated bronze groups, the one a female representing the Peace of the World, the other Industry and Progress. The latter shows a man with his arm around a boy, whom he appears to be instructing, whilst the boy holds in his hands the small model of a suspension bridge, thus symbolising engineering. In the front of the pedestal is seen a composition in bronze of St. George and the Dragon, under a canopy formed of an elaborately designed crown. The whole of the bronze work is carefully wrought out, with much detail and accessories. Mr. Albert Toft, the well-known sculptor, who executed this work, is a Birmingham man, and son of Mr. Charles Toft, for more than 20 years chief modeller to Messrs. Elkington, and held a prominent post in the works of Messrs. Josiah Wedgwood and Sons. Mr. Albert Toft carried out the Victoria Memorials at Leamington, Nottingham, and India. This work at Birmingham was recently unveiled by the Princess Louise.

HARCOMBE, CHUDLEIGH, S. DEVON.

This house has been erected for Sir E. C. Wills, Bart., on the site of an old farmstead on the south side of the Haldon Hills, with a fine prospect through the valleys to the Dartmoor range. The building is of local limestone, with Ham Hill stone dressings, the principal rooms having fireproof floors. The orangery, porch, and oak verandah are features of the south elevation, and a sundial crowns the central bay. The roofs are

covered with grey Delabole slates. The hall is of Ham Hill stone, with Tudor arched openings to stairs and doors. Mr. J. Archibald Lucas, A.R.I.B.A., F.S.I., is the architect, and Messrs. Woodman and Sons the contractors, both of Exeter. The following are the references to the plans: B.I, billiard room; B, bedrooms; B R, boudoir; B 1, blanket room; C, cloaks and lavatory; D 1, dining room; D W, drawing room; D Y, dairy; E, engines, G, guns; H, hall, K, kitchen; L, larder; M, morning room; O, orangery; P, pantry; S, stores; S H, servants' hall; V, verandah; W, wine.



HARCOMBE, CHUDLEIGH, DEVON.
J. Archibald Lucas, Architect.

BRISTOL BAPTIST COLLEGE.

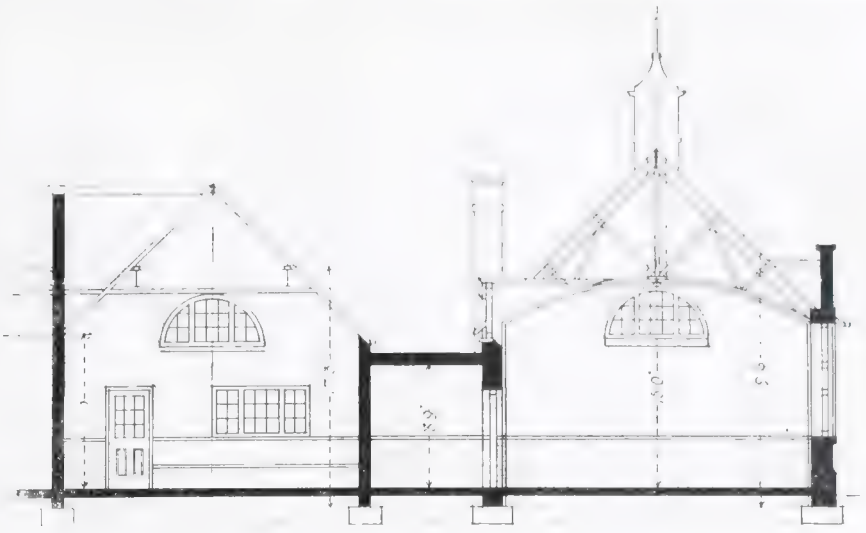
(See description and plans on page 219.)

NEW ORGAN LOFT AND ORGAN WHITSTABLE CHURCH, KENT.

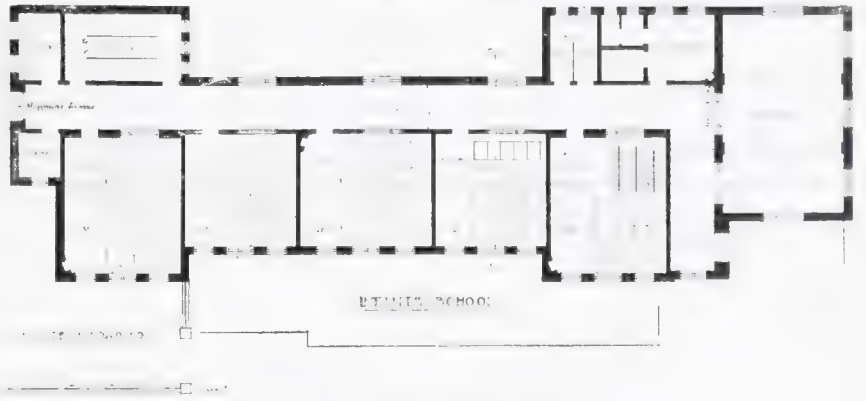
This new organ-loft and organ, designed by Mr. Robert H. Goodsall, is to occupy the south-west angle of the parish church, Whitstable. The work is being carried out by public subscription at a cost of £500. As the present building has from time to time shown signs of settlement, and a considerable amount of underpinning in this portion of the church has been carried out, the substructure of the organ is arranged to be entirely self supporting, and transmits no additional weight to the existing walls. The lower portion of the organ-loft is designed to form an enclosed baptistery, the existing font being in this position. Access to the musician's seat is gained through the tower adjoining, and good light is obtained for the keyboard from the west window. The material throughout is oak, the weight of the organ-pipes, etc., being supported by enclosed iron joists and stanchions. Mr. W. S. Taylor is associated with the architect, Mr. Robert H. Goodsall, in regard to the question of construction. The organ builders are Messrs. Lewis and Co., of Brixton.

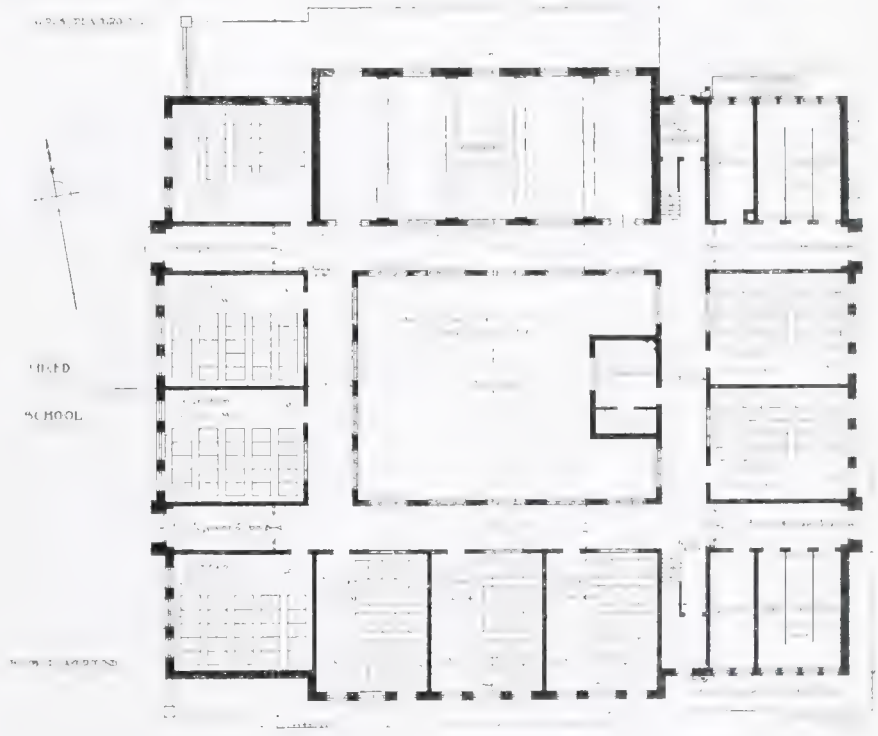
NEW ELEMENTARY SCHOOL, HARROGATE: SELECTED DESIGN.

This school is planned on the courtyard system, so as to obtain both school and playground entrances to Bilton-lane, as required by the conditions of competition, and also to insure through-ventilation to all classrooms by dormer lights above the corridor flat. (See section of infants' hall as an example of this arrangement.) None of the classrooms face north, and the mixed department assembly hall gets the sun through the clerestory windows over the corridor flat. The playgrounds all face south, and have convenient entrances and exits. A teachers' door is provided in the mixed department, in close proximity with the door of infants' school, for easy communication between the buildings for the staff. Teachers' rooms are provided on the first floor, above cloakrooms, and the heating chamber is in a convenient position for heating both the buildings. The walls are to be built of Pateley pitch faced stone lined with bricks, and with dressings of Killinghall stone. The roofs to be covered with rough grey slates. The out-offices will be placed somewhat nearer to the school than the block plan in the competition intended, and garden space will be arranged on the west side of the premises. Mr. Sidney D. Kitson, F.R.I.B.A., of Leeds, acted as the assessor in this competition, and Mr. C. H. Channon, F.R.I.B.A., of Malton, Yorks, is the architect of the buildings now illustrated.



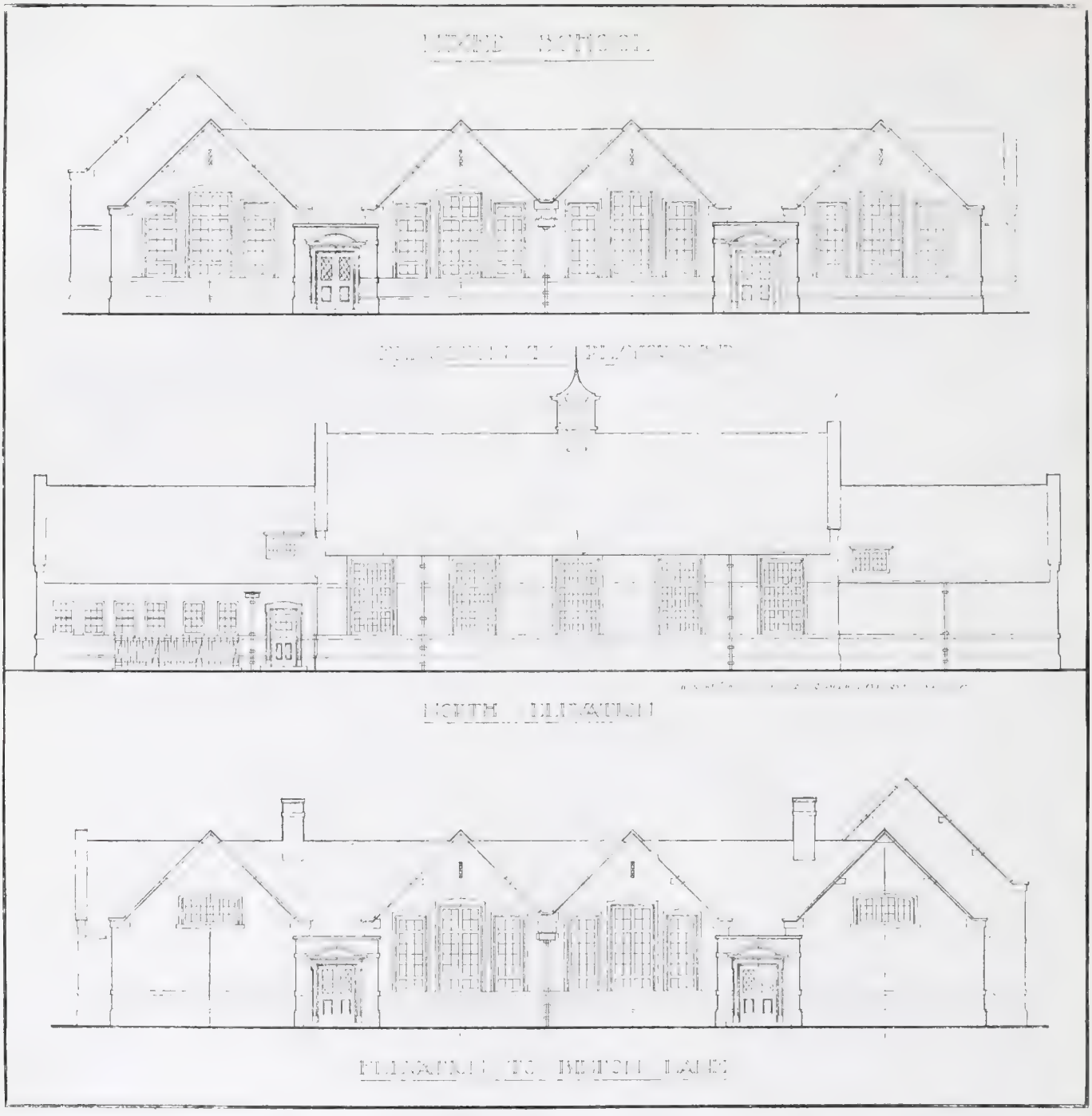
Section through Infants' School through Assembly Hall and Corridor showing through Ventilation of Hall.





HARROGATE ELEMENTARY SCHOOL COMPETITION: SELECTED DESIGN.

A council school has been built at Oldcastle at an outlay of over £11,000. The plans and designs are by Mr. D. Pugh-Jones, architect to the Glamorganshire Education Committee.



HARROGATE ELEMENTARY SCHOOL COMPETITION: SELECTED DESIGN
Mr. C. H. Chasson, F.R.I.B.A., Architect

PROFESSIONAL AND TRADE SOCIETIES.

ARCHÆOLOGICAL EXCURSIONS FROM DEVIZES. On Tuesday, a series of excursions and meetings connected with the amalgamated gatherings of the Cambrian Archæological Society and the Wiltshire Archæological Society was commenced. There are about 180 taking part, of whom about 100 are from the Principality. Mr. B. Howard Cunnington, F.S.A. (secretary), ex-mayor of Devizes, is the local honorary secretary, and the mayor and corporation have placed the public buildings of the town at their disposal. The excursions on Tuesday were made by five large motor charabancs and about a dozen motor cars. The route was to Wans Dyke and Avebury, where the ancient temple was inspected, and interesting descriptions given by the Rev. E. H. Goddard, who also described the old Saxon church of the village, and the Dovecot and Manor House. Silbury Hill, which is the largest artificial mound in Europe (being 130ft. in height, and covering five acres of land), was also visited, as was Devil's Den and the "Grey Wethers," a large group of Sarsen stones in a valley, where 22 acres of land have recently been purchased by the Wilts Archæological Society, in conjunction with the National Trust, for the purpose of preserving these stones to the nation, as they were being broken up for road repairs some years ago. Professor Boyd-Dawkins, Professor Sayce, and Major Godsell gave explanations and details at several points of interest. In the evening the mayor and mayoress of Devizes held a reception at the town-hall.

AUCTIONEERS' INSTITUTE. The 20th annual country meeting of the Auctioneers' and Estate Agents' Institute of the United Kingdom will be held at Folkestone early next month. The business meeting will be opened in the town hall on Thursday, September 4, by the Mayor. An address will be given by the President of the Institute, Mr. B. D'Anson Breach (Messrs. Farebrother, Ellis, Egerton, Breach, Galsworthy, and Co.), who will afterwards entertain the members to lunch at the Royal Pavilion Hotel. There will be a dinner at the hotel in the evening. The programme for the two following days includes visits to Rye, Canterbury, and Boulogne. Canon E. A. Stewart will conduct the visitors over Canterbury Cathedral.

Mr. Charles Lowe, of Aston, Birmingham has been appointed highways inspector to the Torquay Town Council.

Mr. William Williams, first divisional engineer, Cyprus, has been appointed to the directorship of public works, and Mr. William M. Kent has taken up his duties.

A new council school on Windmill Hill, Launceston, was opened last week. It has cost £5,000, and the architect is Mr. B. C. Andrew, of St. Austell.

Mr. T. Moss has resigned the post of surveyor to the Withnell Urban District Council in order to take up a position as gas-manager at a town near Melbourne, Victoria, and will leave England on September 11.

Chippenham Town Council propose to apply for an extension of the borough area by the inclusion of the areas comprised in the sewerage and water agreements with the Rural District Council, and it has been suggested that representatives of the two Councils should meet and confer





RIVER PLATE HOUSE, FINSBURY CIRCUS, E.C.: OFFICES OF THE BUENOS AYRES GREAT SOUTHERN RAILWAY.
Mr. Richard Creed, F.R.I.B.A., Architect.





STREATHAM COUNTY SECONDARY SCHOOL FOR GIRLS, L.C.C.: FRONT VIEW AND ASSEMBLY HALL.—Mr. W. E. Riley, F.R.I.B.A., Superintending Architect, L.C.C.



H. J. Whitlock & Sons, Photo.

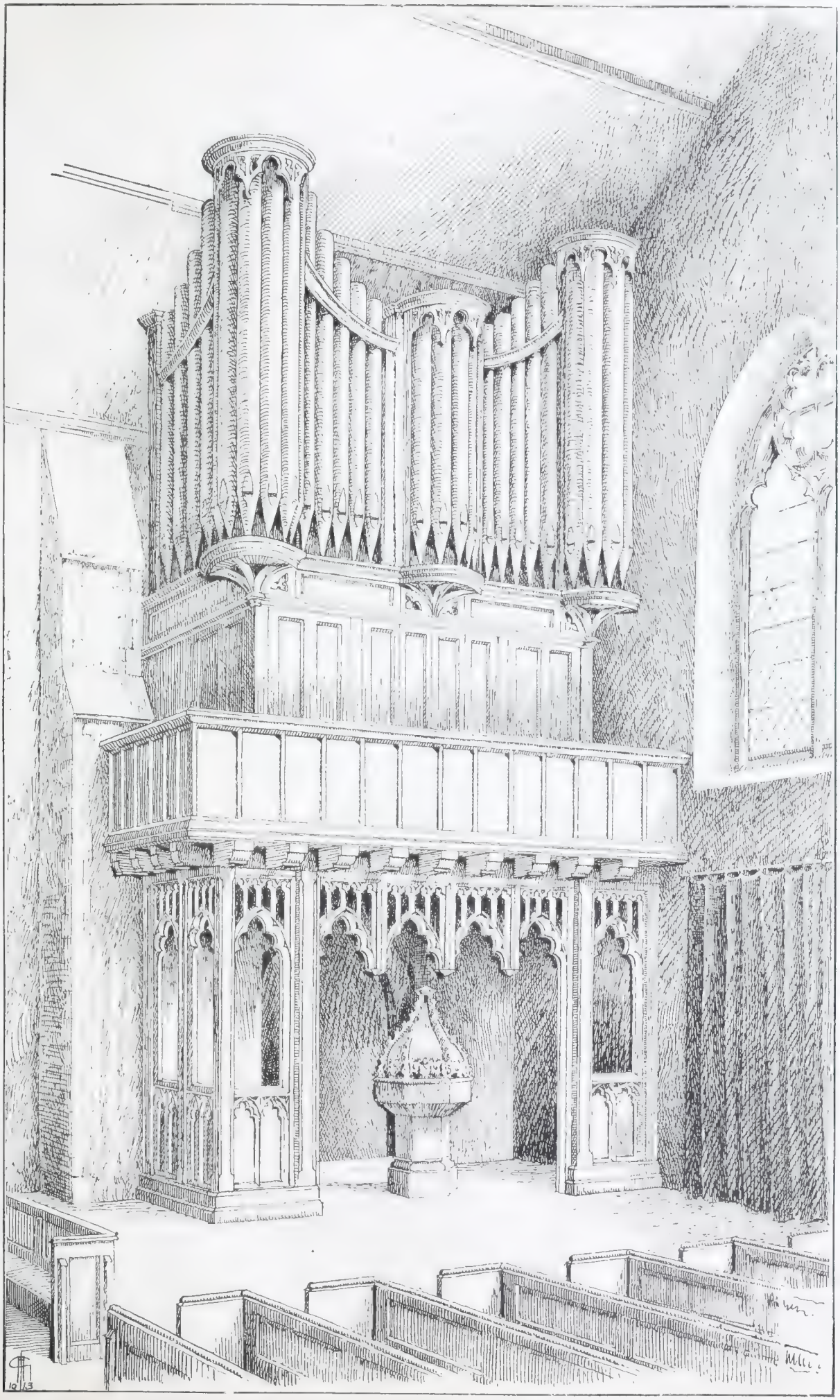
KING EDWARD VII. MEMORIAL, BIRMINGHAM.—Mr. ALBERT TOFT, Sculptor.


HAYCOMBE, CHUDLEIGH, DEVON.
for Sir E. C. Wills Bart.
J. Archibald Lucas A.R.I.B.A.
Archt. Exeter



BRISTOL BAPTIST COLLEGE, TYNDALL'S PARK.

Messrs. GEORGE H. OATLEY, F.R.I.B.A., and G. C. LAWRENCE, A.R.I.B.A., Architects.



ORGAN AND ORGAN LOFT, WHITSTABLE CHURCH, KENT. Mr. A. H. Goodsall, Architect.

Building Intelligence.

GLASGOW. The new Art Galleries in Sauchiehall street will be opened for the exhibition of the Royal Institute on Wednesday next, the 20th inst. The galleries have been built by the corporation at a cost of £30,000, exclusive of the price of the site. They occupy the site, with some extension, of the old M'Lellan Galleries, Sauchiehall-street, built about sixty years ago by the gentleman of that name to house his pictures, which in time became the nucleus of the corporation collection now at Kelvingrove. The galleries extend north and south—from Sauchiehall-street to Renfrew-street, and east and west from Rose-street to Rutherford-street; but with the exception of the back wall at Renfrew-street, they are for the most part hidden by the surrounding tenements. The chief entrance is, as before, in Sauchiehall-street, the halls being placed thirty feet above the level of that thoroughfare. From the entrance corridor a semicircular double staircase, the well of which is thirty-six feet across, lighted from a domed roof, leads directly to an oblong pillared hall, to be used for the display of sculpture. The staircase will be lined with green Tinos marble, with steps of white marble. From the sculpture hall a doorway gives access to the picture galleries. In addition to the staircase, there is also a lift from the Sauchiehall-street entrance. The sculpture hall is 60ft. by 21ft., and on each side of it is a small gallery, 21ft. by 20ft., for the display of architecture and works in black and white. The other six galleries are arranged in two sets of three. The largest of the three halls in the centre is 60ft. by 36ft.; the two on each side of it are each 60ft. by 31ft. 9in. The main hall to the north is 70ft. by 42ft., and the two on each side are 42ft. by 37ft. 6in. On the north side, at the back of these halls, is a corridor 96ft. by 9ft. All the galleries are lighted from the top by cupolas, carried on ribbed coverings. The galleries vary in height from 35ft. to 29ft., according to their size. The decoration of the galleries includes a low 2ft. dado and doorways of walnut. The walls have been covered with a rich, low-toned red canvas; the frieze and cornice are in a creamy tint, while the ceilings are in old gold. The floors will be dark-stained. Radiators will be placed in the centre of each gallery, masked by walnut settees; the artificial lighting is by electric pendants with reflectors. On the Sauchiehall-street level, below the Art Galleries, a suite of three bazaar halls has been constructed. The largest of these, with a balcony on its four sides, is 103ft. by 41ft. 6in.; the other two are each 44ft. 6in. by 26ft. Here are also situated cloakrooms, kitchens, stores, and the office of the curator and board-room. The designs for the new Galleries have been the joint production of Mr. A. B. MacDonald, M.Inst.C.E., City Engineer, and Mr. R. W. Horn, A.R.I.B.A., also a city official.

RATCLIFFE, NOTTS.—The new Roman Catholic School buildings at Ratcliffe have been blessed by Cardinal Bourne. The original school and its church (now the library) were designed by Augustus Welby Pugin, and were built in 1844-7, the north east wing and colonnade being added in 1857-8, and the south west wing, study hall, dormitory, and present church in 1863-7. The present additions consist of an extension 160ft. long, of the north-east wing, and running at right-angles to this of a further extension 40ft. long. The entire block provides on the ground floor a dining-hall, a kitchen, kitchen offices, a matron's room, and a servants' hall; on the first floor a suite of sixteen bedrooms, and on the second floor a dormitory, lavatory, and bath-rooms. Mr. Arthur Young, of London, the architect, has sought to produce a building in keeping with the rest of the college. The style adopted is Early Decorated. The materials used are red brick, with facings and mullions of freestone. The dining-hall is 70ft. long, 27ft. wide, and 20ft. high. Terrazzo in white, green, and black marble has been used for the flooring. Four beams (carried by carved brackets, which spring from corbels of worked stone, each of different design), support the pitch pine ceiling. It is divided into panels, with carved bosses at the intersections of the ribs. Solid oak panelling is carried round the room to the height of 7ft. 9in., with buttresses in keeping and cornice with carved bosses. Over the chief door, of massive oak, the panelling is carried to a higher level, and is rich with carving, and an oak screen, of open-work above, divided by mullions with tracery in the heads, separates off the butlery. Above the screen is a gallery, with front of sunk panelling and carved cornice moulding. The new kitchen measures 30ft. by 27ft., and is 20ft. in height. Running over the dining-hall and the kitchen is a dormitory, 114ft. by 27ft., and in height 15ft. 6in. The isolation infirmary has also been enlarged, giving two wards of eleven beds in all, with a nurse's room. An additional cloister has been constructed containing a new entrance to the church.

WELLINGTON, SALOP.—A scheme for railway extensions and developments at Wellington has been prepared by the engineers for the Great Western and London and North-Western Railway Companies. There will be a rearrangement of the present waiting-rooms and other buildings on the platform, and the island platform will extend in the direction of Jubilee-street. Part of the scheme will be the removal of the sheds from their present position, practically in the railway station, further down the line in the direction of Wrockwardine-road, where new sheds will be built; Wrockwardine-road bridge will be widened and extended and a number of loop lines made. The work outlined, and other developments contemplated, will cost from £15,000 to £20,000. The railway station alterations and the erection of a new post-office in Walker-street, where a central site has been purchased, will provide employment for a large number of workmen. Between £4,000 and £5,000 will also be spent by the urban council on a housing scheme for workmen's dwellings, and many new villas are being erected on the Forester estate near the Wrekin and Wellington Golf Links.

The Carnegie Trustees have adopted plans by Mr. J. Lindsay, A.R.I.B.A., of West George-street, Glasgow, for an institute to be built in Netherton Broad-street, Dunfermline.

At Cambridge a Local Government Board inquiry has been held into an application of the corporation for sanction to a loan of £6,570 for the extension of the infectious diseases hospital. The architect is Mr. C. Chart, of the firm of Messrs. Chart, Son, and Reading, of Croydon.

Mr. C. H. Avery, B.Sc., of University College, London, and Mr. F. A. Eustace, of the City and Guilds Technical College, Finsbury, have been appointed to the heating and ventilating scholarships awarded by the Institution of Heating and Ventilating Engineers, tenable at University College.

Lord Latymer unveiled on Monday, in Montrose Old Churchyard, a tomb which he has erected, in place of one which had worn out, to the memory of his ancestor, John Coutts, of Fullarton, Provost of Montrose 1677-78, 1682-84, 1687-88. Lord Latymer afterwards presented a mace to the corporation of Montrose.

The Local Government Board has communicated with the Spalding Rural District Council sanctioning a loan of £14 000 for a water scheme for the parishes of Moulton, Weston, Pinchbeck, and Pinchbeck West. The loan to be raised includes provision for the purchase-money of the works of the South Lincolnshire Water Company so far as they are in the Spalding Union area, the purchase having been fixed at £2,000. The balance will provide for the linking-up of the existing mains, and for considerable extensions to different parts of the parishes mentioned.

The half-yearly meeting of the Board of Governors of the Institute of Plumbers, the headquarters of which are at Manchester, was held on Monday, in the council-chamber at Llandudno Town Hall. The chairman of the Llandudno Urban District Council (Mr. W. Williams) and the town-clerk (Mr. A. Conolly) were present at the opening of the meeting, and gave a cordial welcome to the board. Mr. J. J. Cox, of Knutsford (the vice-chairman), responded on behalf of the board who then proceeded with their business under the chairmanship of Mr. J. C. Rennison, of Darlington, the president.

COMPETITIONS.

NAVIGATION OF THE UPPER RHINE.—A competition has been organised for a scheme for the improvement of navigation on the Upper Rhine between Basel and Constance, and prizes of £1,960, £1,370, and £980 are being offered. Proposals must be forwarded to the Verein für die Schiff-fahrt auf dem Oberrhein, Basel, by December 10, 1914. The programme of the competition may be seen, in German, at the Commercial Intelligence Department of the Board of Trade.

CHIPS.

The bronze cast of Rodin's group of statuary, "The Burghers of Calais," is to be placed in the central garden of the new embankment at Millbank between the Tate Gallery and the Houses of Parliament.

Some time ago the Hants County Council decided to endeavour to obtain land on which to erect cottages for their workmen, and on Monday the Council authorised a start being made by building two cottages at Shipton Bellinger, on the Wiltshire border, at a cost of £500.

At a meeting of the creditors of the Richmond Iron and Steel Company, Stockton-on-Tees, at Middlesbrough, on Monday, the gross liabilities were stated as £45,134, with assets showing a deficit of £29,000. Shortage of capital, strikes, and foreign competition were the cause of the failure.

The Kent County Council have decided to offer to the county surveyor to be appointed in succession to Mr. H. P. Maybury, a salary of £800 per annum; the age of applicants must be between 28 and 45. Mr. Maybury's salary has recently been £1,500 a year. The appointment will be made at the council meeting on November 19.

B. Frederick Johnson, thirty-six, who had falsely represented himself to be a member of a well-known firm of London builders, was sentenced at Nottingham Quarter Sessions on Friday to five months' imprisonment in the second division for obtaining goods by fraud. He had alleged that a firm at Wandsworth, with whom he stated he was associated, had acquired an extensive area of ground in Mapperley Park, Nottingham, upon which they proposed to erect villa residences at a cost of £20,000.

The Hampshire County Council decided on Monday not to destroy the picturesque bridge which carries the Romsey-to-Ringwood main road at Romsey, and which is known as Middlebridge. On account of its steep gradient, which prevents approaching drivers obtaining a line of sight until they are within a short distance of each other, it was decided to erect large warning notices on each side, and to ask the Standing Joint Committee to consider the possibility of stationing permanently a police-constable on point duty at the spot.

An agreement has been reached between almost all Belgian artificial cement works for the renewal of the "Syndicat des Ciments Artificiels," which controls the home sale of artificial cement. Among the 17 Belgian firms which have agreed to renew this combination are the Societe de Bonne Esperance at Turnhout, the Societe de Niel on Rupel, and the cement works of Cronfestu, Obourg, and Harmignies. The above syndicate has also renewed the agreement with the German cement manufacturers for the sale of artificial cement in the Netherlands.

The King of the Belgians presided on Sunday at the inauguration of the monument which has been erected at Ghent to the artist brothers Hubert and John Van Eyck. The memorial has been placed in the middle of the small square which separates the Chateau of Gerard the Devil from St. Bayon's Cathedral. The pedestal is of granite, and the figures of bronze. The monument represents the two painters sitting in the centre of a semicircular group of allegorical figures, the symbolism of which is the nations glorifying the talent of the two Flemish artists. M. Vaerwick is the architect, and M. Verbanck the sculptor.

New parish council offices in Stockton-road, Ryhope, were opened on Saturday. The building is of two stories, and has on the ground floor a central entrance leading to an inner hall, on one side of which is the general office for rate-collecting and clerk's room. Behind this is a book-store, and on the opposite side of the hall are a waiting-room and cloakroom. The first floor is occupied by the council-chamber, 46ft. by 20ft. The exterior is of red pressed bricks, the elevations being treated in a Georgian style. The architect was Mr. G. Brown, and the builder Mr. Joseph Huntley. The outlay has been £1,900.

Correspondence.

"TOO TRUE."

To the Editor of the BUILDING NEWS.

SIR,—The letter under this heading last week is, I am afraid, typical of many in our profession at the present time. Notwithstanding the fact that trade is booming according to the Blue Books, we, as a profession, do not seem to be sharing the prosperity due to our abilities. There will, of course, always be clever men unable to earn a decent living wage, and the question forces itself, Why? What is the root cause of it all?"

In my own case, although, happily, at the moment not so badly off as your correspondent (I have, however, been beam-ended twice within twelve months), I am working at a wage of less than 40s. per week in order to keep a family of five, in a business which, although somewhat to my liking, does not bring out of me the best that I am capable of. The enclosed photo and my card will prove that my qualifications are, if anything, up to the average.

Will "Registration" help us to secure the professional millennium?—I am, etc.,

ANOTHER.

INCREASED COST OF LIVING.

SIR,—The ever-growing cost of living has become one of the questions of the day, and one is, perhaps, unwittingly inclined to attribute the cause entirely to the wrong source. The question is a most serious one. It is more than this—it is rapidly becoming critical, and the profoundest minds are grappling with the subject in the hope of finding some solution. Take, as an example, the man of moderate means of to-day. He contemplates the erection of a home, or, perhaps, the rebuilding or enlargement of a factory. Immediately he is confronted with the increase in the price of all building material. Timber of all kinds, which this country must import, is keeping pace with other commodities in the price race. But is this within the control of the timber merchants? We venture to state that the profits timber dealers are making to-day are less than ever before. True, the productive labour put upon such a commodity as wood, tracing it all the way along from the felling of the tree in other lands, has had to be more highly paid in recent years; but this would account for but a portion only of the increase in cost to the ultimate consumer. Where, then, must we look for the balance of the increase. Let us examine the non-productive labour put upon this commodity—and this merely serves as an example for all other classes of goods. Take, for instance, the question of transportation. Railway rates have undoubtedly advanced in recent years; but as the railways are subject to the jurisdiction of Governmental control, no very serious criticism is to be offered on this score. We must admit that our goods rates are based on actual competition. The connecting link, therefore, between the above mentioned is the ocean boat. During the last three years ocean rates have jumped up tremendously, as the following comparisons for the years 1910 and 1913, on timber alone, will show:

Montreal to	Increase in 1913 over 1910
Liverpool	34 per cent
London	50 ,,
Manchester	50 ,,
Glasgow	50 ,,
Avonmouth	41 ,,
Newcastle-on-Tyne	33 ,,
Hartlepool	40 ,,
Leith	25 ,,
Dublin red pine	47 ,,
Belfast yellow pine	43 ,,
Sunderland	57 ,,
Aberdeen	26 ,,
Dundee	41 ,,
Hull	19 ,,

It will be noted that the heaviest increases occur to ports between which the largest shipments are made.

There is absolutely no control over ocean rates. The owners may demand whatever rates they wish, and by a pooling of business, which undoubtedly exists, the ultimate consumer has, in the last analysis, to pay the exorbitant toll.

Here, then, is the cause.

What is the remedy?

There must be immediate official control of ocean rates, and indeed, of the entire operation of ocean going craft. This is a distinct obligation put upon the British Board of Trade to co-operate with the representatives of all our outlying dominions and also with such foreign countries as may be interested therein.

This need is imperative; the application of the remedy comparatively easy of accomplishment, and the public welfare demands immediate redress. Will the properly constituted authority rise to a sense of its obligation to the public?

In this connection we have to advise that the Chief of the Board of Railway Commissioners for Canada has been authorised by the Federal Government here to visit your side for the purpose of conferring with the British authorities to see if means cannot be devised whereby some control of ocean carriage may be exercised. Mr. Drayton sails on Saturday next, August 2. His address will be, Mr. H. L. Drayton, K.C., c/o The High Commissioner for Canada, Victoria-street, London.—We are, etc.,

The Canadian Lumbermen's Association.
FRANK HAWKINS, Secretary.
19, Castle-building, Ottawa, Ontario.
July 29.

BARRY v. MINTURN.

SIR,—The attention of our client, Miss Minturn, has been called to a report of this case in the House of Lords, which appears in your issue of the 1st inst. There are inaccuracies in the report which we shall be glad if you will kindly correct.

In the first case, the litigation arose out of a party wall, not out of a "party garden wall," as mentioned by you. In the second place, it was never suggested by our client that Sir John Wolfe Barry should bear the expenses of the repairs. It was originally suggested on her behalf that the cost of the repairs should be borne equally between her and the adjoining owner, and ultimately, in order to facilitate a settlement of the dispute, our client offered to bear the whole of the cost of the repair.—We are, etc.,

REID SHARMAN AND WHITE.
52, Bedford-row, London, W.C.
August 11.

FAILURE OF CONCRETE ROOF TO KEEP WATER OUT.

SIR,—It is not at all surprising that the Clifton and Kersley Coal Co. have had a failure with their concrete roof. No concrete is absolutely impervious to water.

I can, however, refer any of your readers interested to several flat roofs which have been made perfectly watertight by means of Pudlo, a white powder which is added to the cement.

I will instance the workmen's dwellings, which the corporation of Swansea did in 1908, also the flat roofs at Hardwick Hall for the Duke of Devonshire; a roof at the Ruskin College, Oxford, and also one at the Leicestershire County Asylum, amongst many others.—I am, etc.,

J. H. KERNER-GREENWOOD.
King's Lynn.

Major George Stuart Knox R.E. has been appointed Assistant Surveyor, Survey Department of the Federated Malay States.

Mr. James Eastwood, chief assistant to the borough surveyor of Halifax, has been appointed engineer and surveyor to the Sowerby Bridge Urban District Council at a salary of £175 per annum.

At the half-yearly meeting of the South Hants Water Company held at Southampton on Thursday in last week, it was reported that the Bishop's Waltham Water Bill, which authorised the purchase of that undertaking by their company, had received the Royal assent. The cost of purchase will be about £15,000, by which a fresh source of water will be acquired, and two detached districts of the company will be united.

Intercommunication.

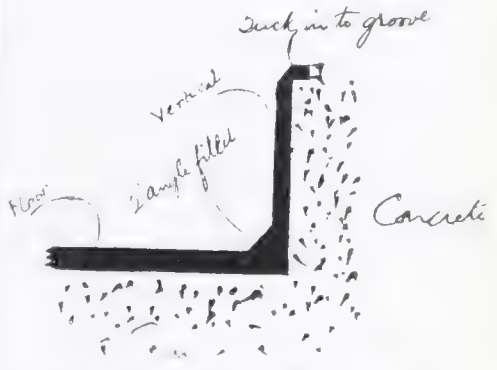
We are requested to Mr. F. J. S. Robertson.

QUESTIONS.

[13129.] BRICKWORK.—I have a small piece of pointed brickwork to do. Would any reader kindly suggest a suitable place? The only point which I am not conversant with, are the proportion of the mixed lime.—X.

REPLIES.

[13129.] WEEPING OF WATER INTO BASEMENT.—The basement here apparently due to the asphalte, and from your manner I would think it is due to the lack of a fillet at the foot of the vertical lining. The best way to overcome the difficulty is to have the floor of the basement asphalted if it is not already done, and connected to the vertical



by a 2in. asphalte fillet as shown. The floor should be weighted down should the pressure of water be great, or a small sump built to collect the water, which could then be pumped out periodically.—F. J. S. Robertson, Sec., Claridge's Patent Asphalte Co., Ltd., 21, Surrey-street, Strand, London, W.C.

[13129.] WEEPING OF WATER INTO BASEMENT.—There are several methods by which the weeping in the basement referred to could be stopped, and they are as follow:—(1) To put a layer of neat Portland cement on the floors and walls which are at present rendered. (2) To make a rendering of the following materials, and float a layer not more than ¼in. thick, two parts of sharp river sand, one part of Portland cement, and 4lb. of "Castor" to every 100lb. of neat cement. "Castor" is a bituminous solution, which makes the cement waterproof. It is obtainable of the Castor Waterproof Co., 110, Fenchurch-street, E.C., in 10lb. tins, at 5s. per tin. (3) Lay a double course of Bangor countess slating in cement, upon a bed previously prepared, and cover with asphalte. (4) Another method, though perhaps not so satisfactory as regards strength, would be a rendering prepared of one part sand to one part Roman cement. This would set in about a quarter of an hour. (5) The most reliable, though undoubtedly the most expensive, would be to cover the floor with a dampcourse of asphalte, excavate, carry through wall, and up outside to above ground-level, and fill in externally with rubble; then cover the floor and walls with cement rendering composed as in clause 2.—No Name.

[13129.]—WEEPING OF WATER INTO BASEMENT.—Expose the exterior face of basement wall where the water penetrates through, and rake out the joints of masonry to form a key for the following specified "Pudlo cement rendering," washing away all dust. Should there be a large quantity of water when the ground is opened out, either form a temporary sump for same or absorb, during operations, with dry cement. First sprinkle the wall with a neat cement wash, to which 5lb. of "Pudlo" have been added for every 100lb. of cement. Immediately afterwards twice render the wall, ½in. thick each time, with a cement mixture 1in. thick as follows:—One part best Portland cement, medium setting quality, 3 parts granite dust or washed sand 1, parts ¼in. aggregate, preferably washed granite dust; 5lb. of "Pudlo" to every 100lb. of cement, i.e., 1lb. of "Pudlo" to every superficial yard. The whole to be well mixed in a protected spot, and riddled through a ¼in. mesh sieve, the water being gently sprinkled through a rose to prevent the "Pudlo" being lifted out of the cement. The whole exterior faces may be applied as above, or merely the sections where water percolates through. Write Messrs. Kerner Greenwood and Co., Ann's-square, King's Lynn (sole owners) for prices of "Pudlo," which is undoubtedly a remarkable "waterproofing" material.—A. H. Winterburn, M.S.A., 12, South View, Blyth-road, Worksop, Notts.

Mr George Cadell Stewart of The Knowe, Burrowstounness, timber merchant has left personal property of the value of £42,002.

During the demolition of the Sun public-house, in Oak-street, Norwich, for the extension of adjoining silk-mills, a Tudor mantelpiece of stone was discovered in a room on the upper floor, built in and plastered over behind a modern fireplace. It has been presented to the Castle Museum in the city. The Sun Inn occupies the site of two tenements which changed hands in 1586 and earlier belonged to the De Norwich family.

LEGAL INTELLIGENCE.

IRONWORK CONSTRUCTORS v. BUILDERS.—Redpath, Brown, and Co. v. W. C. Shepherd and Co.—Judgment has been given by Mr. Muir Mackenzie, the Official Referee in this case, in which plaintiffs claimed £286 balance of amount for steelwork supplied to defendant for City offices in course of erection at No. 10, Coleman-street, E.C. Defendants had counterclaimed for about £700 for damages for a month's delay in delivery. Plaintiffs pleaded that deliveries of steelwork were suspended on account of a dispute between the parties as to non-payment by defendants of plaintiffs' monthly account, and also on account of alleged inaccuracies and changes of design in the plans and drawings of defendants' architect and steelwork engineers. In his judgment, the Official Referee came to the conclusion that the plaintiffs had not failed to deliver the steelwork as promptly as was possible, and that the suspension of deliveries in February, 1913, was justified having regard to the defendants' failure to pay their monthly accounts, and dismissed the counterclaim, with costs. A stay of execution was granted.

BUILDER'S FOREMAN OBTAINS COMPENSATION FOR INJURIES. Before his Honour Judge Bonsey, at the Durham County-court, on Monday, Benjamin Gomersall, of Ferryhill, claimed compensation for injuries received whilst in the employment of Thomas Golightly. Mr. Mundahl, for the applicant, explained that he was formerly foreman to Mr. Golightly, who was a builder. On April 30 of last year applicant was engaged in taking down a skating-rink at Ferryhill. He was working on a platform, when he slipped, falling a distance of about 20ft. He sustained severe injuries to his shoulders, back, and head, and also severe bruising. Applicant's wages were £2 per week, and he was paid compensation until December 6 last. He had since made an attempt to work, but found that he was not in a condition to do so. For the respondents, Dr. Johnston said that applicant was suffering from failing eyesight and Bright's disease. The accident would make the disease, which was latent, become active. Mr. Mundahl contended that if the man had Bright's disease, it was accelerated by the accident. An agreement was arrived at, applicant receiving £110 and costs.

MEASURES BROTHERS, LIMITED, of 53B, Southwark-street, London, S.E., and East Surrey Iron Works, Factory-lane, Croydon.—The Senior Official Receiver and Liquidator of the above-named company intends to apply to the Board of Trade for his release, and any objection to the granting of his release must be notified to the Board of Trade before the 21st inst. A summary of receipts and payments of the Senior Official Receiver and Liquidator is annexed:—

Receipts			
To total receipts from date of winding-up order viz.,			
Surplus after deducting £76,162 8s. 11d. due to debenture holders and £432 7s. 10d. to preferential creditors (estimated to produce per Company's statement)	£119,775	17	2
Other receipts			
Registration fees			1 10 0
Total	£119,775	17	2 £1 10 0
Balance, being amount due to the Board of Trade			239 0 8
			£240 10 8
Payments			
By Board of Trade and Court fees viz.,			
Fees in respect of 2,680 contributories and creditors (including printing, postages, and stationery)	£160	16	0
Percentage on £1 10s. 0d. assets realised	0	1	6
Court fees	0	11	6
			160 9 0
Law costs of solicitor to liquidator			37 9 0
Shorthand writer's charges			30 2 0
Other costs			8 11 3
Costs of notices in Gazette and local papers			2 12 3
Incidental outlay			5 6 9
			£240 10 8

1. At the date of the winding-up order—viz., October 13, 1909, the business of the company was being caried on by a receiver and manager (Mr. Ernest Cooper) for the debenture-holders, appointed by the Court on June 21, 1909. 2. The receiver carried on the business for about two years, and, with the exception of the Southwark-street freehold, the whole of the assets have now been realised by him. As, however, the realisations shown in the receiver's accounts filed in the debenture action do not distinguish between assets taken possession of upon his appointment, and those created in the course of the trading, the realised value of the former is not ascertainable. 3. The goodwill of the business, estimated to produce £80,000, realised £1,850, and the freehold and leasehold properties estimated at £32,986 1s. 9d. have, up to the present, realised £3,511, the 53B, Southwark-street property, which in 1882 was bought by the company at £17,000, remaining unsold; it was offered at auction in April, 1912, but without result. 4. Distributions amounting to 12s. 6d. in the £ have been paid by the Court to debenture-holders, and there is £3,834 15s. 11d. Consols to the credit of the debenture action. It will be seen, therefore, allowing for the remaining property at its original value of £17,000, that the assets are insufficient to pay the debenture claims, and, the surplus of assets estimated by the directors having wholly disappeared, there is no possibility of any payments being made to unsecured creditors or shareholders. 5. During the course of the winding-up, questions of alleged misfeasance by the directors in paying dividends out of capital were considered by the Official Receiver; but no proceedings were recommended. Opinion of counsel was subsequently obtained by direction of the Court in the debenture action, which, in substance, confirmed the Official Receiver's view, and the suggested claims were not, therefore, further pursued. 6. Investigations into the dealings of the managing director with the company led to criminal proceedings against him, in which he was convicted, and sentenced to a term of imprisonment. 7. Creditors and contributories can obtain further information by inquiry at the Department of the Official Receivers, 33, Carey-street, Lincoln's-inn, London, W.C.

BUILDERS FINED FOR UNSTAMPED INSURANCE CARDS.—At Warrington police-court on Thursday in last week, Charles Henry Johnston, builder, Windyhough, Sankey, was summoned for failing to return the unemployment insurance card on the termination of employment of two of his workmen. Defendant said one of the men left without notice, and did not apply for the return of his card. The other card was not fully stamped when the workman asked for it, and he had not seen the man since. A fine of 5s. and costs in each case was imposed. He was further summoned for failing to pay the contribution of three of his workmen, and was ordered to pay 5s. in two of the cases, and to pay double the amount he had omitted to provide, and £5 5s. towards the costs of the case.—In Dundee Sheriff-court, on Monday, Charles Smith, builder, 20, Constitution-street, was charged with having failed to make payments under the National Health Insurance Act in respect of two of his employees. This was the first prosecution under the Act in Dundee. Smith pleaded guilty, and on his behalf an agent stated that the cards of the other employees in Smith's service were all in order. The two men complained of were casual labourers, and it was owing to his clerk having been taken seriously ill that the omission was made. The Procurator-Fiscal said the men were not casual labourers, and accused had received a great many warnings. Sheriff Neish imposed a fine of 28s., or twenty days' imprisonment. On behalf of the Insurance Commissioners, Mr. J. M. Vallance, W.S., Edinburgh, moved for a civil decree for payment to the Commissioners of the sum of 8s. 2d., the value of the stamps which accused omitted to pay. His Lordship granted decree for 8s. 2d.

The salary of Mr. J. Chalk, assistant waterworks engineer to the Southampton Corporation, has been increased to £240 per annum.

A new board school, built at a cost of £2,000 from plans by Messrs. Thoms and Wilkie, of Dundee, has been opened at Muirhead of Liff.

Mr. Albert Hodge has completed his sketch model for a statue of Robert Burns, to be erected in Stirling. The figure will be of bronze.

At Ramsgate yesterday (Thursday), Mr. T. C. Ekin, M.Inst.C.E., held a Local Government Board inquiry into an application by the town council for sanction to borrow £6,500 for the provision of new purifiers at the gasworks, and £3,456 for the erection of a shelter in the Italian Gardens.

The well-known painter, M. Aimé Morot, died at Dinard on Tuesday, at the age of sixty-three. A pupil of Cabanel, he made his début in the Salon at the age of twenty-three, and in the same year won the Prix de Rome with his "Captivé des Juifs à Babylone." Among his chief works are the "Médée," exhibited in the Salon of 1877; the "Bon Samaritain," 1880; the "Bataille de Rézonville," 1886; and the "Charge des Cuirassiers à Reischshoffen," which is in the Luxembourg Gallery, and the ceiling of the Salle des Fêtes in the Hotel de Ville, Paris. In this year's Salon, M. Morot exhibited a portrait of M. Paul Deschanel, the President of the Chamber of Deputies. M. Morot was a Professor at the Ecole des Beaux Arts.

PARLIAMENTARY NOTES.

VENTILATING THE HOUSE OF COMMONS.—At Tuesday's sitting of the recently-appointed Select Committee on the Ventilation of the House of Commons, of which Mr. Charles Bathurst is chairman, Mr. Arthur Patey, chief assistant engineer of H.M. Board of Works, described the apparatus in use for the ventilation of the debating chamber and its galleries. He stated that ozonised air is provided for the occupants of the ladies' gallery—a boon not yet granted to Members of Parliament. The ozone is manufactured by electrical machinery in the basement.

THE ARCHITECTURAL STAFF OF H.M. OFFICE OF WORKS.—Mr. Bennett-Goldney asked Mr. Wedgwood Benn, as representing the First Commissioner of Works, how many public buildings costing more than £15,000 had been designed by the permanent staff of H.M. Office of Works since 1906, including only such buildings as had been built, were under construction, or had been sanctioned by the Government to be constructed, and if he would give a list of these buildings. Mr. Benn promised to supply a list of fifty-three such buildings. The total number of architects of all grades on the establishment of the Office of Works was, he said, sixty-one. Of these, three were Fellows, twenty-four Associates, and four Licentiates of the Royal Institute of British Architects.

REGENT-STREET QUADRANT.—Mr. Runciman, in reply to Mr. Fell, stated that, in settling a design for the completion of Regent-street Quadrant, it is proposed to adhere to the recommendations of the committee which sat to consider the subject in essential particulars.

SHADWELL PARK MEMORIAL. — Mr. Hoare, on Tuesday, asked Mr. Wedgwood Benn whether the Shadwell Park memorial scheme for King Edward VII. had been completed, and when the work would be commenced for clearing the site and laying out the ground. Mr. Wedgwood Benn replied that the contract for the purchase of the ground had been completed, and Sir Alexander Rendel was preparing plans for constructing a river wall.

UNDEVELOPED LAND DUTY. — In the House of Lords on Monday, the Earl of Camperdown complained of the unfair incidence of undeveloped land duty. He pointed out that, whereas in town-planning schemes the use of land was restricted to certain classes of building, the undeveloped land duty on such land was based on a site value calculated on the unrestricted use of the land, and amounting in many cases to 50 per cent. or more of the highest income obtainable from the land at the present time. Lord Strachie, in reply, stated that the object of undeveloped land duty was to prevent land in or in the neighbourhood of great towns from being held up. Land was not subject to undeveloped land duty unless it could be used for better purposes than agriculture. If it could be used more advantageously, it was only right that the ratepayers should get the additional benefit. The Earl of Selborne declared that it was really throwing dust in the eyes of the public to say that the object of undeveloped land duty was merely to prevent land from being held up. It was intended as a means of raising money for the Exchequer, and it was idle to suggest that all the land subject to undeveloped land duty could be built on at once. The Marquess of Crewe reiterated that the main object of the tax was to prevent land that could be built on from being deliberately kept out of the market. Conceivably there might be cases of hardship; but they could be rectified on appeal.

ARCHITECTS FOR THE NEW DELHI.—Mr. King asked the Under-Secretary of State for India, on Wednesday, whether he was aware of the pledge given by himself on July 30, 1912, that efforts would be made by competition to obtain a wide field of selection of architects for the new Delhi; whether the policy then announced had been dropped by the Government of India; and, if so, what ground could be given for the change?—Mr. Montagu: The Government of India contemplate adopting the plan of competition for buildings other than those which have already been allotted to the selected architects.

The town council of Macduff have appointed Mr. John Fowlie, of Cullen, to the position of burgh surveyor and harbour-master.

The Billericay Rural District Council were informed on Tuesday that there are very few applications for the new workmen's cottages erected by the council, though these were built in consequence of complaints of overcrowding and want of housing accommodation. It was stated that many prefer their old and dilapidated cottages, especially as they are being let at a low rent.

Our Office Table.

Another attempt was made at Monday's meeting of the Dublin Corporation to upset the choice of the Metal Bridge site for Sir Hugh Lane's Municipal Art Gallery. Deputations representing the Central Highways Committee and the River Liffey Protection Association attended and stated their objections to building upon the bridge. The Lord Mayor, in replying, said that the responsibility of approving or rejecting the Metal Bridge site ought not to be thrown on the eighty members of the corporation; the public ought to face the issue. The real opposition to the scheme appears to be the choice of a design by an English architect for the gallery.

Mr. Somers Clarke, F.S.A., calls attention, in the *Times*, to the systematic exploration of the unique and stupendous ruins of the Temple of Karnak, which has been in progress since 1895, at a total cost to date of some £30,000, which has, Mr. Somers Clarke believes, been well and economically expended. The excavations were begun eighteen years ago under M. J. de Morgan, at that time Director-General of the Department of Antiquities in Egypt, and as the walls and columns were laid bare down to the level of the ancient floors, so were they repaired and consolidated. This responsible task was placed in the hands of M. George Legrain, who has continued the work with the utmost care up to the present time. Mr. Clarke, commenting on the fact that no consistent scientific or adequate account of the works undertaken has ever been published, although detailed notes and innumerable photographs and drawings have been made by M. Legrain, wisely suggests that there ought to be prepared and published by the Egyptian Service of Antiquities: complete plans, sections, and elevations of the monument up to date; a short but complete description (with dates) of the course of the excavations; a detailed account of the unique temple of Osiris; and a detailed account of the objects found.

Cae Gaer, near Llangurig, Montgomeryshire, stated by the Royal Commission on Welsh Antiquities to be a Roman camp, has been the scene of interesting excavations during the past fortnight, at the suggestion of the landlord (Mr. A. E. Humphreys-Owen, Glansevern) and under the direction of Mr. F. N. Pryce, M.A., of the British Museum. The camp covers an area of 250 yards by 180 yards. No Roman relics were found, but a fine flint knife of the New Stone Age, and good specimens of pot-boilers were unearthed. The pot-boilers found have a peculiar charred and cracked appearance, and, with the knife, are being presented to Aberystwith College museum. The ramparts of the camp consist of a mass of clay, 7ft. 6in. thick and 3ft. 5in. high, built up of narrow layers of deep bluish clay, alternating with thicker lavers of coarser brown clay, mixed with shale fragments. Holes denoted that along the ramparts used to run a wooden palisade, the post holes being two feet apart; and at the south-east corner there was a wooden tower. The camp had two gates. Near the centre a rude floor, 21ft. across, of large water-worn stones, was uncovered.

The county council of Kent at their last meeting considered a scheme proposed by their surveyor, Mr. H. P. Maybury (now chief engineer to the Road Board), for dealing with the portion of Blackfen-road within the urban district of Footscray. The section of road extends for about a mile and a half between the Metropolitan borough of Woolwich on the west and the Bexley urban district on the east. The land on either side of the road is at present, for the most part, undeveloped, and offers of such quantities of land as will be required for the widening and straightening of the road have been obtained on reasonable terms. The county surveyor prepared plans for widening the road to a uniform width of 40ft., for constructing new footpaths and for draining and surfacing with granite grouted with pitch, and estimated the whole cost of the work, including the purchase of land and fencing, at £13,900. The Road Board have agreed to make a grant of £6,858, and to lend the balance of £7,042 free of interest, and repayable by five annual instalments. The council approved the scheme, accepted the offer of the Road Board, and authorised an application of the Local Government Board for their consent to the borrowing of the money.

The Thornton travelling scholarships which are offered annually to workmen engaged in the building trade on garden suburbs have this year been won by Messrs. W. H. Hall, carpenter on the Brentham Garden Suburb; W. E. Cookson, carpenter, Garden Suburb, Liverpool; and J. H. Cannon, foreman plumber, Garden Suburb Builders, Ltd., who are engaged in the development work on the Hampstead Garden Suburb. Prizes to the value of £2 each, offered through Co-partnership Tenants, Ltd., have been won by Messrs. G. Williams (carpenter), J. Gun (foreman bricklayer), F. G. Jones (electrician), and F. Prangell (plumber), all of which are employed by the Garden Suburb Builders, Ltd.

Captain A. J. Dickinson, surveyor to the Redditch Urban District Council, has just issued a report descriptive of the work of the surveyor's department during the past seven years. The total cost of work actually accomplished amounts to £24,863, and the whole of it was planned and carried out entirely by Captain Dickinson. The sewage-disposal works at Ipsley, which cost £10,000, will meet the necessities of the town's growing population for many years to come. The purchase of land from the Sillins estate for £4,900 gives the council space for extensive recreation grounds, future additions to sewage beds, and enough ground on which to build 177 workmen's cottages should this be necessary. Many street-widening improvements have been made, the most recent being in Evesham-street (£1,148), Alcester-street (£450), and Windsor-street corner (£500). In addition, the Earl of Plymouth has laid out two new streets at a cost of about £6,500, and a refuse destructor has been provided for £3,488. The surveyor contemplates that more schemes will be carried into effect in the not distant future, and it is estimated that these will cost £36,780. Of this £1,000 is for the much-discussed and greatly-needed bridge over the Arrow at Beoley Brook. The new street on the Sillins estate, leading from Beoley-road to Holloway-lane, is estimated at £1,800, and the building of the cottages there £33,630.

A petrol motor first-aid machine, belonging to the Radcliffe Fire Brigade, has had its sphere of usefulness increased by the addition of a Merryweather "Hatfield" pump capable of delivering 350 to 400 gallons per minute. This pump replaces the former first-aid cylinder, but the hose and fittings belonging to the latter have been retained, and will be used for delivering a small jet from the "Hatfield" pump, which is admirably suited for such work, in addition to its capacity for throwing more powerful jets in the event of large fires. The drive from the motor to the pump is taken from the transmission shaft between the clutch and the change-speed gearbox, a pinion being provided which slides in and out of gear, as required, with a spur-wheel on the pump shaft. It is interesting to note that although the chassis is by another maker, the Merryweather firm were able to make a very successful job, and satisfactory tests were held last week on the Canal Bank, Radcliffe, under the charge of the superintendent of the Fire Brigade (Mr. J. H. Heywood). It may be mentioned that the Radcliffe Brigade also possesses a 450 gallon Merryweather "Hatfield" motor-pump, supplied in 1909, so is thoroughly well equipped with up-to-date material for dealing with fire.

We have received a new booklet from Messrs. Kerner-Greenwood and Co., King's Lynn, dealing with their patented powder, "Pudlo" (makes cement waterproof), which they manufacture at King's Lynn. The booklet is most comprehensive. It shows results of tests by experts, such men as Faija and Kirkaldy, which prove that the addition of "Pudlo" does not adversely affect the cement nor interfere with its setting. The most important tests are those showing that both the tensile and the compression strains are increased when "Pudlo" is added. Among the testimonials, one stands out very prominently as an example of what can be done with Pudloed Cement. A surveyor was constructing some very large sewerage tanks in reinforced concrete, which were set 6ft. in ground heavily charged with water. The excavations made water as fast as two men could pump it out, and twelve inches of ordinary concrete failed to keep back the water which was forced through. After mixing 3 per cent. of "Pudlo" in the cement, the surveyor reported he was able to keep back the water and make a dry floor. There are also copies of letters from satisfied users who have constructed Pudloed concrete flat roofs with complete success. Ruskin College, at Oxford, the corporation of Swansea, Duke of Devonshire, etc., etc., have used "Pudlo" for forming flat roofs with complete success. The classes of work in regard to which "Pudlo" offers an economical and efficient remedy for, and peventative of, damp and water percolation, includes the lining of reservoirs and baths, garage pits, stokeholes, underground basements, vertical dampcourses, weather-beaten or porous walls, faulty sewers, leaking cisterns and tanks. Any reader can obtain a copy by writing to the makers at Ann's square, King's Lynn.

The third year students of the London Architectural Association Day School have just started on a fortnight's visit to Paris, under the directorship of their new master, Mr. Robert Atkinson.

The statue of the late Sir Henry Campbell Bannerman which is to be erected in Stirling, the constituency represented for so many years by the late Prime Minister, will be unveiled by Mr. Asquith at the end of October. The statue has been erected by public subscription to commemorate Sir Henry's long connection with the Stirling Boroughs.

A monument is to be erected at Sangatte to the memory of the aviator Hubert Latham, who was the first who attempted to fly across the Channel. The airman, who died last year while hunting big game in Africa, will be represented standing on a rock, a cigarette between his fingers. At the foot of a column nearly 40ft. high will be a figure representing aviation and pointing with outstretched hand towards the English coast.

The property in Church-lane, Burford, Oxon., formerly the old hospital and the Jubilee Cottage adjoining, has been acquired by the governors of the Grammar School, who have accepted the tender of Messrs. A. Groves and Sons, at £695, for building alteration and additions, which will include library, dormitories, masters and senior boys' rooms. The whole will be provided with electric lighting and hot water heating apparatus.

As the result of a conference held among representatives of the Islington, Hackney and Stoke Newington Borough Councils it has been decided to submit a proposal to the London County Council for the conversion of the old mansion in Clissold Park into a museum, and an appeal has been issued asking for offers of prints, drawings, and photographs of historical buildings. Prior to the conference the County Council announced its intention of transforming the building into residential flats for occupation by the Council's employees.

The Mayor of Oxfordshire opened the women's new bathing-place at Tumbling Bay. An expanse of mud and willow stumps has been cleared, raised, and levelled, and a bathing-place thus secured with a land surface of 124ft. in length by 64ft. wide at the eastern end and 24ft. at the western end. The available water area is 126ft. by 52ft. The buildings consist of two dressing-sheds, open in front, each 32ft. by 6ft., four enclosed boxes 6ft. by 5ft., and nine similar boxes 6ft. by 3ft. 6in. The back, ends, and roof of these buildings are of wrought-iron framing and galvanised corrugated sheeting, with wood partitions and fittings. Across the river at each end of the bathing-place a screen 8ft. high has been erected of galvanised sheets carried by steel girders and massive piles. The plans were prepared and the works carried out under the supervision of the city engineer's department. The contractors for the buildings and fencing were Messrs. G. Wyatt and Son, of 67, St. Giles-street, Oxford, and for the river-wall and other concrete-work Mr. Thomas Bossom, 8, Marlborough-road. The total cost was £580.

Trade News.

WAGES MOVEMENTS.

BUILDING TRADE UNIONS AMALGAMATION.—The result of the ballot vote on the new scheme for the amalgamation of the Building Trade Unions was officially announced on Tuesday. Voting took place on two proposals: one amalgamation for trade purposes only, and the other amalgamation for trade and friendly benefits. The returns from sixteen Unions showed that for the first proposal 14,279 voted in favour and 11,483 against, and for the second the voting was 9,611 for and 12,001 against. The Unions in favour of the first proposal have been invited to send delegates to another conference.

BATLEY.—The masons and bricklayers in the Batley district, who had been on strike for more than a week, resumed work on Monday. The terms of the settlement involve a halfpenny advance of wages to 9d. an hour forthwith, and a further similar advance as from January 1. Originally the men asked for a penny, and the masters first offered a halfpenny now, with another halfpenny next May.

KIRKCALDY.—The plasterers of Kirkcaldy and district connected with the Scottish National Operative Plasterers' Federal Union, having failed to come to terms with their employers, ceased work on Saturday. At present those in Kirkcaldy Burgh are paid 8d. per hour, and those employed east of the coast from Kirkcaldy are only paid 7½d. per hour for a 51 hours' week. They demand an increase so as to have common rate of 9d. per hour all over the district. Seven years ago they were paid 9d. per hour, but were reduced to 8½d., and five years ago they had a further reduction of ½d.

LEICESTERSHIRE DISPUTE SETTLED.—All the men of the Mountsorrel Granite Company, at Stoney Stanton, who have been on strike for the past month, returned to work on Monday, a satisfactory settlement having been arrived at with Mr. R. E. Martin, the managing director. Under the new arrangements the wages of the men and boys will be advanced from 1s. to 4s. per week, while the wages of the daymen are to be the same in the short days of winter as in the summer, although the hours of labour in winter are considerably reduced. There are also other concessions.

SELBY.—The bricklayers who struck a few weeks ago for an extra halfpenny an hour have begun work at an increased rate of wages.

Mr. William Slater, of Vernon-street, Derby, brick, tile, and stone merchant, died on February 19, leaving £28,202.

Excavations were begun on Monday on the north-east rampart of the Roman camp at the head of Windermere. Indications of the foundation of walls and buildings have been found, and also several pieces of Roman pottery, tiles, tools, enamelled buttons, and a pair of sandals.

The Bishop of St Asaph dedicated at St Paul's (Duke of Clarence Memorial) Church, Llandudno, on Sunday, a new stained-glass window placed recently in the east end of the chancel to the memory of the late Lady Henrietta Augusta Mostyn. The subject is the Shunamite woman.

A sub-committee of the Blackpool Corporation has decided to recommend the appointment of Mr. William Chew as gas engineer and manager, in succession to his father, Mr. John Chew, who is retiring at the age of eighty-six, after fifty years of service in the corporation. Mr. Chew has been assistant engineer for several years. His son, Mr. John Chew, jun., is also recommended for the post of assistant engineer.

At Ellesmere Port on Friday, the chairman of the urban district council laid the foundation-stone of the first of sixty-one houses that are to be built on a town-planning scheme by Mr. E. Peter Jones, J.P., C.C. Twenty houses will be built to the acre. Mr. Jones has already erected several hundred model dwellings for his workpeople, and the new estate adjoining these houses. They will consist of four blocks surrounding an ornamental open space.

Owing to the ignorant prudery of a parish priest, the valuable 15th-Century frescoes in the church of Benouville, in Calvados, have been ruined. The frescoes, which were discovered in 1895, were among the finest specimens of 15th-Century ecclesiastical art. They represented scenes on the Day of Judgment and the old French moral parable of the Three Dead Men and the Three Living. The frescoes, which were in good preservation, were painted in a vigorous fashion.

LATEST PRICES.

IRON.

Steel Joists, Belgian and German (ex steamer, London)	per ton	£6	2	6	to	£6	5	0
Steel Joists, English		7	10	0	,,	7	12	6
Wrought-Iron Girder Plates		7	0	0	,,	7	5	0
Steel Girder Plates		7	2	6	,,	8	2	6
Bar Iron, good Staffs		6	5	0	,,	8	10	0
Do., Lowmoor, Flat, Round, or Square		20	0	0	,,	0	0	0
Do., Welsh		5	15	0	,,	5	17	0
Boiler Plates, Iron—								
South Staffs		8	0	0	,,	8	15	0
Best Snedshill		9	0	0	,,	9	10	0

Angles 10s., Tees 20s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £8 15s. to £9.
Ditto galvanised, £14 to £15 10s. per ton.

Galvanised Corrugated Sheet Iron—

	No. 18 to 20.	No. 22 to 24
6ft. to 8ft. long, inclusive	Per ton.	Per ton.
gauge	£13 0 0	£13 10 0
Best ditto	13 0 0	14 0 0

Wire Nails (Points de Paris)—

3 to 7	8	9	10	11	12	13	14	15	B.W.G.
8/3	8/9	9/3	9/9	10/3	11/-	11/9	12/6	13/6	per cwt.

	Per ton.				Per ton.		
Cast-Iron Columns	£7	10	0	to	£9	0	0
Cast-Iron Stanchions	7	10	0	,,	9	0	0
Rolled-Iron Fencing Wire	8	5	0	,,	8	10	0
Rolled-Steel Fencing Wire	7	5	0	,,	7	10	0
,, ,, ,, Galvanised	8	15	0	,,	9	5	0
Cast-Iron Sash Weights	5	0	0	,,	5	5	0
Cut Floor Brads	9	15	0	,,		—	
Corrugated Iron, 24 gauge	16	0	0	,,		—	
Galvanised Wire Strand, 7 ply, 14 B.W.G.	14	5	0	,,		—	

B.B. Drawn Telegraph Wire, Galvanised—

0 to 8	9	10	11	12	B.W.G.
£10 10s.	£10 15s.	£11 0s.	£11 5s.	£11 15s.	per ton.

Cast-Iron Socket Pipes—							
3in. diameter	£6	2	6	to	£6	7	0
4in. to 6in.	6	0	0	,,	6	5	0
7in. to 24in. (all sizes)	5	7	6	,,	6	0	0

[Coated with composition, 5s. 0d. per ton extra, turned and bored joints, 5s. 0d. per ton extra.]

Pig Iron—	Per ton.		
Cold Blast, Lilleshall	110s. 0d.	to	117s. 6d
Hot Blast, ditto	70s. 0d.	,,	75s. 0d.

Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—

Gas-Tubes	75	p.c.
Water-Tubes	72½	,,
Steam-Tubes	67½	,,
Galvanised Gas-Tubes	65	,,
Galvanised Water-Tubes	62½	,,
Galvanised Steam-Tubes	57½	,,

OTHER METALS.

Spelter, Silesian	Per ton	£20	15	0	to	£20	17	6
Lead Water Pipe, Town		25	0	0	,,		—	
,, ,, ,, Country		25	15	0	,,		—	
Lead Barrel Pipe, Town		26	0	0	,,		—	
,, ,, ,, Country		26	15	0	,,		—	
Lead Pipe, Tinned inside, Town		27	0	0	,,		—	
,, ,, ,, ,, Country		27	15	0	,,		—	
Lead Pipe, Tinned inside and outside, Town		29	10	0	,,		—	
,, ,, ,, ,, Country		30	5	0	,,		—	
Composition Gas-Pipe, Town		28	0	0	,,		—	
,, ,, Country		28	15	0	,,		—	
Lead Soil-pipe (up to 4½in.) Town		28	0	0	,,		—	
,, ,, ,, Country		28	15	0	,,		—	
[Over 4½in. £1 per ton extra.]								
Lead Shot, in 28lb. bags		24	15	0	,,		—	
Copper Sheets, sheathing & rods		82	0	0	,,	82	10	0
Copper, British Cake and Ingot		74	0	0	,,	74	10	0
Tin, English Ingots		191	10	0	,,	192	0	0
Do., Bars		192	10	0	,,	193	0	0
Pig Lead, in 1cwt. pigs (Town)		22	0	0	,,		—	
Sheet Lead, Town		24	10	0	,,		—	
,, ,, Country		25	5	0	,,		—	
Genuine White Lead		30	15	0	,,		—	
Refined Red Lead		25	10	0	,,		—	
Sheet Zinc		30	0	0	,,		—	
Old Lead, against account		19	10	0	,,		—	
Tin	per cwt.	11	0	0	,,		—	
Cut nails (per cwt. basis, ordinary brand		0	11	6	,,		—	

TIMBER.

CONSTRUCTIONAL.

Yellow Pine Deals, Quebec, per standard:—	1st quality	£38	0	0	to	£45	0	0
,, ,, ,,	2nd ,,	26	0	0	,,	32	0	0
,, ,, ,,	3rd ,,	16	0	0	,,	18	10	0
Spruce Deals: St. Johns		10	0	0	,,	11	10	0
,, ,, Miramichi		9	10	0	,,	10	10	0
,, Boards: Swag		11	0	0	,,	12	0	0
Red Deals: Archangel 1st quality		21	0	0	,,	24	0	0
,, ,, ,,	2nd ,,	16	0	0	,,	19	0	0
,, ,, ,,	3rd ,,	13	0	0	,,	14	0	0
,, ,, St. Petersburg—								
,, ,, ,,	1st quality	16	10	0	,,	18	0	0
,, ,, ,,	2nd ,,	14	10	0	,,	15	10	0
,, ,, Wyburg & Uleaborg		12	10	0	,,	15	0	0
,, Gefle, Gothenburg, and Stockholm		12	10	0	,,	17	0	0
White Deals: Crown		14	0	0	,,	15	10	0
,, ,, Seconds		11	10	0	,,	13	0	0
Flooring: White and Planed—								
1st and 2nd quality mixed		10	15	0	,,	11	15	0
1st, 2nd, & 3rd quality mixed		10	5	0	,,	11	0	0
Red Planed, 1st quality		14	10	0	,,	17	0	0
Pitch Pine: Prime Deals and Boards		18	0	0	,,	23	0	0
Lignum Vitæ	Per ton	7	0	0	,,	14	0	0

	Per cubic foot.						
Yellow Pine Logs (waney board)	0	5	0	,,	0	5	6
Pitch Pine Logs	0	2	0	,,	0	2	6
Birch: Quebec Logs	0	2	3	,,	0	2	9
Oak: Austrian Wainscot	0	7	0	,,	0	8	0
Mahogany: Gaboon	0	2	0	,,	0	2	3

FURNITURE AND HARDWOODS.

Teak: Burmese, per load, 50ft.	£20	0	0	to	£25	0	0
Teak: Java, per load, 50ft.	16	0	0	,,	21	0	0
	Per cubic foot.						
Oak Planks: U.S.A., imported	0	1	9	to	0	2	6
,, Boards ,, ,, Prm.	0	3	0	,,	0	3	6
,, ,, ,, ,, Mdm.	0	2	6	,,	0	2	9
Sequoia (Californian Redwood)	0	2	4	,,	0	3	6
Birch: Quebec logs	0	2	3	,,	0	2	9
,, ,, sawn planks	0	1	3	,,	0	2	0
Oak: Austrian Wainscot	0	7	0	,,	0	8	0
Walnut: Prime boards and planks	0	6	0	,,	0	6	6
Walnut: Mdm. ,, ,,	0	3	6	,,	0	4	6
Greenheart: Hewn logs	0	3	3	,,	0	4	0
Cedar: Cigar box	0	4	9	,,	0	5	6
Satin Walnut: Imp. sawn boards, prime	0	2	4	,,	0	2	9
Orham: Imp. sawn boards, prime	0	2	0	,,	0	2	3
Mahogany: St. Domingo, Cuba, and Honduras	0	6	0	,,	0	9	0
,, African, Assinee, &c.	0	5	0	,,	0	6	6
,, Lagos and Benin	0	4	6	,,	0	6	0
,, Sekondi and Cape Lopez	0	3	0	,,	0	4	0
,, Gaboon	0	2	0	,,	0	2	3
Satinwood: West Indian	0	10	0	,,	0	14	0
Rosewood	Per ton	8	0	0	,,	12	0	0
Lignum Vitæ	,,	7	0	0	,,	14	0	0

STONE.*

Red Mansfield, in blocks	per foot cube	£0	2	4
Darley Dale, ditto	,,	0	2	3
Red Corsehill, ditto	,,	0	2	2
Closeburn Red Freestone, ditto	,,	0	2	0
Ancaster, ditto	,,	0	1	10
Greenshill, ditto	,,	0	1	10
Chilmark, ditto (in truck at Nine Elms)	,,	0	1	10½
Hard York, ditto	,,	0	2	10
Ditto ditto 6in. sawn both sides, landings, random sizes	per foot sup.	0	2	8
Ditto ditto 3in. slab sawn two sides, random sizes	,,		1	3

* All F.O.R. London.

Bath Stone, delivered on road waggons, Paddington Depot	per foot cube	0	1	7½
Ditto, ditto, Nine Elms Depot	,,	0	1	9½
Beer Stone, delivered on rail at Seaton Station	,,	0	1	0
Ditto, delivered at Nine Elms Station	,,	0	1	6

Portland Stone, in random blocks of 20ft. average:—

Delivered on road waggons at Paddington Depot, Nine Elms Depot, or Pimlico Wharf	Brown Whit Bed. Per foot cube.	White Base Bed
	£0 2 3	£0 2

SLATES.

	in. in.	£	s.	d.	per 1,000 of 1,200 at r.stn
Blue Portmadoc	20×10	12	12	6	
,, ,,	16× 8	6	12	6	,, ,,
Blue Bangor	20×10	13	2	6	,, ,,
,, ,,	20×12	13	17	6	,, ,,
First quality	20×10	13	0	0	,, ,,
,, ,,	20×12	13	15	0	,, ,,
,, ,,	16× 8	7	5	0	,, ,,
Eureka unfading green	20×10	15	17	6	,, ,,
,, ,,	20×12	18	7	6	,, ,,
,, ,,	18×10	13	5	0	,, ,,
,, ,,	16× 8	10	5	0	,, ,,
Permanent green	20×10	11	12	6	,, ,,
,, ,,	18×10	9	12	6	,, ,,
,, ,,	16× 8	6	12	6	,,

BRICKS.

(All prices net.)

First Hard Stocks	£1	15	0	per 1,000 alongside, in		
Second Hard Stocks	1	11	0	,,	,,	river
Mild Stocks	1	9	0	,,	,,	,,
Picked Stocks for Facings	2	5	0	,,	delivered at rly. stn.	
Flettons	1	10	0	,,	,,	,,
Pressed Wire Cuts	1	18	0	,,	,,	,,
Red Wire Cuts	1	14	0	,,	,,	,,
Best Fareham Red	3	12	0		,,	,,
Best Red Pressed Ruabon Facing	5	0	0	,,	,,	,,
Best Blue Pressed Staffordshire	3	15	0	,,	,,	,,
Ditto Bullnose	4	0	0	,,	,,	,,
Best Stourbridge Firebricks	3	14	0	,,	,,	,,
2¾in. Best Red Accrington Plastic Facing Bricks	4	10	6	,,	Net, delivered in full truck loads in London.	
* Accrington Best Red Plastic Facing Bricks				per 1,000	£2	10	0
3⅛" ditto Second Best Plastic ditto					2	2	6
Ditto Ordinary Second Bricks					1	11	3
Ditto Plastic Engineering Bricks					1	17	6
Sewer Arch Brick not more than 3⅛" in thickest part					2	0	0
3⅛" Chimney Bricks fit for outside work					2	6	0
3⅛" ditto ditto through and through					2	0	0
3⅛" Beaded, Ovolo and Bevel Jambs; Octagons; 2¼" and ¾" radius Bullnoses; Stock patterns					3	7	6
Accrington Air Bricks, 9" × 2 course deep, each					0	0	6
Ditto ditto 9" × 1 course				,,	0	0	3

Accrington Camber Arches:—

3 course deep, 4½" soffit, per foot opening							0	1	3
4	ditto	4½"	ditto	ditto	ditto		0	1	8
5	ditto	4½"	ditto	ditto	ditto		0	2	1
6	ditto	4½"	ditto	ditto	ditto		0	2	6
3	ditto	9"	ditto	ditto	ditto		0	2	1
4	ditto	9"	ditto	ditto	ditto		0	2	11
5	ditto	9"	ditto	ditto	ditto		0	3	9
6	ditto	9"	ditto	ditto	ditto		0	4	6

Net free on rail or free on boat at works

GLAZED BRICKS.

HARD GLAZES, (PER 1,000.)

	White, Ivory, and Salt Glazed. Best.	Buff, Cream, Other Seconds.	Best. & Bronze.	Other Colours.	Second Colours.
Stretchers—	£13 7 6	£10 17 6	£13 17 6	£17 17 6	£12 7 6
Headers—	11 17 6	10 7 6	13 7 6	17 7 6	11 17 6
Quoins, Bullnose, and 4½in. Flats—	15 17 6	14 17 6	17 17 6	21 7 6	15 17 6
Double Stretchers—	17 17 6	16 7 6	20 17 6	24 7 6	17 17 6
Double Headers—	14 17 6	13 7 6	17 17 6	21 7 6	14 17 6
One side and two ends, square—	18 17 6	17 7 6	21 17 6	26 7 6	18 17 6
Two sides and one end, square—	19 17 6	18 7 6	23 17 6	26 17 6	19 17 6
Splays and Squints—	17 7 6	15 17 6	21 17 6	24 17 6	17 7

Plinth and Hollow Bricks. Stretchers and Headers—
5d. each 4d. each 6d. each 6d. each 5d. each

Double Bullnose, Round Ends, Bullnose Stops—
5d. each 4d. each 6d. each 6d. each 5d. each

Rounded Internal Angles—
4d. each 3d. each 5d. each 5d. each 4d. each

MOULDED BRICKS.

Stretchers and Headers—
8d. each 8d. each 8d. each 8d. each 8d. each

Internal and External Angles—
1/2 each 1/2 each 1/2 each 1/2 each 1/2 each

Cill Bullnose, Stretchers and Headers—
5d. each 4d. each 6d. each 6d. each 5d. each

Majolica or Soft Glazed Stretchers and Headers ..... Per 1,000 £22 17 6

" Quoins and Bullnose... 27 17 6

Compass bricks, circular and arch bricks of single radius £6 per 1,000 over above list for their respective kinds and colours } Not exceeding 9in.

Camber arch bricks, any kind or colour, 1s. 2d. each ..... } by 4½in. by 2½in.

Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.

* These prices are carriage paid in full truck loads to London Stations.

	s.	d.	
Thames Sand	7	6	per yard, delivered
Pit Sand	7	0	" "
Thames Ballast	5	6	" "

	s.	d.		Per ton,
Best Portland Cement	36	0	to 41	0 delivered
Ground Blue Lias Lime	21	0	per ton delivered.	

Exclusive of charge for sacks.

	s.	d.		Per yard,
Grey Stone Lime	13	6	to 14	0 delivered

Stourbridge Fireclay in sacks 27s. 0d. per ton at railway station.

TILES.

	s.	d.		Dlvrd. at
Plain red roofing tiles	42	0	per 1000	ry. stn.
Hip and Valley tiles	3	7	per doz.	" "
Broseley tiles	50	0	per 1000	" "
Ornamental tiles	52	6	"	" "
Hip and Valley tiles	4	0	per doz.	" "
Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000	" "
Ornamental do.	60	0	"	" "
Hip tiles	4	0	per doz.	" "
Valley tiles	3	0	"	" "
Selected "Perfecta" roofing tiles:—Plain tiles (Peake's)	46	0	per 1000	" "
Ornamental do.	48	6	"	" "
Hip tiles	3	10½	per doz.	" "
Valley tiles	3	4½	"	" "
"Rosemary" brand plain tiles	48	0	per 1000	" "
Ornamental tiles	50	0	"	" "
Hip tiles	4	0	per doz.	" "
Valley tiles	3	8	"	" "
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000	" "
Hand-made sand-faced	45	0	"	" "
Hip tiles	4	0	per doz.	" "
Valley tiles	3	6	"	" "
Hartshill" brand plain tiles, sand-faced	50	0	per 1000	" "
Pressed	47	6	"	" "
Ornamental do.	50	0	"	" "
Hip tiles	4	0	per doz.	" "
alley tiles	3	6		" "

OILS.

Rapeseed, English pale, per tun	£28	15	0	to £29	5	0
Do., brown ..... " ...	26	15	0	" 27	5	0
Cottonseed, refined ..... " ...	29	0	0	" 30	0	0
Olive, Spanish..... " ...	39	10	0	" 40	0	0
Seal, pale ..... " ...	21	0	0	" 21	10	0
Cocoanut, Cochin ..... " ...	46	0	0	" 46	10	0
Do., Ceylon ..... " ...	42	10	0	" 43	0	0
Do., Mauritius ..... " ...	42	10	0	" 43	0	0
Palm, Lagos..... " ...	32	5	0	" 33	5	0
Do. Nut Kernel ..... " ...	35	0	0	" 35	10	0
Oleine ..... " ...	17	5	0	" 19	5	0
Sperm ..... " ...	30	0	0	" 31	0	0
Lubricating U.S. ..... per gal	0	7	0	" 0	8	0
Petroleum refined..... " ...	0	0	6¾	" 0	0	6¾
Tar, Stockholm..... per barrel	1	6	0	" 1	10	0
Do., Archangel ..... " ...	0	19	6	" 1	0	0
Linseed Oil..... per gal.	0	2	6	"	—	
Baltic Oil ..... " ...	0	2	8	"	—	
Turpentine ..... " ...	0	2	5½	"	—	
Putty (Genuine Linseed Oil) ..... } per cwt.	0	9	0	"	—	
Pure Linseed Oil "Stority" Brand } "	0	10	0	"	—	

GLASS (IN CRATES).

	15oz.	21oz.	26oz.	32oz.
English Sheet Glass: Fourths	2d.	3d.	3½d.	4½d.
Thirds	2½d.	3½d.	4½d.	5½d.
Fluted Sheet	2¾d.	3½d.	6½d.	7d.
Hartley's English Rolled Plate:	⅛in. 2½d.	3/16in. 2½d.	¼in. 3d.	
Figured Rolled and Repoussine			White. 3½d.	Tinted 5d.

VARNISHES, &c.

	Per gallon.		
Fine Pale Oak Varnish	£0	8	0
Pale Copal Oak	0	10	0
Superfine Pale Elastic Oak	0	12	6
Fine Extra Hard Church Oak	0	10	0
Superfine Hard drying Oak, for seats of churches	0	14	0
Fine Elastic Carriage	0	12	0
Superfine Pale Elastic Carriage	0	16	0
Fine Pale Maple	0	16	0
Finest Pale Durable Copal	0	18	0
Extra Pale French Oil	1	1	0
Eggshell Flatting Varnish	0	18	9
White Copal Enamel	1	4	0
Extra Pale Paper	0	12	9
Best Japan Gold Size	0	10	9
Best Black Japan	0	16	0
Oak and Mahogany Stain	0	9	0
Brunswick Black	0	8	0
Berlin Black	0	16	0
Knotting	0	10	0
French and Brush Polish	0	10	0

TRADE NOTES.

Messrs. Geoffrey Lucas and Arthur Lodge, architects, have removed from 14, Hart-street, to chambers at 13, Gray's Inn-square, W.C., and their telephone number is now Holborn 857.

The reservoir at King Edward's Sanatorium has been specified to be treated with "Pudlo," the powder which makes cement waterproof, made at King's Lynn by Kerner-Greenwood and Co.

Under the direction of Mr. Richard Henderson, architect, Glasgow, Boyle's latest patent "air-pump" ventilators have been applied to Trinity United Free Church Halls, Johnstone, N.B.

The business of Smith's Advertising Agency which has been established for thirty-five years, has, for family reasons, been converted into a private limited company. The personnel of the business will continue as hitherto, with Mr. Philip Smith as principal director.

Messrs. T. E. Collcutt and Stanley Hamp, of 36, Bloomsbury-square, London, W.C., have taken into partnership Mr. Philip Tilden, a former pupil, son of Sir William Tilden, F.R.S., LL.D., and will continue to practise as Messrs. Collcutt, Hamp, and Tilden, at the same address.

At the Royal College of Surgeons there has been unveiled a bust of Lord Lister, executed by Sir Thomas Brock, R.A.

New infants' schools were recently opened at Englefield-green, Egham. The architect is Mr. William Menzies, of Englefield-green.

The first premium in the competition for a city police-station for Regina, Alberta, has been awarded to Messrs. Clemesha and Portnall.

The President of the Board of Education has appointed Sir Frank Short, R.A., P.R.E., to be Professor (supernumerary) of Etching and Engraving in the Royal College of Art.

The Kent County Council have definitely decided to build a central sanatorium for Kent for the treatment of tuberculosis. Provision will be made for 100 beds, and the capital expenditure, which will be borne by the council, will amount to £6,000. The original proposal was to erect more than one building, with provision for a total of 205 beds.

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WHITE SILICA PAVING.

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Olivers'

Seasoned

Hardwoods,

APPLY TO—

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120, Bunhill Row, London, E.C.

TENDERS.

. Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

BEXLEY.—For reconstruction of high-tension switchboard, for the urban district council —
Siemens Bros. and Co., Ltd. ... £867 15 0
(Accepted.)

BIGGLESWADE.—For the erection of a pair of cottages, Saffron-road, Biggleswade, for Mr. C. Ferguson. Mr. Thomas Cockrill, A.M.Inst.C.E., 8, Bank Buildings, Bedford and Biggleswade, architect —
Allen, M. J., Biggleswade £140 0 0
Wright, C., Langford (accepted) ... 122 10 0

BIGGLESWADE.—For the erection of three cottages, Hitchin-street, Biggleswade, for Messrs. Hy. Franklin and Son. Mr. T. Cockrill, A.M.I.C.E., 8, Bank Buildings, Bedford, architect:—
Bartle, G., Potton £710 0 0
Wright, C., Langford 700 0 0
Allen, M. J., Biggleswade ... 685 0 0
* Accepted subject to amendment.

BIGGLESWADE.—For alterations to the Masonic Hall, Biggleswade. Mr. T. Cockrill, A.M.I.C.E., 8, Bank Buildings, Bedford, architect —
Wright, C., Langford £295 10 0
Allen, M. J., Biggleswade* ... 285 0 0
* Accepted.

BOURNEMOUTH.—For supply of furniture and fittings at the new law courts, for the corporation —
Drake and Son (accepted) £829 15 6

BOURNEMOUTH.—For erection of convenience in Boscombe Gardens, for the corporation:—
Miller, J., and Son, Bournemouth £519 0 0
(Accepted.)

BOURNEMOUTH.—For erection of Christ Church (Westbourne), Bournemouth. Mr. E. H. Lingen Barker, architect, 10, Pembridge Mansions, London, W. Quantities by Mr. G. Silvester, F.S.I., 7, Adam-street, Adelphi, London, W.C. —

McWilliams & Son, Bournemouth	£6,866	0	0
Bath and Son, Bournemouth ...	6 859	0	0
Luscombe and Son, Exeter ...	6,844	0	0
Pitcard and Son, Langport ...	6,770	0	0
Jones and Son, Bournemouth ...	6,693	0	0
Fassmidge and Son, Uxbridge ...	6,583	0	0
White, Bowman, Bournemouth ...	6,580	0	0
Cook and Sons, Crawley	6,574	0	0
Pattinson and Co., London ...	6,559	0	0
Goddard and Sons, Farnham ...	6,535	0	0
Merrick, Glastonbury	6,518	0	0
Jones and Seward, Bournemouth	6,476	0	0
Ellis, Guildford	6,457	0	0
Hoare and Sons, Bournemouth ...	6,436	0	0
Staines and Son, London	6,320	0	0
Jarvis and Sons, London	6,280	0	0
Foster Bros., Norwood	6,278	0	0
Hayward, W. & H., Bournemouth*	6,275	0	0
Bunning and Co., Godalming ...	6,249	0	0
Everitt and Sons, Croydon ...	6,214	0	0
Jenkins and Sons, Bournemouth	6,133	0	0
Franklin, Ltd., Duddington ...	6,098	0	0

All without allowances for old materials on site.
* Accepted with modifications.

BRIGHTON.—For additions to St. Andrew's Schools, Portslade. Mr. E. H. Lingen Barker, 10, Pembridge Mansions, W., architect. Quantities by Mr. G. Silvester, F.S.I., 7, Adam-street, Adelphi, W.C. —

Langley and Co., Crawley ...	£4,948	0	0
Ellis, Guildford	4,914	0	0
Goddard and Sons, Farnham ...	4,878	0	0
Baker and Co., Portslade	4,856	0	0
Penfold, Brighton	4,847	0	0
Everitt and Sons, Croydon ...	4,819	0	0
Foster Bros., Norwood	4,670	0	0
Rowland Bros., Horsham	4,596	0	0
Cook and Sons, Crawley	4,586	0	0
Saunders, Portslade	4,564	0	0
McKella and Westerman, Hove	4,548	0	0
Franklin, Ltd., Deddington ...	4,499	0	0
Sandell and Sons, Worthing ...	4,389	0	0
Packham and Co., Brighton ...	4,361	0	0
Jerman, Plaistow	4,196	0	0

* Accepted with modifications.

BRIXTON, S.W.—For structural alterations and additions to premises Nos. 486 488, Brixton-road, S.W., for Messrs. Moreley and Lanceley, Ltd. Messrs. T. Jay Evans and Son, M.S.A., 34-35, High Holborn, W.C., architects and surveyors. Quantities by Messrs. Gleed, Sons, and Co., 8 and 9 Martin's-lane, Cannon-street, E.C.:—

Griggs and Son, Cubitt Town ...	£6,666	10	0
Halliday and Greenwood	6,666	0	0
Simpson and Son, Paddington ...	6,377	0	0
Courtney and Fairbairn	6,287	0	0
Higgs and Hill	6,260	0	0
Downs, W.	6,229	0	0
Jarvis and Son, Hackney	6,110	0	0
Falkener and Sons...	6,083	0	0
Adamson and Son, Putney ...	5,929	0	0
Parker and Sons Peckham* ...	5,882	0	0

Accepted.

BURFORD.—For grammar school extensions, for the school governors —
Groves, A., and Sons (accepted)... £695 0 0

BURN NAZE.—For the erection of a school at Burn Naze, for the Lancashire Education Committee —
Walton, D., & Co., Cheveleys and Pendleton (accepted) £2,913 0 0
(Using Burlington blue slates.)

CARDIFF.—For the erection of a technical institute, Cathays Park (re-tendering), for the education committee. Messrs. I. Jones and P. Thomas, 18, St. Mary-street, Cardiff, architects. Quantities by the architects:

Minter, F. G., Putney, S.W. ...	£47,742	0	0
Thomas, W., and Co., Cardiff ...	46,707	15	½
Long, J., and Sons, Bath	46,632	0	0
Roberts, S., Ltd., Plymouth ...	44,835	0	0
Davies, D., and Sons, Cardiff ...	44,317	0	0
Turner, E., and Sons, Cardiff* ...	43,859	0	0

* Accepted.

Cold Harbour, Harpenden.—For the enlargement of the mission room and Sunday-school at Cold Harbour:—
Jarvis and Co. (accepted) £194 0 0

Crewe.—For painting the exterior and interior of the municipal buildings, for the town council:—
Fletcher & Sons, Crewe (accepted) £249 18 10
(Highest tender, £375 18s. 8d.)

Durham.—For the erection of workman's dwellings in Providence-row, for the city council:—
Beeves and Clarke (accepted) ... £1,122 8 6

Enfield.—For the supply of an escape staircase at Enfield workhouse, Edmonton Guardians:—
Newby and Sons, Southgate ... £163 0 0
(Accepted.)

Exeter.—For extension of West of England Blind Institution. Mr. J. Jerman, F.R.I.B.A., 1, Bedford-circus, Exeter, architect:—

Bathrooms, sick wards, &c.:—

Soper and Ayers	£1,217 14 10
Hooper, T.	1,190 0 0
Coles, W. G.	1,169 0 0
Stile and Son	1,151 0 0
Herbert, G.	1,139 0 0
Smale and Son	1,131 0 0
Lea, E. C.	1,108 0 0
Eveleigh, A. E.	1,100 17 0
Woodman and Son	1,100 10 0
Brealy, W.	1,090 0 0
Setter, G., and Son	1,050 0 0

Extension to school buildings:—

Smale and Son	1,071 0 0
Hooper, T.	1,070 10 0
Herbert, G.	1,070 0 0
Soper and Ayers	1,068 0 0
Stile and Son	1,059 0 0
Eveleigh, A. E.	1,015 0 0
Woodman and Son	1,000 10 0
Brealy, W.	995 0 0
Coles, W. G.	979 0 0
Lea, E. C.	957 10 8
Setter and Son	940 0 0

All of Exeter.

Farnworth.—For the erection of fire station for the urban district council. Mr. A. Whittle, 2, Norris-street, Farnworth, architect. Quantities by the architect:—
Coope, J., H., Queen-street,
Farnworth (accepted) £2,375 0 0

Gloucestershire. — For painting, colouring, and repairs required at the undermentioned council schools, for the Gloucestershire Education Committee. Mr. R. S. Philip, County Education Officer, Shire Hall, Gloucester, architect. Accepted tenders:—
East Dean—Cinderford Higher Elementary:—
Parry, C., Cinderford £39 11 6
East Dean—Ruardean Hill:—
Hayward, J. W., Cinderford ... 8 7 6
East Dean—St. Whites:—
Jones, C., and Co., Gloucester ... 86 13 6
Rodborough:—
Sutton, W., and Sons, Stroud ... 9 9 6
Rodborough—Butter Row:—
Baxter, W., and Sons, Stroud ... 14 19 0
Rodborough—Kingscourt:—
Sutton, W., and Sons, Stroud ... 25 9 0
Stroud—Castle Street, Infants:—
Baxter, W., and Sons, Stroud ... 26 18 0
West Dean—Bream:—
Whight, F. N., Lydney 21 19 0
West Dean—Parkend:—
Jones, C., and Co., Gloucester ... 52 8 6
West Dean—Pillowell:—
Hayward, J. W., Cinderford ... 100 0 0
Whaddon:—
Harvey, Sons, and Co., Gloucester 18 10 8
(Total, £404 6s. 2d.)

Hammersmith.—For structural work at 67-69, King-street, Hammersmith, W., for Mr. W. Orton. Messrs. T. Jay Evans and Son, M.S.A., 34-35, High Holborn, W.C., architects and surveyors:—
Lowe, W., Barnes, S.W. £132 0 0

Hammersmith.—For structural work at 157, King-street, Hammersmith, W., for Messrs. W. Phillips and Co. Messrs. T. Jay Evans and Son, M.S.A., 34-35, High Holborn, W.C., architects and surveyors:—
Lyne and Sons, Clapham £250 0 0
Jones Bros., Ltd., Tooting* ... 185 0 0
Lowe, W., Barnes, S.W 180 0 0
* Accepted.

Hammersmith. — For mahogany shopfront at 157, King-street, Hammersmith, W., for Messrs. W. Phillips and Co. Messrs. T. Jay Evans and Son., M.S.A., 34-35, High Holborn, W.C., architects and surveyors:—
Glover, J., Clerkenwell, E.C. ... £185 0 0
Lowe, W. Barnes, S.W. 170 0 0
Lyne and Sons, Clapham, S.W. ... 142 0 0
Jones Bros., Ltd., Tooting* ... 135 0 0
Accepted.

Hammersmith, W.—For erecting metal shopfronts at 67-69, King-street, Hammersmith, W., for Mr. W. Orton. Messrs. T. Jay Evans and Son, M.S.A., 34-35, High Holborn, W.C., architects and surveyors:—
Haskins, S., and Bros. £805 0 0

Harlesden, N.W.—For structural work at 49-51, High-street, Harlesden, N.W., for Messrs. W. Lewis and Co. Messrs. T. Jay Evans and Son, M.S.A., 34-35, High Holborn, W.C., architects and surveyors:—
Lowe, W., Barnes £295 0 0
Lyne and Sons, Clapham* ... 286 0 0
* Accepted.

Hornchurch.—For erecting eighteen cottages, Abbs Cross-road, for the Romford Rural District Council. Mr. W. J. Grant, Victoria Chambers, Romford, surveyor —

Wilmott, F., Ilford	£3,794 0 0
Bruty and Son	3,669 0 0
Sibthorp, A. G., and H.	3,330 0 0
Catherwood, F. C., and A. G. ...	3,222 0 0
Moss, T. W. (accepted)	3,208 10 0

Surveyor's estimate, £3,259.
Rest of Hornchurch.

Harlesden, N.W.—For erecting metal shop front at 49-51, High-street, Harlesden, N.W., for Messrs. W. Lewis and Co. Messrs. T. Jay Evans and Son, M.S.A., 34-35, High Holborn, W.C., architects and surveyors:—
Haskins, S., and Bros., Ltd. ... £840 0 0

Ledbury.—For the installation of a new hot-water system at the workhouse, for the board of guardians. Mr. Gurney, surveyor:—
Sparkes and Houlton, Ltd., Malvern (accepted).

Limehouse, E.—For the erection of electricity generating station, for the Stepney Borough Council. Designed by M. H. Jameson, A.M.I.C.E., Municipal Offices, Whitechapel, E., borough engineer:—

Muirhead, W., and Co., Ltd., Parliament-street, S.W. ...	£41,633 0 0
Goddard, Massey, and Warner, Ltd., Nottingham	41,530 13 4
Findlay, A., and Co., Ltd., Victoria-street, S.W.	33,407 11 9
Wood, E., and Co., Ltd., Cannon-street, E.C.	33,020 0 0
Kirk and Randall, Ltd., Woolwich	31,831 2 11
Power's and Deane Ransome's, Ltd., Cubitt Town, E.	31,778 11 2
Keay, E. C. and J., Ltd., Victoria-street, S.W.	31,699 0 0
Drew-Bear, Perks, and Co., Ltd., 110, Cannon-street, E.C.* ...	29,314 10 3

* Accepted.

London, E.C.—For structural work at Nos. 175-179a, Old-street, and 88, Bath-street, City, E.C., for Messrs. E. Bridgland and Co. Messrs. T. Jay Evans and Son, M.S.A., 34-35, High Holborn, W.C., architects and surveyors:—
Jones Bros., Ltd., Tooting £286 0 0

London, W.C. — For structural alterations and decorative work at the Welsh Calvinistic Methodist Chapel, Charing Cross-road, W.C. Messrs. T. Jay Evans and Son, M.S.A., 35-35, High Holborn, W.C., architects and surveyors:—

Lyne and Sons, Clapham	£1,270 0 0
Parker and Sons, Peckham ...	1,199 0 0
Lowe, W., Barnes	897 0 0
Griggs and Son, Cubitt Town* ...	727 0 0

* Accepted.

North Preston, Kent.—For repairs and painting to council school buildings, for the Kent County Council:—
Fuller and Son £270 0 0
Whiting Bros.... ... ... 250 0 0
Johnson and Son 228 7 6

Old Bell, Harpenden. — For the erection of a mission room at Old Bell, between Harpenden and Kinsbourne Green. Mr. Stanley Salisbury, architect:—
Jarvis and Co. (accepted) £385 0 0

Orleton.—For building a new classroom at the Church Schools:—
Turford, Ludlow £335 0 0
Poston, Orleton (accepted) ... 312 0 0
Brazier, Little Hereford 310 0 0

Rockferry.—For the decorating and repairing of the three chapels at the Bebington Cemetery, Rockferry. Mr. Harold C. Davies, F.S.I., 167, Old Chester-road, Birkenhead, surveyor to the board:—

Hughes Brothers, Newferry ...	£167 3 0
Gregory, G., Birkenhead	146 19 0
Gardner and Son, Liverpool ...	98 8 9
Manley, H., Higher Tranmere ...	96 0 0
Taylor Bros., Liverpool	95 10 0
Bradshaw, E., Newferry* ...	94 10 0
Irvine, A., Oxton	91 17 0
Inglefield & Harrison, Tranmere ...	89 10 0
Ledsom, J., Rockferry	69 16 5

* Accepted.

Note.—The schedule price per sup yard for repairing cement walls brought the accepted tender the lowest.

Shillelagh.—For erecting twenty-three cottages, for the rural district council. Accepted tenders:—
Two cottages and fences:—
Doyle, P., Parkbridge £328 0 0
Brennan, D., Carnew 328 0 0
One cottage, exclusive of fence:—
Connolly, P., Killabeg 160 0 0

Stoke Newington.—For oak shopfront at 149, High-street, Stoke Newington, N., for Mr. T. B. Stephens. Messrs. T. Jay Evans and Son, M.S.A., 34-35, High Holborn, W.C., architects and surveyors:—

Haskins, S., and Bros., Ltd. ...	£447 0 0
Pollard and Co., Clerkenwell ...	428 15 0
Courtney, Pope, and Co.	383 0 0
Stanley Jones and Co. (accepted)	380 0 0

Stoke Newington.—For oak interior fittings at 149, High-street, Stoke Newington, N., for Mr. T. B. Stephens. Messrs. T. Jay Evans and Son, M.S.A., 34-35, High Holborn, W.C., architects and surveyors:—

Haskins, S., and Bros., Ltd. ...	£739 0 0
Pollard and Co., Clerkenwell ..	469 0 0
Stanley Jones and Co.	451 0 0
Courtney, Pope, & Co. (accepted)	433 0 0

Waddingham. — For the rebuilding of Blackdyke Bridge, Waddingham, for the Caistor Rural District Council:—
Charles, F. and Son, Waddingham £151 10 0
(Accepted.)

Woodmancote.—For sinking a borehole at Woodmancote, for the Westbourne Rural District Council. Mr. J. Saunders, A.M.I.C.E., 86, Appleton Gate, Newark, engineer:—

Batchelor, R. D., London ...	£458 11 5
Potter, A., and Co., London ...	372 0 0
Brown, W., and Son, Tottenham	369 14 8
New England Boring Co., Peterborough	366 0 5
Duke & Ockendon, Littlehampton*	269 0 0
Cheeld and Co., Cheam	257 2 2
Smithe, F., and Son, Grimsby ...	256 12 1
Whadley and Co., Pewsey	234 16 5
Brown, H., and Co., Bristol ...	221 4 8

Accepted.

TO CORRESPONDENTS

It is particularly requested that all drawings and all communications respecting illustrations or literary matter, books for review, etc., should be addressed to the EDITOR of the Building News, Effingham House, 1, Arundel-street, Strand, W.C., and not to members of the staff by name. Delay is not infrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

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Veritas. Yes.

S. H. L. Please send.

Romeo. Cannot discuss personal grievances.

Vidi.—The clause seems clear enough to us, and certainly bars you.

Entanglement.—Your story is a plausible one: but we do not believe a word of it.

Hydraulic.—We cannot prepare estimates. If bonâ-fide business is meant, any of the firms in our "Directory" pages will respond.

Inquirer.—No general rule can be fixed. You must always take into consideration the fact that an architect's business is mostly more of a personal nature than many others, and in average cases ten years' purchase would be a high figure.

August 22, 1913. Volume CV.—No. 3059.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House, Strand, W.C.

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OUR ILLUSTRATIONS.

"Daily Telegraph" Building, Sydney, N.S.W. View, elevations, section, and plans. Messrs. Robert A. and Mark, Architect.
Pulpit, All Hallows Church, Southwark. Messrs. Heathcote and Sons, Architects.
Inner Hall, Ellenborough House, Roehampton-lane, S.W. Two views. Mr. P. Lee-Joynt, Holland Architect.
Theatre and Ball Room, Sinclair's, Parkside. General view and detail of entrance door. Mr. R. Hermon Crook, Architect.
Regent Picture Hall, Bradford. View and plan. Mr. H. W. Rogerson, Architect.
Reinforced Concrete Buildings.
Kirby Hall, Northamptonshire.

PLAIN BUILDING.

Plain building holds the imagination, and compels attention, much as does plain speaking. Whether it be plain column, simple arch, or bare wall, we are conscious of a commanding presence. The power of all primitive work dwells largely in its simplicity. The origin of this power is perhaps to be discerned in the fact that every isolated act is necessarily more effective—more telling—than where repetition and addition involve issues and complicate effects. If we throw five rings of plain stock bricks across a void, the arch as such, its outline, and its shade and shadow, stand out as one object. If we recess the arch-rings in orders, we necessarily do something that, in a sense, destroys the splendid isolation of the bald brick ring; and, yet again, if we cut off the voussoir arris, we have arch as such, order as something else, and chamfering as a third entity—three things claiming our regard, as against the one simple object—barren it may be, but of a majestic grandeur that cannot be enhanced by added work. Each effort to gain elaboration may insure more grace, more beauty; but the amazing majesty of the bare, void-spanning construction loses in power to impress.

The basic cause of these effects is well worthy of study by the designer. It may perhaps be put diagrammatically. If, on a plain sheet of paper we make one powerful pen-stroke, or drop one blot of ink, it must result that anything added on this plain surface, while it may add interest, must needs detract from the effect of the one stroke or blot in riveting the attention. The bare and massive railway arch, a mere expanse of sombre shadow, must, on this principle, more forcibly attract our attention than the arch of the elegant, moulded, and enriched cathedral nave. It is the simplicity that holds; it may not be for long, and weariness may quickly supervene; but were the railway arch and the cathedral bay contrasted, side by side, our first attention, momentarily, perhaps, would be attracted by the plain building.

There subsequently, however, arises another question. At first sight it clashes with our idea. If we wish to drive home a nail, or close a rivet, we do not seek to accomplish this at one blow. Each additional stroke furthers the end sought and the ultimate effect. Two principles need to be correlated. On the one hand, we see that the plain, simple act "tells" with an effectiveness that is inversely as the work done; on the other, we find that the effect of a ton weight is the summation of 2,240lb. Each blow upon the nail-head vastly increases the value of the preceding work, each moulding added to an arch, and each enrichment, added to the mould, renders the work more effective. The monolith which we hew from the quarry and stand on end, rugged and massive, the plain obelisk, even bare hole-in-the-wall "architecture" impresses us as the measure of things not done. The cathedral front, mounting tier on tier, arch above arch, pillar upon pillar, budding below and blossoming in crowning finial and crocketed gable, is something enhanced by virtue of sum of added labour and endeavour—is to be measured only by the height and depth of things accomplished. We see the grandeur of the monoliths on Salisbury Plain, and we know that any attempt at ornamental elaboration would destroy the effect of which we are conscious; and all the while we see that, drawing many lines on a plain string-course, may originate design which, if carried into execution, converts the bare string into a beautiful cornice; yet—and the consideration seems to assist our investigation—if we allow this stringcourse to have equal projection with the cornice, no doubt but that, as seen in full sunlight, this dark band of shadowed stone will attract our attention long before we take special note of the grace and beauty of cyma and corona, of acanthus scroll, and repeated egg-and-tongue.

There are here, in these apparently antagonistic principles of design, some very important considerations for the architect. We may decide, perhaps, that we do not always seek that which we, by habit, term "majestic simplicity," which may, in unskilful hands, degenerate into rudeness. We call all early work "rude." The employment of the term may be significant. Powerful as they may be in sunlight and shadow, a boorish rudeness may reside in the ill-proportioned, bare arches of the railroad engineer. A boor, by some brutally frank remark, may momentarily attract attention, eclipsing for a time the grace and elegant diction of the earnest and practised speaker; but the latter finally wins the heart. Where the rude exclamation startles us like a gunshot, the refined, accomplished orator draws us gradually to him; and, therefore, by analogy, we may decide that, startling and interesting, in its way, as is Stonehenge, the gradual unfolding of interest, as in Santa Sophia, is one of the chiefest charms of beautiful architecture.

Let us attempt to co-ordinate these principles. When we wonder at, and are interested in, rude stone monuments, and, at the same time, admire elaborate building, we suggest that all strictly severe design requires softening—needs to be rendered graceful and gracious; that, we might say, the iron hand, in design, should be always in the velvet glove, unless some special reason demands otherwise. And, if we accept this much as reasonable, we may claim that simplicity in mass-form is a means whereby we may instil some of the dignity and severity of primitive architecture into that which is suited to a later day. To produce light, fanciful main forms in building is a sin against all accepted canons so far as these may be elucidated by study of universally-admired and generally-accepted precedent. Therefore, if we have an outline not more elaborate than a trued and squared Druidic monolith, something of the power and effectiveness of such will reside in design suited to the wants and aspirations of to-day. In this light, the dominating strength of the bare railway arch may reside in every ornamental arch struck as a circle. The rudeness is softened by the additions, and, as a general law, what we lose in "majestic simplicity" we gain in elegance and grace. Let us then seek, at all costs to preserve dignity and simplicity in main outlines. Thereby, our more fanciful minor additions are necessarily, by means of mutual enhancement or "contrast," rendered the more varied and interesting. All building, even that by design sought to be made highly rich and ornamental, should be plain in mass-form. Again, the bald engineers' arch offends, not perhaps per se, but by reason of the ill proportions of the secondary attributes. The same idea in elegant proportions may be graceful, since, in architecture, as in all things, it is not so much the thing done that counts, but the manner how.

A more logical explanation of the enthraldom we so often fall under in viewing quite plain building, is its expressiveness of construction; and where, as in Westminster Cathedral, this construction, while in beautiful and studied proportions, is artlessly natural—that is, was not intended for show or direct effect—there is indeed an inherent power in building in simple mass that may well entrance us all. Plain building, with intent to please, with construction frankly revealed in all its parts, necessarily, also, ranks high in architectural merit, and may, indeed, be considered to be of the essence of architecture, since architecture, if anything, is the poetry of construction. And, again, it may be that plain building, being innocent of elaborate device, cannot cause offence from the presence of specious ornament. It may, at times, not wholly please, but it can never offend. This is a great point; for, not what is left undone offends, but that which is actually committed, revolting the eye, and nauseating our sense of that which is decent and fit. Offence in plain building, if existent, is of a negative order.

Of our several considerations, discounting the effect of power inherent for reasons before suggested, we would assign the merit of plain building to its truth and its self-evident construction. This is something always doubly refreshing at the present day, when real construction is so often hidden, and a false one superimposed. All highly-elaborated architecture seems to lose something by reason of the less evident method of building; and that this is so, we have the more reason to conclude, since all styles, developing into elaboration upon elaboration, have at last lost their hold upon true construction have "run to seed," lost expressiveness, become mere caskets of ornament so-called; and no doubt it is for this reason that the old masons, erecting in hamlet and village, blundering copies of the old minsters and cathedrals, yet entrance us, where we may look coldly on the prototype. For, in the one case, the construction is homely, frank, and evident; in the other it has become overlaid and hidden by the growth and multiplication of fanciful Gothic details.



Fig. 1.

REINFORCED CONCRETE BUILDINGS.

By Wm. G. Shipwright, Licentiate R.I.B.A., M.C.I., Chartered Surveyor (by Exam.)

MESSRS. HUGHES' WAREHOUSE, MANCHESTER.

Messrs. Chas. Clegg and Sons, Architects.

This warehouse, which has just been completed for Messrs. Alfred Hughes and Co., Ltd., stands on the site of the structure which was destroyed by fire in June, 1911. The new building, shown in the photograph (Fig. 1) has brick enclosure walls, the piers of which are to some extent employed to assist in carrying the floor loads. That these loads are considerable will be appreciated from the fact that the building contains a basement and seven stories.

The reinforced work embodies some substantial constructions and interesting detail. The plan of the reinforced work on the ground floor is shown on the basement plan (Fig. 2), and this arrangement of beams and columns has been followed with slight variation on all the floors. From this plan it will be seen that a series of reinforced columns are disposed throughout the interior of the building, whilst smaller columns are placed in the area of the brick piers in the external walls. These piers support the load from some of the beams, the small columns being employed to support part and reduce the load on the brickwork to the necessary margin of safety.

It should be noted in all such cases when a series of loads are taken up in a vertical line, and divided between two forms of support, such as in this case, a brick pier and reinforced columns. Definite loads should be allocated to each of the supporting agents, which should be kept entirely separated from each other in the construction by employing a straight joint or other effective means of separation. The neglect of this precaution where materials of varying elasticity are employed will probably result in the member containing the more rigid elements ultimately acquiring the whole of load, with detrimental consequences to the building.

The beams are disposed somewhat on the usual lines of main and subsidiary beams. A typical example of beams used is that shown in detail at Fig. 3. This beam is on the fourth floor in the position marked "A" on the plan, Fig. 2. It runs between the external wall with two intermediate column supports and effective spans varying from 14ft. to 17ft. 7½in. The beam is 13in. deep 9in. wide, with two stout tension rods lapped over the columns, and similar continuation tension rods in upper part above the columns (Fig. 4) is an enlarged section of the beam showing the linked hangers. Fig. 5 is a detail of one of the cross beams running into the beam "A" (Fig. 3). A typical piece of construction generally applicable to the whole of these beams are the bent and linked rods at the end, and a special detail (Fig. 6) is shown of the joint at "B," which occurs in the soffit of the arch. It will be seen that the whole of this piece of construction is tied by a system of three bent rods, a method at once simple and effective.

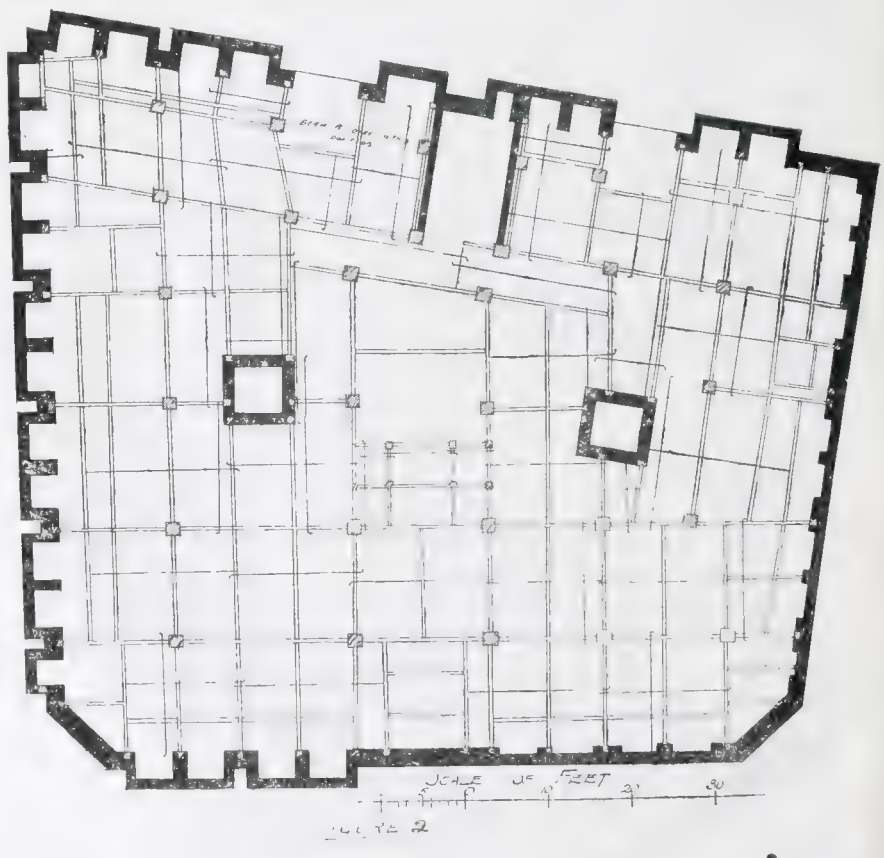
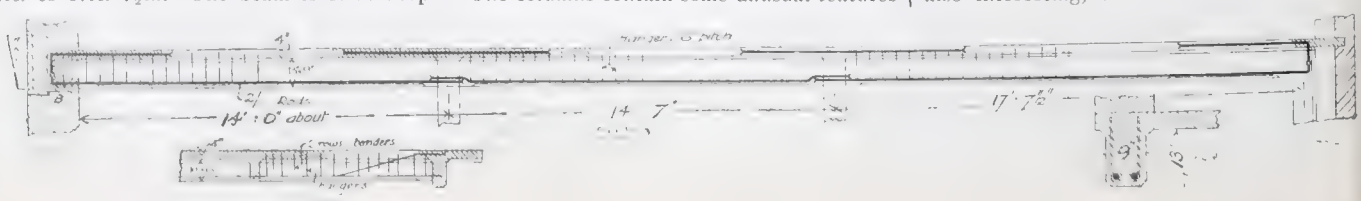


Fig. 2.

The columns contain some unusual features of construction. One which particularly merits observation is the detail shown in Figs. 7, 8, 9, and 10. It will be seen from the drawings that the ordinary square reinforced columns increase in area to 22in. square on the ground floor, and is converted into a composite construction in the basement embodying a thick metal core inserted in the centre, with a small annular space filled with fine concrete, and a square concrete casing reinforced with four rods at the angles. The manner in which the rods are lapped and forked at the intersection, and the continuity rods shown at "C," in Fig. 7.

The foundation for these columns is also interesting, as it embodies the brick



foundations of the original building, around which is constructed a concrete block, with a reinforcement of rods laid in the form of a frame. A reinforced template 9in. thick and 25 square feet in area, reinforced with a close lattice of rods, distributes the load from the shaft over a sufficient area of the re-

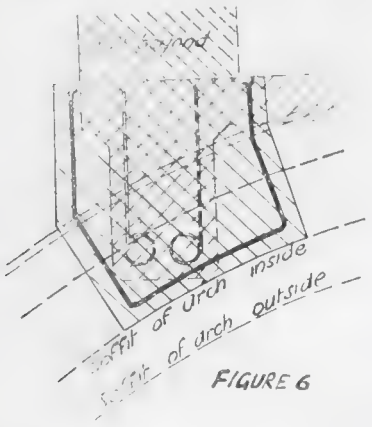
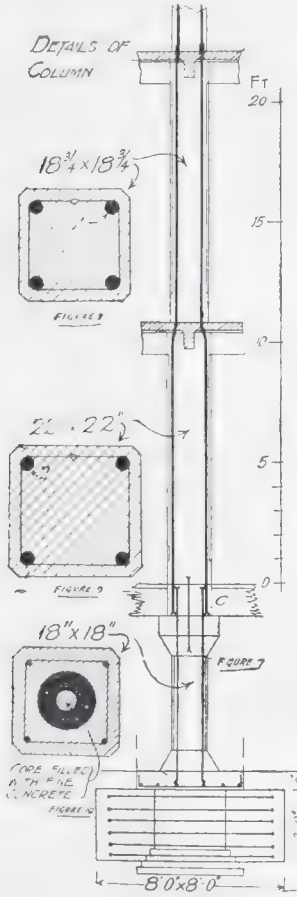


FIGURE 6

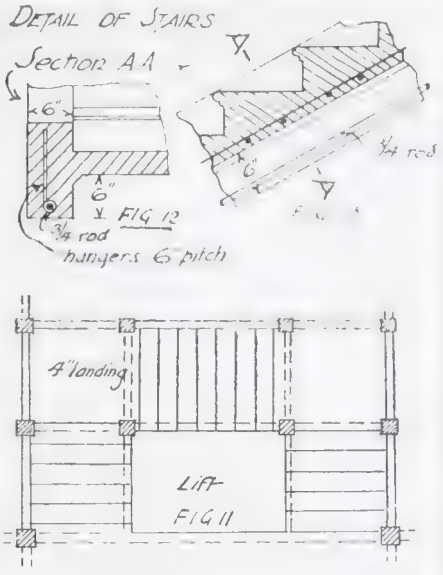
inforced foundation, whilst the area of the foundation on the substrata is 64 superficial feet.

Other details calling for special comment are the staircase and roof. A plan of the former is shown in Fig. 11, from which it will be seen that the stairway surrounds a square lift-well. Figs. 12 and 13 show the construction of the flights, with 6in. projecting strings. Each tread has two rods in the reinforcement, whilst either one or two



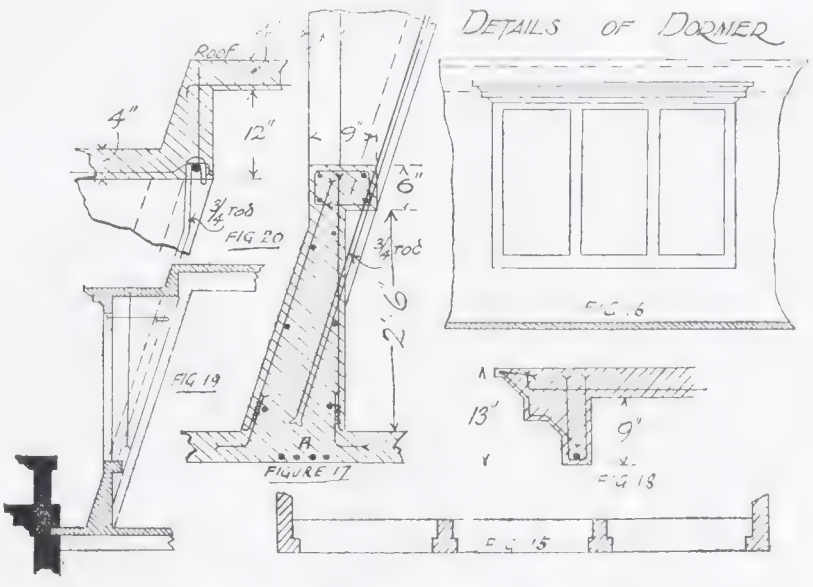
longitudinal rods are provided in the strings, according to the position. Fig. 14 shows the linking-in arrangements for these rods, and also the manner in which some of the flights are suspended from the floors. The suspension-rods are bent at the upper ends into the floors and carried in the form of loops below the lower rods of the strings, forming a simple and ingenious piece of construction.

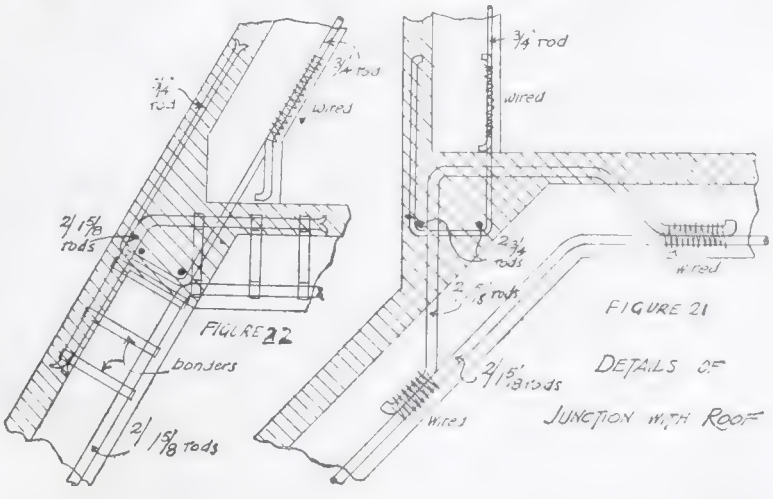
Some of the roof construction is illustrated in Figs. 15 to 22. Figs. 15 and 16 are a general plan and elevation of the dormers. Fig. 17 shows the manner in which the 9in.



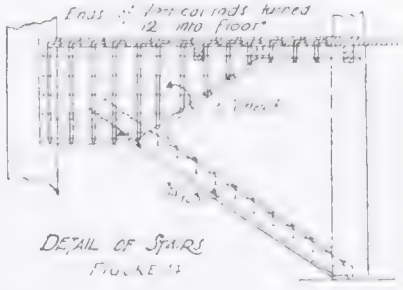
by 6in. concrete sill is linked up with the floor below. Four rods linked together constitute the reinforcement of the sill. The slope is constructed upon an open lattice of rods well tied into the floor, and the whole is supported upon four round rods, shown at "A," Fig. 17. The head (Fig. 20) is provided with one stout rod, on to which the rods of the kerb are linked.

The details, Figs. 21 and 22, illustrate the





junction of the floor-beams and roof-principals, the former being the intersection at the top story, half-way up the slope, and the latter occurring at the story below, at the base of the slope. A very sound and well-tied piece of construction is secured in these joints, by the employment of cranked rods. The building is one of the highest warehouses erected in England in reinforced concrete, which was designed by Mr. E. P. Wells, consulting engineer to Messrs. Stuart



Granolithic Co., Ltd., the contractors, who are to be congratulated on the execution of a satisfactory piece of work, embodying many successful innovations in detail from the stereotyped forms of construction.

PERMISSIBLE DILUTION OF SEWAGE.*

By George W. Fuller. M.Am.Soc.C.E.

There has really been a great deal of information secured in America with regard to the dilution method of sewage-disposal. This is particularly true with regard to the Chicago drainage canal, the various streams of Massachusetts which have been reported upon by the Massachusetts State Board of Health, the general scheme of sewage disposal for the metropolitan district tributary to New York harbour, and more recently the

* Journal of the Western Society of Engineers.

various investigations which have been undertaken by numerous large cities, such as Philadelphia, Pittsburgh, Cleveland, Milwaukee.

HYGIENIC ASPECTS OF SEWAGE-DISPOSAL.

The sterilisation of sewage discharged into tidal waters in the general vicinity of shell fish layings has within the last few years proved an economical and, in the hands of careful operators, an efficient means of dealing with one of the important phases of the hygienic side of this question. While there are only a few sewage sterilisation plants now in operation, there have been a dozen or more recommended for adoption, and it seems unnecessary here to say more on this question in view of the thorough discussion which it has received from Professor Phelps in Water Supply and Irrigation Paper No. 229 of the U.S. Geological Survey. The author is of the opinion that hypochlorite of lime, or some similar sterilising agent, has a great future before it in the treatment of sewage at places where shellfish are found within certain distances.

In this connection it is to be borne in mind that untreated surface water supplies as a rule do not afford a thoroughly safe drinking water. The reason of this is that there are too many opportunities for pollution from the soil wash and indirect sewage of small villages and hamlets, and the infection of the water from the casual huntsman, fisherman, or those who for pleasure or business traverse the watershed. There are, of course, exceptions to this rule, but they are growing fewer and fewer. This is well shown in Europe where, since the great cholera epidemic of Hamburg some years ago, it is an unwritten but practically effective law that all surface water supplies shall be filtered.

Many large cities in this country are provided with combined sewers, the entire flow of which at times of storms can scarcely be purified completely. It is true that hypochlorite of lime has proved to be of much help in securing an improved quality of drinking water at many places, but the fact remains that as a general proposition the surface water supplies in this country should be filtered in order to make them thoroughly first-class in point of hygienic character.

While it is believed that the purification of public water supplies in this country is a subject that must stand on its own feet first and foremost, it is undoubtedly true that there are some exceptions to this rule, and that sewage purification sometimes should be provided to aid the neighbouring water supply. The medical man feels that everything that can be done to destroy disease germs should be done, and is inclined to say, Purify all sewage and also purify all water. This brings up the question of how much practical significance of how a certain expenditure of money can be best applied in the interests of the public health.

Water purification should come first so far as the hygienic side of the matter is concerned, and sewage purification, or perhaps sewage treatment by sterilisation, should come into play in order to make sure that water filters are not overloaded if there is likelihood of inferior quality of filtered water being furnished the consumers.

Double filtration of water supplies and the judicious use of sterilising arrangements, and the advantageous employment of coagulating processes can all be brought to the aid of the water-purification plant. Even with all of these precautions as to the water supply, there are times when purification of the sewage of a neighbouring community, or of the community whose water supply is under consideration, should be carefully provided for We shall say no more on this question of the hygienic aspects of sewage disposal, as it is hoped that the viewpoint has been made plain, that the dilution method of sewage-disposal is not barred from this line under ordinary circumstances. The limitations in the dilution method are really to be found in relation to the nuisance question as noted by sense and smell, and this is the question that we shall now proceed to discuss at length.

NUISANCES AS RELATED TO SEWAGE DILUTION.

Sewage dilution is an important, rational, and proper method of disposal of sewage if it is properly applied and is not abused. Disregarding the question of disease germs, which we have already considered, the dilution method of disposal is a proper one when, by dispersion in water, the impurities of the sewage are consumed by bacteria and larger forms of plant and animal life, or otherwise disposed of so that no nuisance results.

The dilution method is by far the most prevalent one now in use in this country. As knowledge becomes more precise as to its advantages and disadvantages, the conclusion becomes more clear that the method has not been applied in a satisfactory way in a large number of instances. On the other hand, there seems to be no good reason why advantage should not be taken of this method within reasonable limits. Between the so-called complete purification of the sewage and the dilution method, there are intermediate procedures which allow advantage in point of economy to be taken of the dilution methods, and at the same time the nuisances to sight and smell, which have been so common at various places, may be effectively prevented.

Nuisances attending the sewage-dilution method may be due to the following:—

1. Floating solids; 2. Settling solids; 3. Non-settling putrescible organic matters.

These three constituents, or groups of constituents, in sewage explain most of the difficulties that are encountered to-day with the sewage-dilution method. All can recall instances where orange-peel and other household wastes float in bodies of water around sewer outlets. Deposits of "sewage mud" or sludge are seen near the outlets, with a likelihood of their decomposing and producing foul odours, particularly at times of low stream flow. There is also the condition where there is inadequate dilution of the sewage as it enters the stream, and where the entire body of water turns black owing to anaerobic decomposition or so-called septic action.

Clean Rivers.—There is undoubtedly a well-defined movement on foot to free American rivers of small and moderate size of solid organic matter and filth coming from the flow of the sewers. This movement is a proper one, and, when combined with adequate purification of water drawn from rivers receiving such sewage, the whole question of sewage-disposal by dilution assumes a more reasonable and favourable aspect than hitherto. Furthermore, it does not involve communities in the expense called for by sewage-filtration. It modifies, however, the limits that are permissible as to sewage-dilution, an dcalls for a recasting of the engineer's views and calculations upon the question. This paper will outline briefly some of the features involved in the permissible limits of sewage-dilution in connection with "clean rivers."

Screens.—In America there has not been as much progress as in Europe in the use of screens or other arrangements by which floating matters, objectionable to the sight, are removed from sewage as it enters the stream. In Germany, so-called fine screens, with an opening of 0.4in. or less, have had many warm advocates. The fine screens have not the standing to-day that they had a few years ago, in the opinion of many engineers, owing to the success attending the sedimentation devices as a cheaper and simpler means of keeping back floating matters, and at the same time of removing the coarse, heavy solids that subside. In America fine screens have been regarded with questionable favour, owing to the cost of their maintenance. Without discussing the relative merits of different devices, it may be stated that without question floating matters should be removed from sewage before the latter is disposed of by dilution in an adequate body of water.

Sedimentation Tanks.—An examination of the Massachusetts State Board of Health reports, and other American data on pollution of streams, quickly shows that the stranding of solids in the vicinity of sewer outlets has in the past proved one of the drawbacks to the satisfactory use of the dilution method. This is particularly true at times of low river stages, when banks of "sewage mud" or sewage sludge are exposed to "putrefaction" with attendant bad odours. Some 60 per cent. of the total suspended solids in the ordinary sewage are responsive to subsidence, and unless the sewage is discharged into a river with uniformly high velocities, these solids are bound to strand or settle. The removal of these "settling solids" is an important feature in the establishment of "clean rivers" in this country, and, if a few of the larger streams are eliminated the sedimentation of sewage is going to come into general use as a preliminary step in the modern arrangements for sewage dilution.

In earlier days difficulties in disposing of the sewage sludge or solid matters deposited in tanks were the cause of the slow adoption of this important improvement. It is true that chemical precipitation and sludge presses provided a solution of the problem, but at an expense that proved discouraging to many communities, and such that in Europe the cities near the seacoast were led to "barging" the sludge to sea. It is believed that septicisation, particularly as embodied in tanks of the two-story type, will allow this matter in the future to be handled far more satisfactorily than in the past.

UNIMPORTANCE OF ORGANIC MATTER IN SETTLED SEWAGE.

If a sewage has been clarified to such an extent that there will be no deposits in the stream-bed at or near the sewer outlet, and if the disease germs are killed, there then remains to be considered the sanitary significance of organic matter coming from the settled sewage, and diluted with large volumes of river water. In most cases where the sewage is diluted so that there are formed no offensive odours due to decomposition, and where the sewage has undergone sterilisation, it does not seem likely to us that it is necessary, in the interests of the public health, to go to the expense in most cases of removing the dead organic matter of the settled sewage.

It is intimated by some that the germ theory of disease, and the specific infection of water through disease germs, does not necessarily tell the whole story as to the hygienic disadvantages of sewage-polluted waterways. On the other hand, the extensive investigations of the United States National Board of Health, as stated in their report for 1882, page 201, indicate that with sewage-polluted waters, it would be necessary to drink half a gallon at once of the waters under test in order to get as much nitrogen and carbon as is contained in a single medicinal dose of strychnine, which is stated to be one of the most energetic of recognised poisons.

A similar view as to the harmlessness of organic matter per se was stated by the late Dr. T. M. Drown, in the Special Report of the Massachusetts State Board of Health, 1890, Part I. page 537.

More recently a similar view has been given by Dr. A. C. Houston, now chief water examiner of the Metropolitan Water Board of London, in the Second Report of the Royal Commission on Sewage-Disposal, page 27:

"Organic matter per se in water is seemingly harmless; it is the bacteria likely to be associated with the organic matter that constitute the element of danger. Only bacterioscopic analysis can hope to reveal the kinds of bacteria in an effluent which are of a sort liable to be related to disease. Chemistry is quite powerless in this respect; and, indeed, all chemical standards of potability are apparently based on an assumed relationship, which may or may not exist, between the amount of organic matter and the number and kinds of the associated bacteria. Typhoid fever stools, whether sterilised and innocuous, or unsterilised and highly dangerous, would yield to chemical testing practically the same results as regards the nature and amount of organic matter present."

Furthermore, where there is adequate dilution of settled and sterilised sewage in a river used for a water supply, it is not difficult, as already stated, to effect a substantial removal of organic matters in works well adapted for water purification and in-

volving coagulation, aeration, and sterilisation by powerful oxidising agents.

DEGREE OF DILUTION.

On the assumption that floating and settling solid matters are removed from the sewage, and that disease germs are killed, where necessary, by sterilising chemicals, the permissible limits for the dilution of sewage may be discussed. The limits should be such that there should be present at all times, and in all places, sufficient dissolved oxygen to prevent anaerobic or so-called putrefactive decomposition becoming established, and furthermore, that there should be a reasonable margin of dissolved oxygen to take care of fish life unless it should prove in some instances that the question of fish life is not of sufficient significance to justify consideration.

On the degree of dilution the first scientific data in this country were obtained in the early days of the consideration of the Chicago drainage canal, and it is from the technical staff of the Chicago Sanitary District that engineers have received their latest information bearing upon this important subject. A few years ago, and, in fact, until quite recently, all data as to the degree of dilution of sewage referred to crude sewage with its floating and settling solids. The Chicago drainage canal was established on the legal limit of 3 1-3cu.ft. of water per second to dilute the sewage of each 1,000 persons connected with the sewers. That limit was probably too low for the crude sewage of a city which has such a large proportion of manufacturing wastes in its sewage flow as is the case here in Chicago. For a city without manufacturing wastes it is probably a fair limit, although some data obtained from Massachusetts suggest that it might be wiser to provide a somewhat more liberal volume of water for dilution.

A dilution of 4cu.ft. per second per 1,000 population is as close a general figure for crude sewage as can now be obtained, although, undoubtedly, there are various local factors which influence the dilution, and may establish a range as wide as from 3cu.ft. to 7cu.ft.

As to the degree of dilution necessary for settled sewage, present evidence indicates that at least 2.5cu.ft. per second per 1,000 population should be provided for residential communities and where the diluting water is well supplied with atmospheric oxygen. For manufacturing cities, where the diluting water is moderately depleted in oxygen during the summer months, this dilution may perhaps have to be doubled, that is, increased to 5cu.ft. per second per 1,000 population.

There is no precise rule now available, and the above ranges establish as closely as can now be done the permissible limits in the dilution which properly should be applied to settled sewage, in preference to raw sewage, with floating and settling solids in it.

Dispersion. — Mixing. — One of the great drawbacks to the dilution method of sewage-dispoal as applied in earlier years, was then the tendency to conduct the sewage only to the margin of the stream, and perhaps only to the high-water shore line. This explains the nuisances that prevail in many American cities, where the stream-flow throughout the entire cross-section of the river is sufficient to provide reasonable results by the dilution method. Enough has been said to indicate that if dilution is to be advantageously used, it should be done under conditions where the sewage is so mixed with the stream-flow that the degree of dilution above mentioned will be secured at all points. Naturally, streams with comparatively high velocities allow better results to be obtained than those in which the velocity is reduced or checked entirely at times by mill ponds or other obstruction.

RESIDUAL OXYGEN.

This is a question upon which there are many divergent views. Until it is put on a more satisfactory basis than at present, it is hardly feasible to state the degree of permissible dilution more closely than given above. Colonel Black and Professor Phelps have advocated that a residual margin of 70 per cent. of dissolved oxygen should be provided for the waters of New York Bay. A more common opinion places this margin at 50 per cent. Messrs. Wisner and Pearse (of the Sanitary District of Chicago) have put this margin at 2.5c.c. of dissolved oxygen per litre, which is equal to about 20 per cent. of saturation of oxygen during winter months, and 30 per cent. for the summer temperatures. These gentlemen, however, have reference to fish life. The author's experience is that if stranded solids have been kept out of the stream there will be no occasion for difficulty as to anaerobic or putrefactive decomposition, provided there is some dissolved oxygen present in the stream at all times and at all places. One of the earliest and most important points established at the Lawrence Experiment Station was that a little oxygen, say 1 per cent. to 3 per cent. of that necessary for saturation, would allow oxidation and nitrification to take place as satisfactorily, or nearly so, as if the water were saturated with oxygen. There is no reason known to the writer for departing from the teachings of those early experiments at Lawrence, and he believes that estimates of 50 or 70 per cent. for the required residual of dissolved oxygen can be explained only by extraordinary allowances made for the consumption of oxygen by existing sewage sludge, or by more than liberal allowances of oxygen for major fish life. In fact, whatever margin is needed above a slight positive quantity at all times and places in the stream is, in his opinion, solely accountable for by the oxygen necessary for fish.

Fish Requirements.—Data are somewhat meagre as to the amount of dissolved atmospheric oxygen which is required in the streams to protect major fish life. The quantity no doubt varies with different species of fish and perhaps other local conditions. In the Lower Elbe, near Hamburg, it is stated that the margin of dissolved oxygen during the ordinary summer periods falls as low as 20 per cent., and the figure in the Lower Thames is understood to be about 30 per cent. At Hamburg there has been no serious complication as to fish life other than during the summer of 1911, when it is understood that for three or four weeks fish actually migrated from the vicinity of the city. This does not mean that there was any nuisance as to putrefactive odours. It fact, it is stated that none existed. It shows also another point, and that is that since the fish returned after a period of three or four weeks, it will be quite debatable whether once or twice in a generation it is necessary to prevent the migration of fish, if by such prevention there will be involved expenditures of vast sums of money for the more complete purification of the sewage.

It was told the author in Berlin last summer that an amount of residual dissolved oxygen, equal to 1c.c. per litre, was considered sufficient under ordinary circumstances in the immediate vicinity of a sewer outlet, although 1.5c.c. were preferable.

Fungus Growth.—Professor Thumm, of Berlin, has stated that in waters containing a great abundance of oxygen it is possible that offensive odours might result through the growth of certain fungi—namely, Leptomitus, Sphærotilus, and Cladothrix. The staff of the Royal Prussian Testing Station have observed that these growths are said to be characteristic of streams receiving a lot of industrial wastes, such as come from wood-pulp mills. The growths seem to be favoured by the presence of much putrescible organic matter, ample dissolved oxygen, and a high velocity of stream flow. These comments are not in harmony with the author's recollections of the life-history of these organisms, unless it be that their growth is fostered in certain deposits which are dislodged under certain conditions. The question is an interesting one, and it is the only suggestion that the writer has heard of, which limits the permissible dilution of sewage in other than by the dissolved oxygen, in cases where disease germs are destroyed or may be properly ignored. This is a question which needs further study, and it may be entitled to more consideration than is now realised in America.

COMPREHENSIVE DESIGNS.

While the writer is a firm believer in the dilution method of sewage-disposal within permissible limits, which he has tried roughly to outline above, he is aware that many American towns and cities are likely to grow to proportions where the dilution method will require more and more complete treatment of the sewage in order to be satisfactory. He believes that it is the part of wisdom to prepare designs for sewage-disposal works, so that if filtration is not needed at the outset, it can be adopted as conveniently as practicable in later years, and without embodying too great a sacrifice in works now undertaken. This means, among other things, that intercepting sewers, sites for screening plants, and sedimentation tanks could well be arranged with the idea that some day filtration also must be provided. If this were done, it would probably save considerable money that otherwise might be lost.

Relaxations.—In England the author found the principal topic of conversation among engineers to be the forthcoming report of the Royal Commission on Sewage-Disposal, and the disposition in that report to provide for "relaxations." By this is meant that there would be installed, piecemeal, works which would provide ultimately for purification to the degree set out by standards recommended by the Commission a few years ago. It is proposed now to take full reasonable advantage of dilution, but to arrange the works so that further and more complete treatment may be secured when and as required in the future. This is a reasonable programme, and it is what has been thought of by the writer in connection with a number of recent problems in this country, and also when the remarks above with respect to "comprehensive designs" were made

SEPARATE SEWERS.

So far as household wastes are concerned, in all new systems, and in many cases of extensions to existing sewer systems, it will be helpful to adopt the "separate system" to a greater extent than has been the vogue hitherto. The prevention of a mixture of the sanitary wastes of the household with the storm-water from the streets will aid materially in minimising the expense and in increasing the success attending sewage purification, sewage treatment, and the utilisation of the dilution method within safe, practicable lines.

SUMMARY.

It is permissible to dispose of sewage by dilution, provided that complications can be prevented so far as disease germs are concerned, and this should be best done in connection with water-filtration, and further provided that offensive conditions to sight and smell do not result.

In some large streams, as in Lower Mississippi, near New Orleans, sewage which is passed through coarse screens may, with care, be disposed of in a satisfactory way. In large lakes, tidal estuaries, moderate and small streams, it is important, if not necessary, for the success of maintaining "clean rivers" or "clean bodies of water," to free the sewage from floating and settling solids.

Permissible dilution of sewage without treatment in watercourses with fairly high velocities range apparently from about 3.5cu.ft. to 7cu.ft. per second per 1,000 population, depending upon the manufacturing wastes in the sewage and the dissolved oxygen content of the diluting water. For well-settled sewage, these limits become about 2.5cu.ft. to 5cu.ft. per second per 1,000 population, according to present information.

DRY-ROT IN WOOD.

Frederick J. Hoxie, of Phenix, R.I., presented a paper before the Boston Section of the American Society of Mechanical Engineers in which he gave the results of some experiments made on the destruction of lumber in buildings of slow-burning construction. Extracts from the essay are appended.

One experiment was to determine whether the resin in long-leafed pine heartwood was an important factor in resistance to fungus.

A cubic block of dense, fine-grained wood 2in. on a side, containing 18 per cent. rosin, was sawed in two across the grain, and half of it was boiled in benzole until practically all the resin was removed. The solvent was driven off, and a piece of wood containing living dry-rot fungus was placed between the two blocks. The whole was placed in a moist atmosphere, and the fungus allowed to grow for a year, at the end of which time a dense white growth had formed over each block. This growth was removed, the blocks dried and weighed. The specimen from which the resin was removed had lost 8 per cent., the other only 2 per cent. Neither showed the brown colour characteristic of rotten wood until after they had been dried for some time.

DESTRUCTION OF DRY-ROT.

Dry-rot fungus, though not so common as several other varieties, has a thermal death-point less than 100deg. F., so that the practical application in the case of these fungi is that they may be destroyed, in many cases, by use of the building heating system. A badly-infected mill can be given a cure, or one can get good results, if the heating is applied soon enough; but the author asserted that the cure is not likely to affect the growth of fungi in the ends of beams in the brick wall, where the heat does not readily penetrate. It is suggested that when there is any question as to the quality of the stock used in the building, heat is worth trying, and this should be done as soon as possible after the building is completed.

Several of the more common fungi which destroy basement floors, fence-posts, and railway ties are capable of resisting temperature up to the boiling-point of water. It appears, also, that these fungi have strands sometimes several feet long, capable of travelling for some distance over masonry or metal from beam to beam.

Diseases of timber, like diseases of men, have excited more interest in cure than in prevention. Prevention is by far the best procedure, and much work has been done along this line on railroad-ties, telegraph-poles, etc. Numerous antiseptic compounds have been suggested, creosote compounds and chloride of zinc being probably more commonly used than any others. Creosote, however, is objectionable in buildings, owing to its black, greasy nature, its somewhat increased fire hazard, and disagreeable smell. The kyanising process of treating timber with corrosive-sublimate solution has been used more or less frequently, with good results. Although its cost, corrosive qualities, and poisonous nature have probably operated to prevent its more general use, it appears to be well adapted to treatment of factory lumber. Chloride of lime appears to encourage the disease rather than remedy it.

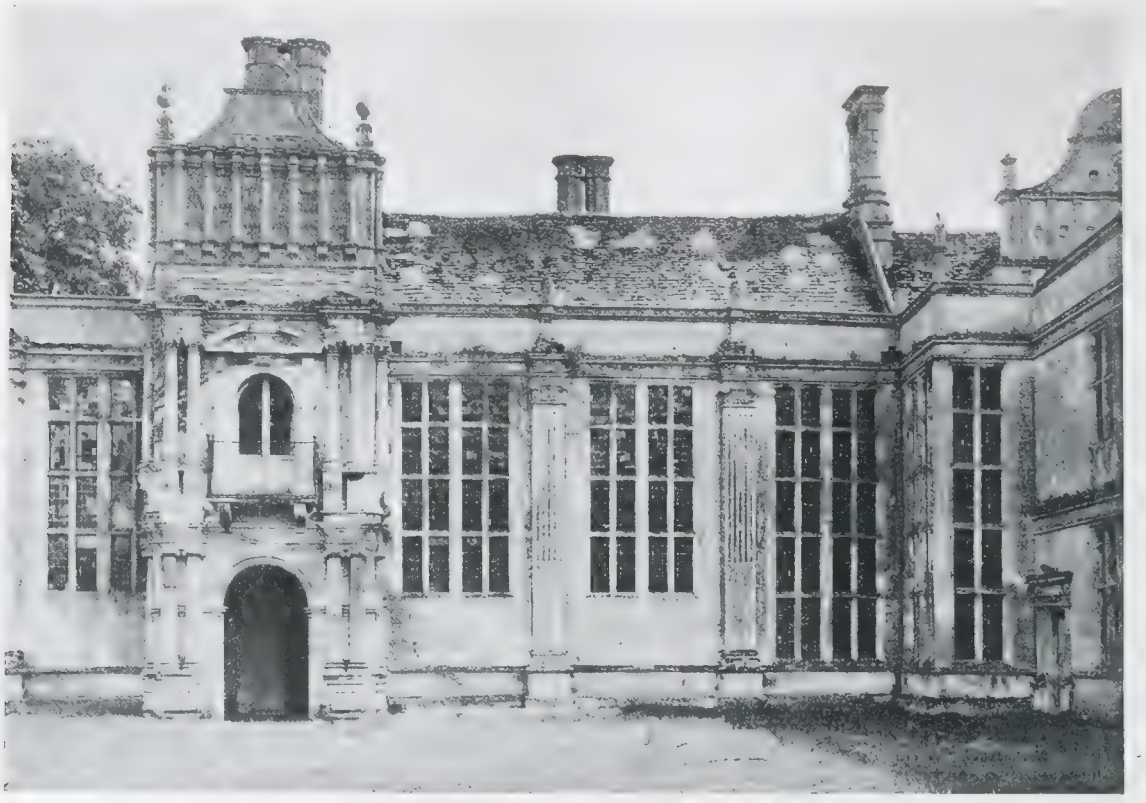
The season for cutting timber seems to have only a secondary importance; but the dryness of the wood, whether the moisture be sap or rain-water, is an important factor. Preserving timber under water prevents fungus-growth while the material is in storage, as fungus cannot grow without an air-supply. It may also have some benefit in dissolving from the outer parts of the wood, where infection must start, some of the nitrogenous constituents which serve as food for fungi. Further investigation is, however, needed along the line of the chemistry of seasoning and heart-foundation.

Quick-growing timbers will continue to come into more general use, owing to their more rapid reproduction. Hard pine, to be able reasonably to resist fungus in building-construction without antiseptic treatment, should contain about 10 per cent. of resin.

Artificial saturation of wood with resin has been tried without very satisfactory results, owing to the lack of penetration. It should not absorb over 5lb. of water per cubic foot in twenty-four hours at 70deg F. from kiln-dry conditions, and should weigh not less than 38lb. per cubic foot kiln-dry. These characteristics generally accompany fine-grained material, and with them fine-grained material is better than coarse-grained, while without them the fine grain does not appear to be a saving quality.

KIRBY HALL, NORTHAMPTONSHIRE.

The Earl of Winchilsea and Nottingham has decided to sell the historic old mansion, Kirby Hall, Northamptonshire, which was built by Sir Humphrey Stafford, of Blatherwick, whose name figures upon two of the panels of the parapet to the north elevation of the inner quadrangle. For many a long year the place has been left untenanted, and it has been denuded of much of its glory. Nothing remains but the foundations of the stables, erected in 1595. Up to 1836 it was occupied by the family; after that an agent lived in the building, then a farmer, and at last a shepherd used the Elizabethan library, acting as caretaker. All traces of the famous gardens have gone; but a considerable part of the mansion is fairly well preserved, and remains in a structurally sound condition. The park, which contained nearly every species of British tree, is utilised by fields, and nothing exists to indicate the exact position of the chapel. The good state of the fabric, more particularly in the inner quadrangle, is due to the excellent weathering stone, quarried on the estate at Weldon, about three miles off.



KIRBY HALL, NORTHAMPTONSHIRE: QUADRANGLE, LOOKING EAST.

We gave a full set of measured drawings of Kirby Hall, for which the Royal Institute of British Architects' Silver Medal was awarded to Mr. Lawrence G. Bright, in the Building News for March 29 and April 5, 1901. Further illustrations will be found in our issues for February 25, April 7, and May 12, 1876; August 12, 1882; January 23, 1885; and October 20, 1905. The fabric occupies a site in a beautifully-wooded country near the village of Weldon, and two miles from Gretton Station, while Kettering, on the Midland line, is within an easy motor distance. Kirby Hall is among John Thorpe's masterpieces, and was begun in 1570. Inigo Jones, somewhere about 1640, completed the big quadrangle, thereby adding greatly, of course, to the interest of the group, which ranks as one of the most notable examples of Early Renaissance Domestic Architecture in England.

The two accompanying photographs illustrate the present state of the fabric, for which we are indebted to the courtesy of Lord Winchilsea's surveyor, Mr. Joseph Stower, of 43, Chancery lane, W.C., in whose hands the disposal of the property is left. We gather from the plan which illustrates the interesting particulars Mr. Stower is issuing, and which are well worth perusal, that the precise area offered for sale is a matter of arrangement. The smallest area shown is 548 acres, or a larger holding of 2,310 acres is available. Further particulars will doubtless be given by Mr. Stower.



KIRBY HALL, NORTHAMPTONSHIRE: WEST SIDE.

TESTS OF WATERPROOFING IN CEMENT.

By Cloyd M. Chapman, Engineer in Charge, Westinghouse, Church, Kerr, and Co., New York.

So much that is contradictory has been said and written concerning various methods of producing concrete which is waterproof, and so much has been claimed by the vendors of various compounds which have been offered to the public as a positive solution of all waterproofing problems, that it is not surprising that not one cement user in ten has any definite or fixed opinion as to how to meet the problem of producing a waterproof concrete. There seem to be as many opinions on the subject as there are men willing to express their opinions, and the many methods which have been used differ greatly from each other. They are not all bad, for some of them have been very successfully applied. They are not all good, for many failures have occurred. Every little while a new preparation is offered, or a new method is advocated. There seems to be no strong tendency towards any one method of producing a waterproof concrete. Perhaps the reason for this continued uncertainty and diversity of opinion among cement users may be found in the very fact that many of the multitude of methods advocated have, in certain instances, proven successful, and each success makes converts to the method used. In many cases where special compounds have been added to a good, well proportioned concrete made of properly-graded materials, there is little doubt that the result would have been satisfactory if the special compound had been entirely omitted. In other cases, where the concrete is made of materials not wholly adapted to the purpose, an addition of a suitable filler or special compound would have produced the desired waterproof qualities.

To throw more light upon the effectiveness of the various methods of waterproofing concrete, a great many tests have been made by numerous investigators. The methods used by these experimenters have ranged from absorption tests to high pressure tests necessitating more or less elaborate apparatus.

The absorption, or low pressure tests are made by preparing specimens of any predetermined size and shape of the concrete waterproofed by the particular methods under investigation. After the desired age is attained, these specimens are either immersed in water completely or immersed almost completely, or placed in shallow water, so that the bottom only of the specimen is wet; or the specimen may be made cup-shaped, so that the water may be placed in the depression in the specimen, or a container for the water may be attached to the surface of the specimen. The two last-mentioned forms of tests have been extensively used in the laboratory of Westinghouse, Church, Kerr, and Co.

In all these forms of tests the results are expressed in terms of the amount of water absorbed, or the rate of absorption. In the pressure tests the specimen is either so made that the water-pressure may be applied to the interior of the test-piece, or it is so made that it may be inserted in the apparatus in such a manner that the water-pressure may be applied to a certain area on one face of the test-piece. In this form of test the results are expressed in terms of the amount of water passing through the specimen, or the rate of flow through it.

Both of the above classes of tests are very valuable if carried out in such a manner that the results may reasonably be expected to compare with results which may be obtained in practical work. To this end it should be realized that certain precautions be observed in preparing specimens and conducting tests, so that the results shall not be misleading or deceiving.

It is the purpose of this paper to call attention to some of the features of tests of this class which should receive particular attention, and to emphasise more strongly certain precautions, failure to observe which may cause some of these tests to give very deceptive data. These precautions apply particularly to tests made for the purpose of determining what method shall be used on a particular piece of work in the field. Some of them do not apply to tests designed only to compare the relative efficiency of various methods without regard to any particular work at hand.

PRECAUTIONS.

First: The selection of the materials to be used in making up the test-pieces. These should be selected from those available at the site of the work which is to be done. This is particularly true of the fine and coarse aggregates. It has more than once happened that tests made with suitable aggregates have shown a particular method to give a waterproof concrete, but the same treatment failed when the aggregates available in the field were used. If, therefore, it is desired to determine by test how to produce a waterproof concrete for a particular job, the materials available at the job should be used in making up the test-pieces. It is also important, in connection with the selection of aggregates, that there be secured a sufficient quantity of the materials to be used to conduct the entire line of tests contemplated, so that there need be no change in the materials used.

Second: The proportioning of the materials. This should be done with a view to determining the proportions to be used later on the work. The proportions to be used on the job should be used in the tests. There is little use in testing only a 1:2:4 concrete for watertightness and then use 1:2½:5 on the job.

Third: The mixing of the materials. This should duplicate as nearly as possible the mixing to be used on the work. Many a well-mixed concrete has proven waterproof which would have failed utterly if carelessly mixed.

Fourth: The consistency of the mixture. This should be carefully considered, because of its influence upon the results. A consistency should be chosen which it is practical

to use on the job under the circumstances prevailing there. For instance, it is useless to test a concrete of so thick a consistency that it would have to be spaded into the forms, if, on the job, the concrete is to be spouted from the elevator, and therefore necessarily of a much thinner consistency than was used in the test.

Fifth: The moulding of the test specimen. This process should imitate as nearly as possible the filling of the forms as it will be done on the job. To make a test piece by putting into the mould a small quantity of concrete at a time and constantly tamping during the filling process would probably produce a deceiving result.

Sixth: The finishing of the surface to be tested. This is one of the most important points in the preparation of test specimens. The condition in which that surface which is to be subjected to water is left has a very great influence upon the results obtained. For instance, it is quite possible, by means of a little trowelling, to produce a skin, or surface, coating of nearly neat cement. This will produce a dense surface, much more impermeable than the body of the concrete, and show results far superior to an untrowelled specimen of the same concrete. It is recommended that specimens be so prepared that the surface exposed to test truly represents the body of the concrete. This may be accompanied by removing the surface of the specimen after the concrete has hardened by means of a wire brush or by chipping or breaking off the surface before test.

In the case of absorption tests, this may be done with a stiff wire brush when the specimen is about twenty-four hours old. In the case of the pressure tests, only that portion from which the water passes out of the specimen needs to be removed. This may be accomplished by making the test piece with additional material added to the surfaces to be tested, so that this additional concrete may be broken off after the specimen has hardened, and before the test is performed. Unless some such precaution is taken, tests of this character are liable to show the efficiency of the surface of the specimen in resisting the water-pressure rather than the value of the mass of the concrete in performing the same function.

One suitable form for a specimen for pressure tests is in the form of a central disc of suitable diameter and thickness. The outside surface and the outer portion of the two faces of this disc are moulded smooth and regular, so as to fit the receptacle, or holder, into which it must be placed in order to apply the water-pressure to a definite and restricted area of its surface. From the central portion of the two faces of this disc project truncated cones whose smaller diameter is just equal to the diameter of the circle which is to receive the water-pressure. After the specimen has hardened and is ready for test, the two truncated cones are broken off with a blow of a hammer, leaving a disc.

By this method there is exposed to the water-pressure a freshly-broken surface of concrete which has not been subjected to trowelling, or other influences tending to alter the natural condition or distribution of the constituents of the concrete. This freshly-broken surface is not only presented to the water on the side to which the pressure is applied, but is also provided on the opposite side where the water leaves the specimen. The test, therefore, is made on a certain thickness of concrete taken from the interior of the specimen, and the results are not influenced by the method of finishing these two surfaces.

There are, of course, cases in which it is the surface permeability that it is desired to test, and in such cases this form of specimen is unsuitable. But in all cases in which the watertightness of the concrete mass is to be determined the above type of specimen is much to be preferred.

There are also variations of this form of test piece which will accomplish the same result. Any method which removes the finished surface from the area to be tested is to be preferred to one which does not remove that surface.

Even in such cases as those in which the specimen is moulded on a surface of glass or other smooth material, and no trowelling is done, there is a concentration of cement and fine aggregates next to the surface which must affect the results obtained if this richer layer or skin is not removed before test.

Seventh: The curing or ageing of the specimen. This matter should also be decided with a view to conditions which will prevail in the field when the real work is done. If it is impracticable on the job to keep the concrete constantly wet for a considerable period, then the test specimens should not be stored in water. If the only wetting the work in the field is to receive is the water contained in the concrete when it is placed, then the test pieces should receive no additional water after moulding. On the other hand, they should not be allowed to dry out any faster than would the work in the field, as they would doubtless do owing to their comparatively small size if kept indoors in a laboratory, and no precautions taken to regulate the drying process.

The specimens have now reached the stage when they are ready for whatever tests are to be applied to them, and the methods used in performing these tests are so varied that the limited scope of this paper will not permit an extended discussion of them. Those with which the writer is familiar appear to be open to little, if any, criticism. One of the most important features is that the conditions adopted shall remain constant throughout the test.

If the test is an absorption or a non-pressure test, the immersion or partial immersion should be under uniform conditions, and for definite lengths of time in clean water. If the test is a pressure test, the pressure should be kept constant, the water clean, and the method of measuring the water passing through the concrete accurate. As the area subjected to pressure is usually small, and the amount of water passing is correspondingly small, in some cases where the measurement of the water is made by collecting the drippings from the underside of the test piece, the element of evaporation may greatly affect the results. A form of apparatus in which the amount of water passing into the specimen is determined eliminates this error.

In this form of apparatus the specimen is clamped and sealed to a metal cap, which is provided with a projecting, vertical graduated glass tube. The cap and the tube are filled with water, and air-pressure is then applied to the top of the tube in any desired amount.

TIME ELEMENT.

Another matter in connection with tests of waterproofings for concrete which seems to have had but little attention paid to it is the effect of time and the elements upon efficiency of the waterproofing materials. In practically all of the numerous tests of waterproofings made in the past seven or eight years in the laboratory of Westinghouse, Church, Kerr, and Co., it has been the custom to expose the test pieces to the action of the weather on the roof of their office building, after first testing them, and then testing again after six or twelve months' exposure. The results of these tests after prolonged exposure show that few, if any, of the materials which are applied to the surface of concrete to waterproof it after it is made will retain even a fair proportion of their efficiency. In the case of those methods by means of which the entire mass of the concrete is designed to be waterproof, there is shown sometimes a steady improvement after exposure, and sometimes a marked decline. In some cases the life of the treatment is very short, and the failure, after a few months' exposure, almost complete.

WORKSHOP FLOORS.

By Walter J. May.

Not only for the physical comfort of the workers, but also for the prevention of accidents, the floors of all workshops should be carefully considered, because a faulty floor might very well lead to compensation having to be paid. The strength of a floor has also to be considered in relation to the class of work which has to be done on it, as very obviously a shop in which light optical work is carried on does not require the same strength of flooring as one where heavy engineering is carried on. The materials of which the floors are composed will also vary largely, if the best floors for various classes of work are chosen; but, in regard to this, local conditions have to be taken into consideration to some extent.

Now, in a blacksmith's shop a wood floor would scarcely be laid down, while equally slippery bricks or stones would be out of place, this somewhat reducing the things which can be used. On the one hand, it is necessary to have a non-inflammable floor, while on the other, it is desirable to have a hard one which can be kept clean. Probably good stock bricks laid on edge on a layer of concrete, and having close joints grouted up with cement and sand, would give a capital floor if the concrete foundation was of a thickness commensurate with the weight of the work done. Brick floors are, of course, expensive, and as a fair substitute, a concrete floor, in which the top three or four inches consists of a concrete made with Portland cement, and broken hard brick, passing a ¾in., and being retained by a ⅛in. square mesh sieve, would provide a good, non-slippery floor; and where weight has to be carried, if expanding steel lathing is used in the construction of such a concrete floor, almost any weight could be carried if the foundation was sufficiently strong. Soft dirt must not exist in concrete, however, or it will not stand long, while sufficient time must be allowed to allow it to harden before vibration is set up. The addition of about 10 per cent. of the weight of the cement in clean cast-iron borings, passing a ⅛in. square mesh sieve, tends to the prevention of the concrete flying when heat is applied, but this addition is not a necessity. Floors composed of puddled clay, are easily repaired when worn; but they should be covered with an inch of old foundry sand until dry, as this makes such floors wear longer and fills up cracks formed during drying. When on a solid foundation, a puddled clay or marl floor will stand a great amount of wear, while articles falling on it do not get badly bruised or damaged owing to its elasticity. Such floors always want to be kept slightly damp, however.

In the foundry, the larger part of the floor will be of sand as a matter of course, but it often happens that some parts are required to be of a hard character, and where there is no chance of molten metal being brought on to such hard floors, they may be of stone, brick, concrete, or other convenient material; but where molten metal is concerned these materials should be avoided. Where metal is concerned, probably a puddled clay floor, covered with floor-sand, until this is trodden in to form a surface to the floor, would be as good as any, as molten metal would generally fall dead on this at all times when not damper than ordinary moulding sand; but on ordinary hard floors spilt metal splashes or explodes, doing more or less damage usually. A concrete floor with a 2in. facing of Portland cement, mixed with 20 per cent. of cast-iron borings and filings, passing a ⅛in. square mesh sieve, when kept dry will usually stand molten metal well without undue splashing, but it is not fit to bear any large quantity of metal unless coated with dry sand. As a rule, puddled clay is best in the foundry, for although possibly wearing rapidly where there is a large amount of traffic, clay floors are easily repaired.

In machine and fitting-shops, the best flooring is that made with deal blocks cut across the grain and set with the cut ends upwards on a concrete foundation, and afterwards grouted with neat Portland cement. If, as should be the case, the surface is level, such a floor is always good to walk on without being slippery, is long-lasting, and provided the concrete foundation is strong enough, will carry almost any weight without injury. Following on this, bricks of an unglazed kind, when laid on a good foundation and grouted with cement and sand, make a good floor, but great care must be taken that bricks with a slippery surface are not used. For the reason that they are liable to

become slippery, some of the vitrified blue bricks are very undesirable, for, although they wear almost indefinitely, they are liable to cause accidents where there is grease, and the workpeople wear nailed boots or clogs, as such footwear obtains no grip or "bite" on bricks or artificial stone having a slippery surface.

A concrete floor with the top few inches composed of broken brick and Portland cement, as previously mentioned, would make as good a hard floor as any, and if expanded steel lathing was embodied in the construction, both tensile and compressive strength would be great. Concrete having shingle or fine gravel in the facing is too slippery, especially in the presence of grease; but if granite chippings are used the slipperiness is rather less at first, but this form soon becomes glazed on the surface. Asphalte and tar preparations make good floors for some trades, but in the presence of oil or grease they soon soften and become nasty, while heat softens them very much.

Generally speaking, indoor floors should be of wood blocks, thick planks, bricks, or concrete made with broken brick fine aggregate as facing, or in wet trades good York flagging may be used, although this is somewhat expensive and difficult to get. Of course, *durable* floors of many kinds can be made, but other things have to be considered as well as durability, because accidents have to be paid for, and one accident may very well cost more than laying down an entire floor. Workpeople wear what footwear they like, naturally, and this must be studied by the employer if he wishes to protect himself from possible loss.

Outside yards and roads made up with about 6in. of foundry slag broken to pass a 3in. ring, the material being well compressed and covered with a couple of inches of the finer waste from the cupola, will in a short time work down and carry almost any weight, while the surface will wash up clean enough for any practical purpose after a few heavy rains. Where cost is not a great object, however, yards made up with a good hard foundation and paved with about 4in. granite cubes, are first-class for all purposes, especially where grouted with hot coal-tar and sand, this not only preventing any vibration, but also making the whole floor waterproof. Where there is only footwear to be considered, concrete, artificial stone, or brick-paving can be used according to which is most economical; but due attention has to be paid to local conditions, as often good local material can be secured at moderate rates. In any case, however, it pays to have good roads, and clean, well-surfaced yards.

A USEFUL BUILDERS' HAND PUMP.

On Monday last a demonstration was given of a new hand-pump, the invention of Mr. Jean Zwicky, a Swiss engineer, at 9, Belfast-road, Stoke Newington, which embodies a novel idea, capable of adaptation to many uses, and will certainly be of great use to builders.

In practically all hand-pumps, whether for liquid or air, not much has been done in advance of the old "bucket," or "clack," valves. Their loss of efficiency is enormous, and there is almost always difficulty in obtaining a vacuum.

Mr. Zwicky's valve is not operated mechanically, but is actuated by the pressure of the liquid dealt with, and action is certain and instantaneous. Fig. 1 is an elevation of a complete pump. Fig. 2 is an enlarged longitudinal section of the central portion of such pump, showing how the movement of fluid is controlled. Fig. 3 is a cross-section on the line III.—III. of Fig. 2.

In the drawings the tubular piston-rod 1 is stationary, being pivoted at 2 upon a suitable stand, 3. Its lower end is turned to the side, as seen at 4, to receive an inlet hose. Similarly, its top is turned to the side for junction to a supply-pipe, while the vertical column of the rod terminates in a suitable handle, 5, by which the pump may be supported in use. The cylinder 6 slides on the piston-rod, being moved by means of the lever shown in operative position in dotted lines. In order that the pump may be compactly folded to secure portability, this handle is constructed in two parts. A rod, 7, preferably hollow, is pivoted at 8 at the lower end of the piston-rod, and at its upper end is reduced in section, being flat on two sides

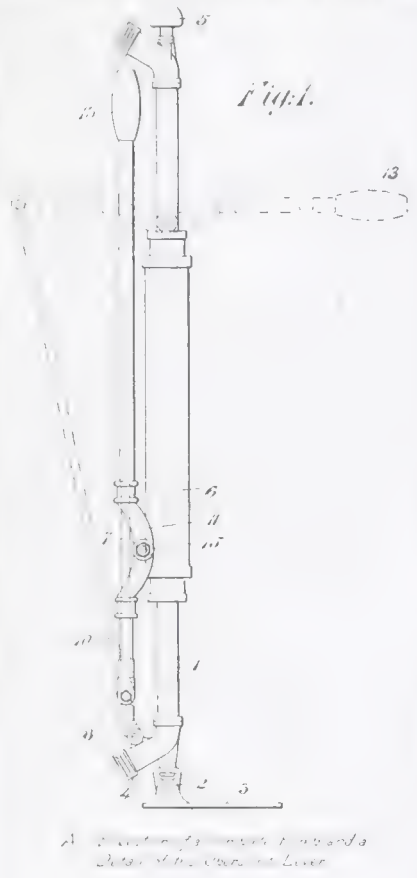


Fig. 1.

but otherwise conical, and terminating in a head, 9. Upon this rod there slides a tube, 10, which is formed in two separate parts joined by a yoke, 11. At its lower end the tube 10 is forked, and carries spring-pressed pins, 12. Its upper end is formed as a suitable handle, 13, and its yoke has bosses, 15, to receive pins which pass through them and into recesses provided on the end of the cylinder 6.

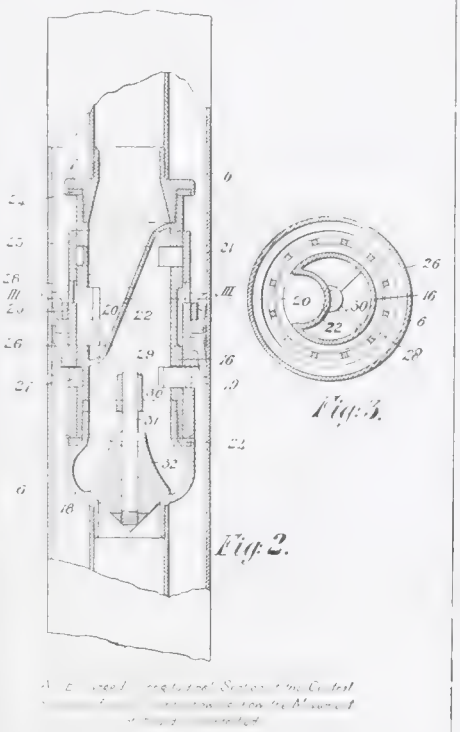


Fig. 2.

Fig. 3.

When the pump is required for use, the tube 10 is pulled off from the rod 7 as far as it will go, the pins 12 engaging against the head 9, to prevent complete withdrawal, and engaging against the flattened surfaces beside the head, to form a pivot for the part 10. The yoke 11 is passed over the end 5 of the pump into the position shown in dotted lines, and is then connected with the cylinder. When the pump is no longer required, the lever 10 is detached from the cylinder, passed over the head of the pump, again rotated on its axis so that the pins 12 come upon the conical reduced portion of the rod 7, and the tube can then be pushed back over the rod to the position shown in full lines.

The piston-rod 1 is formed in two portions, which are joined in the interior of the cylinder 6 by a tube section, 16, which screws on to castings, 17, 18, which in turn screw into the parts of the piston-rod. This tube section has three rings of ports, 19, 20, and 21. Its interior is divided by a slanting curved partition, 22, which is so formed that both the ports 19 and 21 open on the right-hand side of the partition, while the ports 20 open on the left-hand side of it. The outer surface of the tube section 16 is recessed circumferentially at the ports, in order to increase the port area as much as possible.

Upon the tube 16 there slides a sleeve, 23, the motion of which is limited by the castings 17, 18, or, preferably, by rubber or like rings, 24, mounted in those castings. This sleeve has secured to it by a screwed ring, 25, or by a split ring sprung into place, the cups of rubber, or other material, 26, which complete the piston and make tight joint with the cylinder 6. There are two rings of ports, 27, 28, in the sleeve 23, each of which may register with either an end ring or the middle ring of ports in the tube section 16, according as the sleeve 23 is in one or other of its extreme positions.

In a boss, 29, carried by the partition 22, or, as in the drawing, by a spider, 30, there slides the stem 31 of a valve, 32, which has its seating in the casting 18. If the pump is intended for water, the part 32 of the valve is conveniently formed of dermatin. There may be a spring around the stem 31 pressing the valve on to its seating.

The working of the pump will be readily understood. In the position shown in Fig. 2 the cylinder 6 is moving downward. Fluid is entering through the lower end 4 of the piston-rod, passing the valve 32, and filling the enlarging space below the piston through the ports 19 and 27. The fluid in the space above the piston is passing out through the ports 28, 20, and the top of the piston-rod. When the direction of motion of the cylinder 6 reverses, the piston 26 moves with the cylinder until the sleeve 23 abuts upon the casting 17, when the connections of the two compartments of the cylinder to the two portions of the piston-rod are reversed.

A short interval is occupied in this relative movement of the piston and piston-rod. Consequently, the ports 19, 27 are not closed the instant the motion of the cylinder, and therefore the suction, ceases. This, however, is not a source of loss, because the valve 32 drops upon its seating immediately suction ceases, and so prevent the return of any fluid that has been drawn in.

There are modifications to suit various needs—in fact, the possible adaptations of the pump are legion. The trials we witnessed, however, convinced us that a 2½ pump, capable of discharging 500 to 600 gallons per hour, can be made and sold for £2, as against the standard iron-barrel 2½in. copper-lined pump, with a capacity of 270 gallons, which sells at £2 17s. 6d. Moreover, the design of the Zwicky pump, its lightness, portability, instant adaptation for use, or for transport, and the entire absence of any loose parts, will commend it to all users—to builders especially.

Its application for spraying purposes, as a cycle hand-pump, and more or less kindred needs, is as certain as its success is likely, if it is handled in a businesslike way.

In accordance with a report prepared by their surveyor, Mr. G. B. Tomes, the urban district council of Barnes, S.W., have decided to install a slab-pressing plant at the dust-destructor, at an estimated cost of £3,000.

OBITUARY.

The death took place early on Saturday morning, as the result of an apoplectic seizure, of Councillor Joseph Boothroyd Corby, M.S.A., F.S.I., ex-Mayor of Stamford. Mr. Corby, who was 74 years of age, was widely known in the Midlands as an architect. He was articled to the late Mr. Edward Browning, an ecclesiastical architect of the last century, and, on starting business on his own account, was engaged on many church restorations in the country. He designed the town house of the late Earl Rosslyn, the Grafton House and racing establishment at Newmarket of the late Baron de Hirsch, the hospital at Milton Abbas, Dorset, for Baron Hambro, the memorial hospital to the late Duke of Westminster at Shaftesbury, and extensions at Uppingham School, as well as works on the estates of the Marquis of Exeter, Earls Brownlow, Westmorland, and Lindsey, Sir Arthur Fludyer, and others. He was one of the senior members of the Stamford Town Council, occupying the position of mayor last year, and was a member of the Kesteven (Lincs) County Council. He had filled many offices connected with Oddfellowship, was a Fellow of the Surveyors' Institute, and a member of the Council and Hon. Local Secretary of the Society of Architects, which he joined at its formation in 1884. He was also one of the first members of the old Volunteer Force.

The death of Mr. John Colliver, builder and contractor, Carvoza-road, Truro, took place at the Nursing Home, Strangways-terrace, in that city, on Friday morning. Mr. Colliver was erecting the new museum for the Royal Institution of Cornwall in River-street, Truro, and while supervising the work, a few days ago, a stone fell on to his hand, causing a slight abrasion. He was medically attended, and the hand had apparently healed; but blood-poisoning set in, followed by lockjaw, and, though the hand was amputated, a fatal issue supervened. Mr. Colliver, who was 62 years of age, was a native of St. Columb Minor, and when a young man spent several years in America. Returning to England, he started business on his own account in Truro about twenty two years ago, and since that date he has carried out many large building contracts. Among the buildings erected by him are the Central Technical Schools, Truro; Barbis Bay Hotel and the new wing for Falmouth Hotel; Beach Hotel, Seaton; Ship and Castle, St. Mawes; Lloyds Bank, Capital and Counties Bank, and several large residences at Newquay; schools and bank at Fowey; the sea-wall and Worth's Quay at the head of the River Fal; and he was engaged on the council school at Daniell-road, Truro, and the new museum in River-street. He leaves a widow and four grown-up children.

In succession to Mr. Reginald E Middleton, resigned, Mr. J Gurdon L. Stephenson has been elected the chairman of the engineering section of the London Chamber of Commerce. The deputy-chairman is Mr. F. S. Courtney.

During excavations on the Syndale estate at Faversham, two Roman graves have been found containing pottery. The articles include two jars (intact), several pieces of pseudoware, and some fragments of a tear-glass, a glass vase, and a bronze ornament. The estate belongs to the family of Mr. G. C. H. Wheler, M.P.

At St Helens Lancs, on Friday, Mr. A M Brightmore held a Local Government Board inquiry into an application by the St. Helens Corporation for leave to borrow £2,200 for completing the extension of the cemetery, and £9,658 for the completion of the pumping-station at Melling. Mr T A Turton, deputy town-clerk, and Mr. J. J. Lachland, water engineer, explained the proposal.

The Canadian Federal Government have awarded the contract for the proposed dry dock at St Joseph de Levis, Quebec, to M P and J T Davis, at the price of 2,721 116dol., which was 700,000dol. lower than the estimates of the Government engineers. Messrs Davis have the advantage of a large amount of plant on the ground, as they are the contractors for the substructure of the Quebec bridge, and also for the Quebec section of the Transcontinental railway. The dock will be 1,150ft. long, and 120ft. wide.

COMPETITIONS.

BELFAST.—At the instance of Councillor W. J. Gilliland, F.R.I.B.A., the Belfast Corporation has decided to increase the amount to be spent on the first section of the proposed art gallery to the sum of £30,000, with £5,000 for equipment. The draft conditions for the architectural competition have been prepared by Dr. Burnet, of Glasgow, the assessor, and approved by the building committee, subject to certain amendments to be discussed with the assessor.

CINCINNATI, O., COURT HOUSE.—The jury of award in the competition for the Cincinnati, Ohio, courthouse have announced their decision. Messrs. Rankin, Kellogg, and Crane, of Philadelphia, received the first premium, which carries with it the commission to execute the work. The second choice of the jury was the design submitted by Mr. A. Lincoln Fechheimer, of Cincinnati. The estimated cost of the building is 2,500,000dol. The jury of award was composed of Professor James Knox Taylor, Profesor Paul P. Cret, and Mr. H. Van Buren Magonigle. Professor Warren P. Laird, of the University of Pennsylvania, was the professional adviser to the Courthouse Commission.

MANCHESTER ROYAL EXCHANGE.—The board of directors of the Manchester Royal Exchange, Ltd., invite architects to submit designs in competition for additional new buildings and alterations on the existing Exchange buildings. The board have appointed Mr. James S. Gibson, architect, 5, Old Bond-street, London, W., to act as assessor for the competition. Particulars, instructions, and plans will be forwarded on application to Mr. Richd. J. Allen, Master, Manchester Royal Exchange, Ltd., Manchester, accompanied by a cheque for two guineas, which will be returned on receipt of a bona-fide design or the return of the particulars, etc., by October 1, 1913. Designs must be delivered on or before January 2, 1914.

NEW BOARD OF TRADE OFFICES.—Preliminary sketch designs in competition for the new offices of the Board of Trade to be erected on a site in Whitehall-gardens, are invited by H.M. Office of Works. The whole of the houses in Whitehall-gardens have been acquired up to the grounds of Montagu House, the residence of the Duke of Buccleuch, and this area and the site of the present premises will be occupied by the new offices. The new buildings will have a frontage to the Embankment of 350ft., another to the Horse Guards Parade of 300ft., and one to Montagu House of 208ft. A space will be left between the new building and Montagu House for a much-needed road way between Whitehall and the Embank ment. The building line will be a continuation of Whitehall-court, and this will leave a vacant space of about 150ft. deep, which will probably be laid out as gardens. The whole of the vacant land in front of the houses in Whitehall-gardens is to be built upon, and nearly one-third of the square in front of the present offices will also be occupied. The new offices will not have any frontage to Whitehall, as it is not intended to interfere either with Gwydyr House or the Royal United Services Institution. It is proposed first to demolish the houses which have been acquired for the extension of the offices, and to build on the site offices for departments already in occupation of the adjoining premises. The assessors are Mr. Reginald Blomfield, A.R.A., P.R.I.B.A., Mr. John Belcher, R.A., and Sir Aston Webb, C.B., C.V.O., R.A. The competition is open to all British architects, and from sketch designs to be submitted the authors of not more than ten designs will be selected to submit designs in a final competition, and will each be paid an honorarium of £300.

NEWCASTLE-UPON-TYNE.—In the competition for proposed baths at Benwell, Heaton, and Walker, the assessor's award in the above competitions is as follows: Benwell—First prize, Alfred W. Cross, 46, New Bond-street, London, W.; second prize, Messrs. Wallis and Bowden, 6, Duke-street, Adelphi, Strand, London; third prize, Messrs. Wright and Chapman, 38, Grainger-street West, Newcastle-upon-Tyne. Heaton—First prize, Alfred W. Cross; second prize, Messrs. Wallis and Bowden; third prize, Messrs. Wright and Chapman. Walker—First prize, Alfred W. Cross; second prize, Messrs. Wallis and Bowden; third prize, Messrs. Wright and Chapman.

PONTEFRACT.—The Pontefract Board of Guardians recently invited architects practising in the area of the union to submit designs for a new nurses' home, the designs being submitted without any name or identification. After a unanimous decision it was found, on opening the envelope, that the successful competitors were Messrs. Garside and Pennington, architects, Pontefract and Castleford. The building provides accommodation for twelve nurses. The architects have received instructions to proceed at once.

TENDRING COTTAGE HOMES COMPETITION.—The R.I.B.A. Competitions Committee desire it to be known that the conditions of this competition are not satisfactory, and are the subject of correspondence between the committee and its promoters.

CHIPS.

The Wallasey Corporation have received the sanction of the Local Government Board for borrowing £11,040 for mains, services, and transformers for the electricity works.

Messrs. Patterson and Grahame, architects, Scottish Provident Buildings, Belfast, and Ballymena, are preparing plans for the erection of 110 labourers' cottages for the Ballymena Rural District Council.

New co-operative premises erected in Railway-street, York, for the York Equitable Industrial Society, were opened last week. They adjoin a block opened in January, 1912, and have cost £9,000. Mr. H. Beck, of Doncaster, was the architect.

Mrs. Houston (née Miss Robertson), wife of ex-Bailie Houston, architect, Roy Lodge, Grieve-street, Dunfermline, was found dead in her bathroom on Friday morning. Death is supposed to have been due to an affection of the heart.

Mr. Adolphe Levesque, a well-known ecclesiastical architect, recently died in Montreal, aged 86. Mr. Levesque designed a very large number of Roman Catholic churches and schools, and was also consulting architect for the Dominion Parliament Buildings, Ottawa.

The Great Central Railway Company have arranged economical and attractive tours in Holland, and by the Grimsby and Antwerp route to Brussels, and a visit to the International Exhibition at Ghent, which is drawing visitors from all parts of Europe. The tours have been arranged at inclusive fares, which save the tourist all worry as to the essential details which make or mar a holiday.

The exhibition of drawings at the British Museum has been withdrawn since Saturday, in view of the closing of the department and its removal to the new wing of the buildings now approaching completion, from Mr. J. J. Burnet's designs. Messrs. Blake, of Plymouth, are the contractors for the extension, which was illustrated in our issues of March 12, 19, 26, and April 2, 1909, and Feb. 14, 1913.

The reopening of Montrose Public Library, after extensive repairs, took place on Friday. The building has been closed since November last, while new floorings and dadoes, rendered necessary by an outbreak of dry-rot, have been placed in the lending department, reference department, ladies', juvenile, and private rooms. The flooring is in terrazzo, while the dado consists of green tiles with the woodwork stained green to match.

The mayor and members of the corporation of Lymington, accompanied by the borough officials, borough and county justices, and others, assembled at the Angel Hotel shortly before noon on Wednesday, and proceeded, headed by the town sergeant and mace-bearers, to the new municipal building in the High-street, where they were met by Mrs. Ellen Hewett, who had defrayed the entire cost of the buildings. The premises were formally opened, and a vote of thanks was passed to the donor. The earliest-known town-hall in the borough was erected in 1463 by a lady. The last town-hall, which stood in the High-street, was demolished as an obstruction to the traffic in 1858.

Currente Calamo.

We are informed by the Port of London Authority that the tender of Messrs. John Mowlem and Co., Ltd., has been accepted for the construction of the foundations of the new offices on the Trinity-square site of the Authority's new building. The amount is between forty and fifty thousand pounds. On application to the Authority for the usual list of tenders, we are informed that it is "not its custom" to publish such. We think it ought to be. Builders invited to tender have, in our opinion, the right to the information, and we are surprised the Port of London Authority withholds it. Secret tendering, at its best, is a mistake; and we hope the R.I.B.A. will, in response to the recent communication addressed to it by the National Federation of Building Trades Employers, take an early occasion to rebuke the growing practice. We should further add that the announcement of acceptance should have appeared in our last issue. The communication of the Port of London Authority is dated August 14, and on that date, just as we were going to press, knowing the matter was on the point of decision, we telephoned through to inquire, and were told the result was not yet known. The news is thus a week stale, through no fault of ours. Prompter information is another obligation due by public authorities to those who respond to their invitations to tender.

So much nonsense has been written about the roof of Westminster Hall that we are glad to note the letter from Mr. W. D. Caröe in the *Times* of Wednesday. For one thing, anyone who knew the late J. L. Pearson will have taken at its worth the assertion that he never examined the roof. It is perfectly true, as Mr. Caröe points out, that Mr. Pearson did what any architect worth his salt would do when he called in John Gaymer (of the firm of Cornish and Gaymer, of North Walsham), in 1885, to examine the roof and report to him. Mr. Gaymer has ranked among the foremost of our experts in English oak and in English Mediæval carpentry. He made his examination from a scaffold slung from the trusses at a time when the backs of the timbers could be approached. He reported that the roof was sound. There were blemishes, but not such as to impair its stability. He was critical of some bolting and patching, comparatively modern, in 1885. His views confirmed the opinion Mr. Pearson had already formed both as to the condition of the roof and to the fact, which had been raised in connection with Pearson's proposal to demolish them, that dormers had never been part of the original design.

Mr. Caroe's comments on Sir Edwin Durning Lawrence's preference for teak for the repairs are also entirely to the point. Mr. Caröe instances a large slab of temple teak, in his own possession, carved by Eastern craftsmen some two hundred years ago. The sapwood is riddled by worm, just as English oak would be, but only when sapwood has been admitted. Properly ripened oak is as free from worm as teak. Sir Edwin evidently knows nothing about English oak, which he grossly libels. When an oak roof has stood from 1399 to 1886 in an admirable condition of stability, to suggest introducing foreign timber now, to repair the ravages of the last twenty-seven years, seems to border upon the ridiculous. When Pearson left the roof in 1886, Mr. Caröe believes, and we believe, it was as sound as it was when Bacon (or was it, perhaps, Shakespeare?) walked under its shadow with the plot of "Richard II." seething in his brain.

At Monday's meeting of the Dublin Corporation, the Lord Mayor moved the suspension of the standing orders in order that the council might discuss the report of the special committee on the proposal for a municipal gallery of modern art. He asked that the matter should be discussed and settled, in order that a special meeting might be avoided. On a division, the Lord Mayor's motion was defeated by 22 votes to 15. He then gave notice that he would convene a special meeting of the Corporation for next Monday. During the discussion compliments passed. "What interest have you in the matter?" asked Mr. Quaid, excitedly. "The interest of keeping works of art in Dublin, not the hooligan's interest," responded the Lord Mayor, hotly. Mr. Quaid: "The spurious interest to make a job!" Dublin hardly seems likely to benefit by the patience and generosity Sir Hugh Lane has exhibited throughout in this matter.

The Duke of Bedford and other land owners have just concluded what the London Correspondent of the *Manchester Guardian* calls a sort of strike against the payment of betterment rates. The incident arose in connection with the betterment system of taxation, which for the first time has been adopted in connection with the Strand improvement scheme. The London County Council, having spent five millions on the new street from Holborn to the Strand, received Parliamentary power to levy a toll on the owners of adjoining property bettered by the improvement. Accordingly, the Council scheduled certain properties which were thought to have risen in value. First, Meux's, the brewers, raised objections, and took advantage of a remarkable clause in the Act which enables owners who do not agree that their property has been bettered to call upon the municipality to buy the property at the old valuation. If the Council refuses, it must abandon the betterment charge. In this instance the Council bought one of Meux's public-houses, and left the other with the betterment rate removed. After this, the owners of some fifteen properties called upon the Council to buy them out or abandon the additional rate. These properties were scheduled as having increased in value to the extent of £50,000 a year, and the betterment rate upon them was £745 per annum. The old valuation was about £181,000.

The Improvements Committee has arranged to buy some property and leave the rest without the betterment rate. Four houses in Southampton-row belonging to the Duke of Bedford are to be bought by the Council for the old valuation of £4,708, so in this case the Council gets the scheduled betterment or enhanced site value, fixed at £5,560, for nothing. In the other cases the Committee is not buying, but is abandoning the betterment rates, which amount to about £700 a year. So the Duke of Bedford keeps his property in Holborn and Southampton-row, which had an initial value of £65,350; but the Council is losing the scheduled enhanced site value of £19,200, and so the duke escapes the payment of the betterment rate of £82 per annum, based upon 3 per cent. of one-half of the enhanced value. The Holborn Restaurant, too, is not going to be bought by the Council. The freehold is held by the Office of Woods and Forests, and the initial valuation stands at £71,833. The Council bettered this by £16,000, and levied a rate of £240; but as it will not buy the restaurant, the extra rate of £240 per annum is to be abandoned. The betterment rate of £60 a year on the Victoria Club in Wellington-street, and of £75 on the Wellington public-house, 351, Strand, are, too, to be abandoned.

Unsophisticated people of all shades of opinion must, we fancy, have read with mingled amusement and irritation the letter of Mr. C. E. Price, M.P., the "Group Chairman" of the Land Values fanatics, in the daily papers this week. It was that wicked Mr. Pretyman, Mr. Price protests, who wrecked the Revenue Bill, and, apparently, some unnamed M.P. who "owned a dam which was made before Domesday Book appeared - that is, somewhere about 1087." Says Mr. Price: "It is only through valuation of agricultural as well as urban land that any effective measures of rating reform can be obtained, and until this valuation is made it will be absolutely impossible to give much-needed relief to the local rate payers of the country. It was on this account that the Land Values Group attached the utmost importance to Clause 11 of the Revenue Bill, and saw no reason why it, with an increased time limit, should not have remained part of the Bill. In point of fact, the Land Values Group is the best possible friend of every ratepayer in the country, and its proposals would give vastly greater relief to the overburdened ratepayer than any concession in the increment duty." Of all of which we do not believe one word. That, however, is beside the question. It is a free country, and possibly others do. What astonishes us is the really venial obstructiveness of the House of Lords, if you believe the worst its enemies say of it, compared with the ease with which the House of Commons can be bullied or cozened into the abandonment of the business for which it really exists at the will of rival plaistermongers.

Probably no line is as great a favourite with the late holiday maker as the Great Eastern; hence the demand for its holiday literature, all of which can be had gratis at any of its stations, or from the office of the superintendent of the line at Liverpool-street. This is, firstly, because, by sea coast or inland, the weather is seldom so settled in the autumn as in the pleasant district the Great Eastern serves so well; secondly, because its fares are so reasonable, and its service so good; and, lastly, because the holiday-maker must be exigeant indeed who cannot suit his taste amid the variety of scenes and surroundings East Anglia offers; and whether his taste inclines to the reserve which enhances the charms of Felixstowe, or Cromer, or Lowestoft, or prefers the jollity of Clacton or Yarmouth, or seeks sport on the Broads, the golf-links, or the rivers, he is insured anywhere the best bracing air, good homely food, and the unspoiled hospitality of entertainers who are not yet all foreigners, or adepts in piling up the traveller's bills, and little else he cares for.

It is proposed in the next Session of Parliament to amalgamate two Bills which

have already been introduced with the object of improving the working conditions of clerks, whose health is now jeopardised by the bad lighting and ventilation of the offices in which they are employed. Such a measure is badly needed, and lighting and ventilating engineers would do well to forward it by discussion of the present shortcomings so numerous in badly-lit and poisonous offices. The Government itself needs looking after badly in this respect, especially in some of the Post Office establishments.

CHIPS.

Professor S. M. Dixon, Professor of Civil Engineering and Dean of the Faculty of Science at Birmingham University, has been elected to the new chair in civil engineering at the City and Guilds (Engineering) College.

The Cornwall County Council gave assent on Friday to a scheme for the purchase at about £7,500 of Watergate Bay Hotel 2½ miles from Newquay, and adjoining land, for the purpose of providing a tuberculosis sanatorium for Cornwall.

The town council of Burton-on-Trent has decided to increase the salary of the gas manager (Mr. Ramsden) from £200 (and emoluments) to £225 for the present year, and in sums of £25 for the years 1914-15, making at the end of that period £275.

New elementary schools in Hordern-road, Wolverhampton, were formally opened by the Mayor on Friday. The schools, erected on the pavilion plan, have been designed to accommodate 400 boys, 400 girls, and 300 infants, and the total cost is £13,375.

The public works committee of the Senate of the State of Buenos Ayres has approved a Bill providing for the construction by the Government of the province of a railway system, connecting La Plata, Bahia Blanca, Buenos Ayres, Sierra, Chica, Olavarria, and Mar del Plata.

The death took place suddenly, at Morecambe, on Friday, of ex-Alderman John Gardner (51), contractor, for many years a member of the Morecambe Town Council and the old local board. He opened out the Regent Park Estate, and superintended the construction of the Morecambe Sewerage Scheme. He erected the Alhambra Palace and other public buildings.

The White Paper on Unemployment in 1912-13 (for the year ended March 31 last), issued on Friday, shows a decrease of applications for relief of 18.2 per cent. throughout England and Wales, and of 22 per cent. in London. Out of the 30,662 cases entertained throughout the country, 14,315, or 46.7, related to general or casual labour, and 6,225, or 20.3, to the building trades.

A special service was held at Great Witley Church on Sunday, at which the Bishop of Worcester dedicated a new reredos. The reredos was designed by the Countess of Dudley, and the work has been carried out in Venice. The reredos is composed of gilt mosaics. In the central panel a large cross in red mosaics is introduced, relieved at each corner with sheafs of Madonna lilies, and in the centre of the other panels a massive sheaf of Madonna lilies is worked.

The great stores of the Hudson Bay Company at Calgary were formally opened on Monday by the Lieutenant-Governor of Alberta. The stores, which are the finest in Canada, occupy a frontage of 250ft. on one of Calgary's principal business corners. The total area occupied by the six floors is 32,500sq.ft. The structure is built of solid steel, with white terracotta facing, and contains a children's nursery and playing-ground, a rest-room, a rendezvous, a restaurant, and a café. The cost of the building was £250,000 sterling.

Several carved stones, which are believed to have belonged to the ancient church of Addingham, in Cumberland, or to have been used in the burial-ground, have recently been recovered from the bed of the River Eden. The church and burying-ground were submerged at a remote and unascertained period; but the human bones and fragments of masonry found from time to time in the river bank and bed prove the verity of the tradition. One of the stones first recovered seems to be the original base of an ancient cross now standing in Addingham Churchyard. The cross, which probably dates from the ninth or tenth century, was itself recovered from the banks of the Eden some generations ago. Another stone, 6ft. 4in. in length, has the carving of a cross and a sword still plainly visible.

PROFESSIONAL AND TRADE SOCIETIES.

CAMBRIAN ARCHÆOLOGISTS AT DEVIZES.—The annual business meeting of the Cambrian Archæological Association was held at the town-hall, Devizes, on Friday, under the presidency of Professor Boyd Dawkins. Lord Tredegar was elected as a member. Dolgelly was selected as the place of meeting in 1914. The Rev. Canon Trevor Jones, who has been hon. secretary for thirty-five years, resigned, and was accorded a hearty vote of thanks for his past services. Mr. T. E. Morris, of Dolgelly, was selected in his place. A grant was made of £25 out of the accumulated capital of £615 towards the cost of the excavation at Old Sarum, a prehistoric camp which the members had had the opportunity of seeing that day. There was some opposition to this on the ground that the funds of the society should be spent for work in Wales, but the recommendation of the committee was carried by an overwhelming majority. The president, Sir Henry Howorth, and other speakers, including Miss Allen, who has attended sixty-seven meetings of the Cambrian Association, paid warm tributes to the mayor and corporation of Devizes, and to the local hon. secretary, Mr. B. H. Cunnington, for the arrangements made for the meetings, which were described as the best and most interesting in the history of the society. Thursday's excursion had embraced Devizes Castle, the churches, museum, and Bradford-on-Avon, where the old Saxon church, lock-up, tithe barn, were inspected and described by Mr. Harold Brakspeare, Mr. W. Butcher, Mr. Cunnington, and others.

THE LONDON ASSOCIATION OF MASTER DECORATORS.—The fifth annual meeting of the London Association of Master Decorators was held at the Holborn Restaurant on Thursday, August 7, with Mr. John Anderson, the retiring president, in the chair. During the past year thirteen new members have joined the association, as against eight for the corresponding period a year ago. Mr. Fred Dakin was elected president, and Messrs. C. E. Wilkinson and T. S. Rowden vice-presidents. Mr. J. J. Honeychurch was re-elected treasurer.

SUFFOLK INSTITUTE OF ARCHÆOLOGY.—On Friday in last week the members of the Suffolk Institute of Archæology and Natural History paid their first visit to the town of Thetford. The Abbey ruins, situated close to the railway-station, were first inspected. These ruins are the remains of the fine Cluniac Priory of St. Mary, one of the five largest monasteries of that order in England. The Priory was founded by Roger Bigod, in 1104, on the Suffolk side of the river; but in 1107 a larger site was secured on the Norfolk side, the site of the present ruins, and the foundation-stones laid in that year by Roger Bigod and Abbot Stephen. In 1114 the monks took possession of their new priory. The monastery was one of the last to be suppressed in England, this taking place in 1540. The Abbey gate, which is in the Perpendicular style, is of Late 15th-Century work. It is 36ft. square and 42ft. high. The abbot's fish-pond also remains. The next visit was to the Guildhall to view the corporation regalia, etc. Here they were welcomed by the mayor, the deputy-mayor, and the deputy town clerk. Alderman Millington said the two silver maces dated from the reign of James I., and bore the arms of England. In the reign of Charles II., Sir Joseph Williamson, a great benefactor of Thetford, presented the corporation with the handsome sword and mace. The mace was an almost exact copy of that in the House of Commons, and like that belonging to the corporation of Yarmouth. The salver and loving-cup with cover were presented by James Sloan in 1698, and the silver-mounted staff was added to the regalia in 1800, when the Guildhall was restored. In modern times, after the restoration of the town hall, Mr. Walter Fison, the then mayor, presented the corporation with the mayoral chain. The party proceeded to view the old cathedral walls and the Boys' Grammar School. On the site of the school, before the Norman Conquest, there stood the parish church of St. Mary the Great, which was rebuilt in 1078 by Bishop Herfast, and converted into a cathedral. The See was removed to Norwich in 1094, after which the site was bought by Roger Bigod, who built the small priory near by for Cluniac monks. Later it passed into the possession of the Dominican Order of Black Friars, who held it till the Dissolution. The chief of the remains of the ancient buildings on this site is a fine arch in the Boys' Grammar School. Leaving the Grammar School, a visit was paid to the ruins, on the Brandon-road, of the Priory of the Canons of the Holy Sepulchre, founded by William, third Earl Warrenne. The old tithe-barn was carefully examined, as was also the site, just opposite, of St. John's Hospital and Burial-ground for Lepers. Great interest was evinced in the font, archway, and tombs of St. Mary's Church. Many came to the conclusion that the carving round the top of the font was modern. The next visit was to the gasworks, where St. Edmund's Church once stood, and where was seen a fine stone coffin, discovered in a garden, only about 18in. deep, in July, 1907. The coffin is 6ft. 10in. long and 2ft. 7in. wide at the head, and contains the skeleton of a man of 6ft. 1in. The next visit was to the old Nunnery, now converted into racing stables. A Norman arch is still retained in perfect state inside. The party passed over the Nuns' Bridges, the site of the famous ducking stool, where scolding wives at one time had their tempers cooled; and thence on to the brewery, where they were enabled to view the home of the Grey Friars. Built into the wall in an upright position is to be seen a stone coffin. The King's house, the one-time Royal home of James I., was next visited. In the evening Miss Nina F. Layard, F.L.S., of Ipswich, delivered at the town-hall a lecture on "Prehistoric Workshops," and Mr. V. B. Redstone, of Woodbridge, one on "Suffolk Castles in History." Both lectures were illustrated by lantern-slides. On Friday, Euston Hall, the seat of the Duke of Grafton, was visited.

The French Government has offered a granite statue of Victor Hugo to be erected in Guernsey, where Hugo wrote many of his works. The statue is by the well-known sculptor Jean Boucher.

The old Church of St. Saviour, Sunbury-on-Thames, is to be used in future as a parish room, a new church having been erected. It is also to be utilised as a club-room for men and boys, while mothers' meetings and girls' sewing classes are also to be held there.

The London County Council are about to commence the electrification of the tramway track in New North-road, Hoxton. While the work is in progress, the Shoreditch Borough Council will take the opportunity of repaving the carriageway between the Sturt Arms and the canal bridge with Jarrah wood blocks, at an estimated cost of £5,000.

The funeral took place on Thursday in last week, at the New Cemetery, Tunbridge Wells, of Mr. John Coad, aged 67, whose death occurred at his residence, Essendine, College-road, Maidstone. The deceased was formerly a well-known local builder, and a member of the town council of Tunbridge Wells. He retired from business nine years since, and soon afterwards removed to Maidstone.

At the meeting on Saturday of the Worcestershire Education Committee, the general purposes sub-committee submitted a report upon school accommodation in Bromsgrove, and recommended that a new infants' school for about 200 be built near Stourbridge-road council school, and that a new school for about 400 children (about 250 mixed and 150 infants) be provided on a site to be selected towards the south end of Bromsgrove. The recommendations were adopted after a discussion and division.

On Thursday, the 14th inst., at the Whitehaven Union Workhouse, the new engineering scheme was formally inaugurated in the presence of a large gathering of guardians and their friends. The whole of the work, comprising steam-generating plant, centralised heating and hot-water service installations on the forced circulation principle, also bathing and disinfecting appliances, has been carried out from the designs and under the superintendence of Messrs. Beswick and Davis, consulting engineers, of Whitehaven.

Building Intelligence.

NEWCASTLE-ON-TYNE.—Two new cinemas are being built in this city: one, the Queen's Hall, at the bottom of Northumberland-street; the other, the Grainger Theatre, in the street of that name. The Queen's Hall, which is nearing completion, has entrances and exits in Northumberland-street, Northumberland-place, and Lisle-street. The seating accommodation has been designed on roomy lines, and the best parts of the house are furnished with armchairs in red plush, harmonising with an interior which is outlined in white and biscuit-colours. There will be accommodation for 1,500 persons, and the floor will be covered with carpets in two shades of crimson. In effect, the French style has been adopted. The auditorium is reached from the entrance-hall, and a broad marble staircase gives access to the circle, which is at one end of the building, while on either side there is a promenade space fitted with circular bays. The floors of the principal entrance and lounge are in terrazzo and mosaic, and the walls are of panelled oak and marble. The arched ceiling of fibrous plasterwork is embellished with heavy cornices and arched girders in the same material. Messrs. Hope and Tasker, New Bridge-street, Newcastle, were the architects.—The Grainger Kinema is being built at the rear of premises utilised for business purposes. It will have two entrances from Grainger-street, the principal of which will be 23ft. in width, executed in Portland stone, with flanking Doric columns in light-grey granite. The theatre proper is to be Greek in treatment. It will be surmounted by a flat ceiling, with three central domes, the height of which from the floor will be 38ft. The walls will be treated in panels and columns, and here and there there will be figures of life-size, with interspersed grilles. The proscenium will entirely fill one end of the theatre, and will be flanked by four Doric columns, and surmounted by a group of statuary 20ft. in length by 5ft. in height. Seating accommodation will be made for 1,000 persons. Mr. Percy Browne, Pearl Buildings, Newcastle, is the architect.

SOUTHAMPTON.—On Wednesday week the Mayor of Southampton laid the foundation-stone of the new fire-station to be erected in the suburb of Shirley, on the old Clock House site. The new station, which is to be erected from the plans prepared by the borough surveyor, Mr. J. A. Crowther, to cope with the growing needs of the Shirley district, provides for a ground-floor engine-room 36ft. by 22ft. to house an engine, and on the first floor a duty- and recreation-room attached. The building will be fitted with automatic quick-opening gear to the front door, and a sliding-pole from the first to the ground floor. The contractors for the works are Messrs. A. E. Jukes and Son, of Freemantle, and the cost of the building will be about £1,100. The old clock which was a feature of the Clock House will be incorporated in the frontage of the new building.

A new Roman Catholic school at Camberwell, S.E., built at a cost of £10,000, will be blessed and opened by the Bishop of Southwark early in September.

The new tramway depot and offices at Barming, built for the town council of Maidstone, were formally opened by the mayor of that borough on Friday.

We are asked to say that, when giving the description of the Royal Colonial Institute, Bristol, in our issue of August 8, it should have read that the design and plans were prepared by Norman G. Bridgman, A.R.I.B.A., and Walter H. Bridgman, M.S.A., being the firm of Bridgman and Bridgman, architects, of Bristol, Torquay, and Paignton.

A stained-glass window has just been put in the Church of St. Mary the Virgin, at East Haddon, in memory of the late Lieutenant J. N. S. Blacklock, who died last year in India. The window, which is the work of Messrs. Kempe and Co., of London, has three panels representing three saints, St. Michael being in the centre, and St. George and St. Alban being on the left and right respectively.

Engineering Notes.

LONGFORD BRIDGE, MANCHESTER.—An improvement on the main highway from Manchester to the South is now being undertaken in the widening of Longford Bridge, which spans the Bridgewater Canal on the Chester road at Stretford. The bridge, which is approached on either side by a gradient, is too narrow to accommodate safely the increasing traffic. When the reconstruction is completed, there will be a double tramway track instead of the present single one, a dangerous curve will be done away with, and the width will be increased from 36ft. to 50ft. The bridge was built, under an Act of Parliament, by the Duke of Bridgewater, in 1760. To-day, according to Mr. Ernest Worrall, who, as the engineer and surveyor to the district council, designed the alterations to the bridge—20,000 vehicles cross it every week. The cost of the improvement will be £3,000.

It is proposed to carry out works of restoration at the parish church of Waltham Cross, Herts, at a cost of £800.

The town council of Hull have decided to extend the cattle-market by the purchase for £6,000 of properties adjoining it.

The Huddersfield Education Committee have given instructions to the borough engineer to prepare a sketch plan and estimate for an open air school on the Rowds Wood estate for 100 children, the scheme to include residential arrangements for a portion of the accommodation.

The Welland Canal, connecting the St. Lawrence with the Great Lakes, is undergoing improvements of such magnitude that they will total about 2,000,000dol. per mile. The canal, which is 25 miles in length, traverses a lofty divide, over which it is necessary to raise vessels to a total vertical height of 326ft.

H.M. Trade Commissioner for South Africa reports that a firm of agents in Johannesburg and Rhodesia, in direct touch with the building trades, is open to consider agencies for building and mining material on behalf of United Kingdom firms. Any further communications regarding the inquiry should be addressed to H.M. Trade Commissioner, Norwich Union Buildings, Capetown.

The altar of Sandgate parish church, Kent, has been provided with a chalice and paten for use at the Holy Communion. The vessels are after a design supplied by Mr. Temple Moore, F.R.I.B.A., and have been wrought by the members of the Duchess of Sutherland's Cripples' Guild. All the work, from the beaten cup to the pierced work of the chalice-stem and the enamelled knob of the same, has been worked by hand.

The demolition of a tumble-down one-story building at Barnack, known as "Noah's Ark," removes a link with the past, as the old building was traditionally believed to have originally been the tool-shed of the quarriers of the famous Barnack rag. Another old building in the Walcot plantation, just beyond the boundary wall of the "Hills and Holes" is reputed to have been the pay-office of the clerk of the works. On the site of the house just pulled down the owner is having erected a small house of Bytham brick.

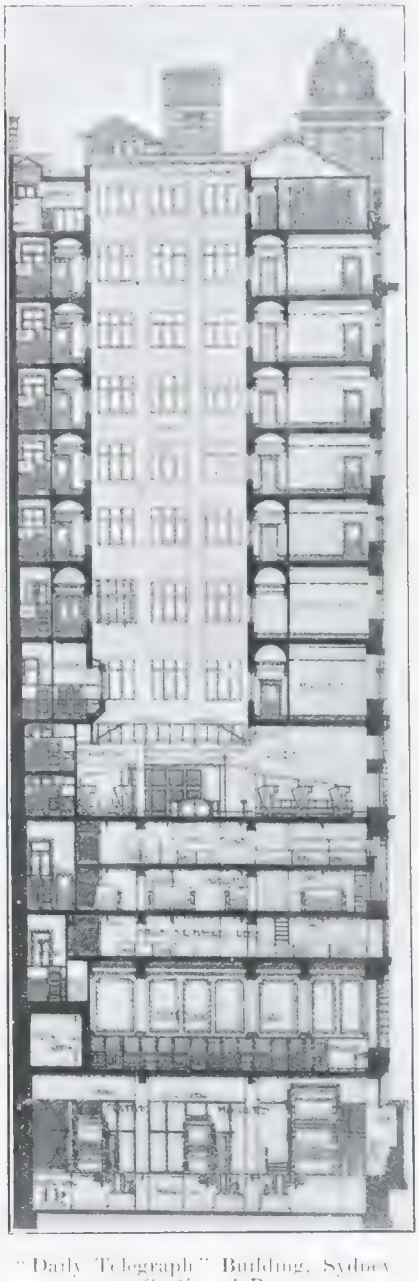
At the meeting on Monday of the harbour board of Fraserburgh, Provost Finlayson announced the receipt of a letter from the Development Commissioners, intimating that they had decided to offer a free grant of £20,000, and a loan of £20,000, repayable in thirty years at 3½ per cent., repayment to commence three years hence. Both sums will be applied to the completion of the harbour extension scheme at Fraserburgh, on which fully £100,000 has already been expended.

The Great Eastern Railway Company, who own the docks, markets, piers, and harbour generally at Lowestoft, in response to a resolution by the town council last February, contemplate extensive improvements in the inner harbour, which will commit them to an expenditure of £40,000. The works are to constitute "an entire scheme," to afford more berthing room. The railway company have just completed the widening of the South Pier at Lowestoft, together with the provision of a new entrance-house. The pier has been doubled in width, and a continuous glass shelter has been constructed along the side next Kirkley.

Our Illustrations.

NEW BUILDING FOR THE "DAILY TELEGRAPH," SYDNEY, N.S.W.: SELECTED DESIGN.

A competition was held some months ago for architects' plans for this great undertaking, and the assessors selected the design of Messrs. Richardson and Marks, of Pitt-street and Martin-place, Sydney, N.S.W. We now illustrate their adopted design. The working drawings for the building are completed, and the work will be commenced forthwith. The ground and first floor façades will be faced with Trachyte, the doorways being of polished Trachyte. The upper part of the fronts above the first floor level are to be built of Pyrmont Free Stone. The mansard roof is to be constructed of steel, and will be covered externally with green slates. Reinforced concrete will be employed for the flooring, and marble is to be used for the pavings, and also for the mural decoration. The two small perspective views here reproduced furnish a good idea of the internal treatment of the board-room and advertising hall. The cost of the building is estimated at £140,000. We include a view of the exterior, and an elevation of the larger front, with a section on the same double page plate, showing the several floors, and also indicating the machinery equipment.



"Daily Telegraph" Building, Sydney. Section A B.



THE ADVERTISING HALL, "DAILY TELEGRAPH" BUILDING, SYDNEY.

which will be designed in the latest scale and style. The four plans given illustrate the convenient arrangements of the four lower stages, and above these levels the other floors are equally well laid out, though in detail, of course, they differ very considerably. They are all in strict accord with the purposes of a great printing office conducted on up-to-date principles. The smaller section included with these brief notes further illustrates the internal contrivance, and the whole proposal demonstrates the go ahead character of newspaper enterprise in New South Wales.



BOARD ROOM, "DAILY TELEGRAPH" BUILDING, SYDNEY, N.S.W.
Messrs. Robertson and Marks, Architects.

PULPIT, ALL HALLOWS' CHURCH, SOUTHWARK, S.E.

We illustrate the pulpit recently erected from the designs of Messrs. Chas. Heathcote and Sons, architects, of London and Manchester, at this well-known church. This forms a portion of the work of renovation and re-decoration carried out under them. The pulpit has been executed by the Bromsgrove Guild. It is of oak, resting on a Bath stone pedestal, with handrail, newel, and stair rods all of bronze. In place of the usual Evangelists, where figures are introduced, four modern preachers have been portrayed. In order to represent the portraits and vestments of these figures, great care has been exercised. The subjects are King of Lincoln, Pusey, Keble and Liddon. In addition to the new pulpit, a completely new system of heating has been installed.

INNER HALL, ELLENBOROUGH HOUSE, ROEHAMPTON LANE, S.W.

This hall and other alterations have recently been completed for Mr. Hugh Campbell, jun. The works consist of the entire renovation of the interior of the house, with the addition of an enlarged vestibule, so designed as to leave the old dome. A new inner hall has eight Ionic columns; the walls are panelled, modelled plaster decoration being introduced. The palm house, 35ft. by 17ft., is now being used as a lounge, with a new marble floor designed in Sicilian and Belgium black marble. A complete new system of electric wiring, drainage, sanitation, and heating was installed. The general contractor for the work was Mr. J. Carmichael. The architect is Mr. P. Estcourt Holland, A.R.I.B.A., of John-street, Bedford-row, W.C.

NEW THEATRE AND BALLROOM, THE SMEDLEY HYDRO, BIRKDALE.

The two accompanying plates show the interior of the new ballroom and theatre erected at the above. The architect is Mr. R. Hermon Crook, M.S.A., of Bolton. The room has an entrance at each end, so that it is easily cleared. The chairs when not in use are stored under the stage, and are easily accessible. Messrs. Hughes and Stirling, of Bootle, were the general contractors.

THE REGENT PICTURE HOUSE, BRADFORD.

This new picture hall is about to be built on a site with a 72ft. frontage to North Parade, near the centre of the city, and opposite the Theatre Royal. The front has been designed in a Renaissance treatment, with a central pediment and Ionic entablature. Local stone will be used. The central entrance opening leads into a large foyer. This gives access to the main hall, staircases, and a specially-constructed roof-garden, which forms part of the café, as shown by the marginal plan. The cafés and lounges are arranged on the first floor, over which are placed the smoke-room and kitchens. The main hall and balcony will seat about 1,400. Exits have been obtained at either end and on both sides. The architect is Mr. H. W. Rogerson, M.S.A., of Cheapside, Bradford.

The total estimated value of the buildings for which permits were issued in Winnipeg during the half-year ended on June 30 was 10 250,000dol

The work of restoring the famous parish church of Ashbourne has, during the past few weeks, made substantial progress under the joint supervision of Sir Francis Fox and Sir Thomas Jackson.

The Belfast Cathedral Board have succeeded, by the generosity of half a dozen members, in purchasing a number of houses in the immediate vicinity of the Cathedral. The clearing of the space thus afforded will much enhance the appearance of the cathedral.

A Local Government Board inquiry was held at the Village Hall, Penshurst, by Mr. W. M. Crofts, M.I.C.E., on Thursday in last week, into the application of the Sevenoaks Rural District Council to borrow a sum of £1,525 for the purpose of supplying water to Fordcombe.

The health committee of the corporation of Portsmouth have passed plans for the extension of the infectious diseases hospital at an estimated cost of £25,000. Three new blocks are proposed, with administrative quarters in the centre, and accommodation for 84 additional beds.

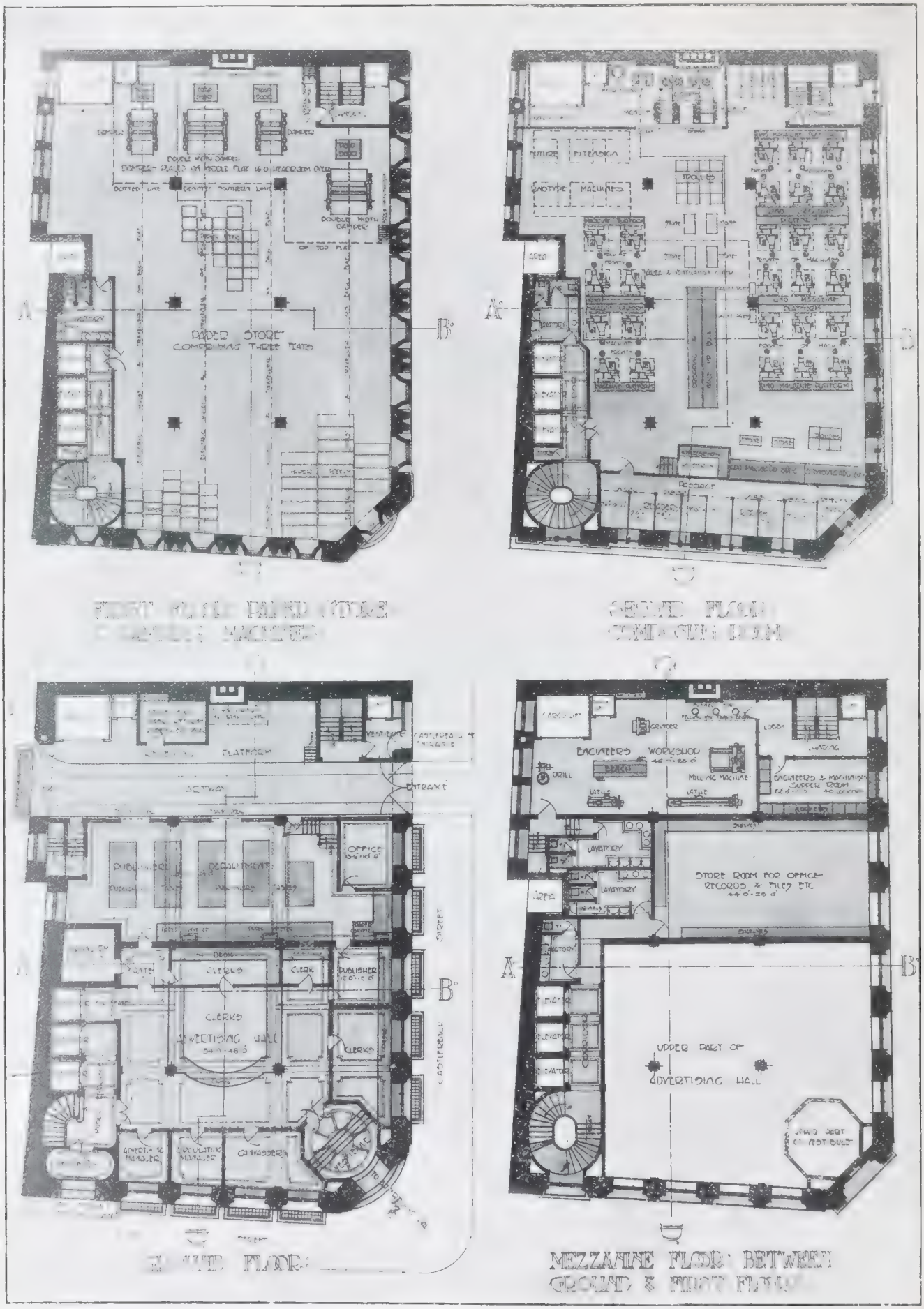
Alderman David Milner, of Danefield, Pollard-lane, Bradford, a well-known member of the Bradford City Council, until recently in business as a builder, who started life as a quarry delver, and who died on April 19, aged 75, left estate of the gross value of £38,457, of which £2,467 is net personalty.

The Monmouthshire County Council have increased the salaries of Mesrs. G. N. Wade, C. P. McBean, A. H. Morgan, and W. P. Jacob, assistant surveyors, each to £230 per annum; and that of Mr. S. A. Bennett, assistant surveyor, to £250 per annum on his appointment as deputy surveyor.

The governors of the Royal Hants Hospital at Winchester adopted at their last meeting plans for the improvement of that institution at an estimated cost of £5,750, of which £5,000 will be met by a legacy. The items include additional floor to nurses' block, operating theatre, kitchen and sculleries, and lift.

The corporation of Hartlepool has in contemplation a housing scheme which is estimated to cost something like £40,000. There exists in the centre of the town a slum area between four and five acres in extent. This it is proposed to clear completely, and, in place of the present warren of courts and alleys, to lay out and build streets of modern dwellings. The plans that have been prepared provide for the erection of about seventy houses of various sizes.

The Bristol Chamber of Commerce, in conjunction with the Bristol and District Timber Trades Association, approached the docks committee some while ago with reference to the need of greater facilities for discharging and receiving cargoes of timber at the city docks. The deputation will wait upon the docks committee on September 1, to discuss the matter, and will consist of the president and two vice-presidents of the Chamber, and three representatives of the Timber Trades Association, Mr. A. C. May, Mr. Louis Bamberger, and Mr. Thomas Hill.



"DAILY TELEGRAPH" NEW BUILDING SYDNEY, N.S.W. SELECTED DESIGN
Messrs. Robertson and Marks, Architects



"DAILY TELEGRAPH" NEW BUILDING, SYDNEY: S



ELEVATION TO CASTLEREIGH STREET.

CTED DESIGN.—Messrs. ROBERTSON and MARKS, Architects.



Bedford Le Mere, Photo.

NEW PULPIT, ALL HALLOWS CHURCH, SOUTHWARK, S.E.

Messrs. CHARLES HEATHCOTE and SONS, Architects.





INNER HALL, ELLENSBOROUGH HOUSE, ROEHAMPTON LANE, S.W.
Mr. P. Estcourt Holland, A.R.I.B.A., Architect.



Thomas Lewis, Photo.

THEATRE AND BALLROOM, THE SMEDLEY HYDRO, BIRKDALE.
Mr. R. HERMON CROOK, Architect.



Theatre Towers, Photo.

THEATRE AND BALLROOM, THE SMEDLEY HYDRO, BIRKDALE.—Mr. R. Hermon Crook, Architect.



REGENT PICTURE HALL, BRADFORD. Mr. H. W. Rogerson, Architect.

Correspondence.

COMPETITIVE TENDERING.

To the Editor of the BUILDING NEWS.

SIR, I am obliged by your reference, under "Currente Calamo," in the last issue of the BUILDING NEWS, to my letter to *The Times* respecting competitive tendering; but I am sorry to hear that the system I described is not adopted more than it apparently is.

I had not noticed the paragraph in the BUILDING NEWS of the 1st inst., setting forth the resolution of the National Federation of Building Trades Employers, which was to be sent to the Royal Institute of British Architects, with reference to the practice in regard to opening tenders. When the matter comes officially before the Council, I hope to be able to refer to this subject, which is, I think, a very important one.

At the present moment I see no reason whatever why it should not be considered proper professional practice to invite all the tenderers to attend at the opening of the tenders, so that the respective amounts may be announced and noted by those present.

I am, etc.,

WM. WOODWARD, F.R.I.B.A., F.S.I.

13, Southampton-street, Strand,
August 20.

[It is a very important one, and we are sorry to have to emphasise it again elsewhere in this issue.—Ed. "B.N."]

Intercommunication.

REPLIES.

(1130.—BREWERY.—I do not think querist will get many replies. First, because the work of a brewery architect is more of a speciality than that of any other member of the profession, and next, because the location of the plant must to some extent be contrived so as to suit the needs of the client. There is, however, a good double page illustration in the BUILDING NEWS of July 27, 1900, giving view and plans of an 18-quarter brewery at Lewes, of which J. McMullen Brooks was the architect, and Messrs. G. J. Worssam and Son the engineers, which may be found useful.—Kappa.

Additions are about to be made to the Royal Victoria Hospital, Belfast, as a memorial to King Edward VII. The architects are Messrs. Young and Mackenzie, of Belfast.

A Local Government Board inquiry has been held at Walthamstow, into an application of the urban district council for permission to borrow £2,219 for widening and improving Forest-road.

Subscriptions are being raised for erecting in the burgh of Hawick a Mercat Cross, to celebrate the 400th anniversary of the defeat in 1514, after the battle of Flodden Field, of a body of English raiders at Hornshole by Hawick "callants." The memorial committee have issued an invitation to sculptors "and others" to submit designs for the proposed cross.

The Leeds Corporation Development Committee have discussed a resolution in favour of a municipal housing scheme, which was referred to them by the city council. The committee resolved to get information as to the number of empty dwelling-houses in the city suitable for artisans, and also to have laid before them the financial result of the houses previously built by the council.

The cottage home extension erected in Chatham for the Medway Board of Guardians were formally opened on Tuesday. The children's homes were built in 1903, when twelve cottages and schools and a staff-house were provided at a cost, including the land, of £23,300. The increase in the number of children having made an extension necessary, four additional cottages and a receiving home have been built, at an outlay of £8,205, making the total expenditure £31,505.

A special meeting of the town council of Newport, Mon., was held on Tuesday, to consider the question of widening the station approach in High-street, and the acquisition of properties to enable the work to be carried out, and the prices asked for them. The properties concerned are the Savoy Hotel on the one corner, and the Cinema Theatre on the other. Eventually it was decided by 15 to 8 to recommend the corporation to purchase the Savoy for £26,000 and the Cinema for £17,850.

LEGAL INTELLIGENCE.

BUILDER AND THE INSURANCE ACT.—At Doncaster Magistrates' Court on Monday, Joseph Lister, builder, of Town Moor-avenue, Doncaster, was summoned on thirty-one counts for having failed to pay the Insurance Act contributions out of his employees. The employer, it was asserted, had understood that all was well as the deduction was being made from his wages. One line of 50s. was imposed, and costs in each case, £9 5s. in all.

CORPORATION'S OBJECTION TO UNDERGROUND ELECTRIC MAINS.—A dispute between the corporation of Bromley, Kent, and the West Kent Electric Co., Ltd., with reference to a proposal by the company to lay underground electric mains, was the subject of a public inquiry by an Inspector of the Board of Trade (Mr. W. Patchell) at the Surveyors' Institute, Great George-street, Westminster, recently. The local authority was represented by Mr. W. Terry Harrison, B.A., solicitor to the corporation, and deputy town-clerk, Mr. C. M. Pitman appearing for the company. Mr. Pitman said that by their Act of 1902 the West Kent Electric Company, Ltd., were empowered to supply electricity throughout a large area in the Beckenham and Bromley district. That company would not be the distributors, but would supply current in bulk to the Bromley Electric Light Company, who would supply the public. The mains would run through Lewisham, along the Bromley-road, thence round Beckenham, Hayes, Orpington, Chislehurst, and eventually back to the South Metropolitan mains. The inquiry was held under Section 42 of the Kent Electric Power Act, which stated that mains could be laid under such streets as should be agreed upon by the company and the local authority, and if they could not agree, then the matter was to be referred to the Board of Trade. If the local authority objected to a route, they could propose an alternative route, which should be reasonable, and incur no greater expense. One of the objections raised was that several of the roads had pipes and cables under them; but, said Mr. Pitman, as compared with London, they were absolute deserts, and no engineering difficulties would be experienced in laying the mains. Other routes were suggested by the corporation, but they were quite impracticable. —Ald. R. W. James, A.M.I.C.E., an ex-mayor of the borough, and chairman of the law and general purposes committee, said there were two features of objection to the company's proposed route through Bromley High-street—the physical obstructions under the footpath, and inconvenience to the public if the path were interfered with from one end to the other. A scheme was got out under which the various services under roads and pavements—gas, water, electricity, telegraph, and telephone—were given a definite location by the Highways Committee in 1899. Both sides of High-street, particularly that portion from the Market-square to the public library, were quite full up now, and the pavements were narrow. In order to get over the difficulty, he suggested the College-road route. Another objection to the High-street route was that the council had before them a proposition to lay a concrete bed and wood pavement. Other evidence was called on both sides, and Mr. Patchell said he would lay his report before the Board of Trade, which would give its decision in the course of a few weeks.

Mr. E. E. Riddell, sanitary inspector to the Wath-on-Dearne Urban District Council, has been appointed inspector of nuisances and building inspector to the Ruislip-Northwood Urban District Council, at an inclusive salary of £140 per annum.

A Home Office industrial museum is about to be built in Horseferry-road, Westminster, for H.M. Office of Works. In the Estimates for Public Buildings Act, which received the Royal Assent on Friday, the sum of £25,000 was allocated for this building, for which tenders are now being invited.

Mr. Vincent Astor is having plans prepared by Mr. Charles A. Platt to erect a twelve-story commercial building on the large plot from 2 to 16, West 33rd-street, opposite the Waldorf-Astoria Hotel in New York City. The plot is now occupied by eight four- and five-story houses converted into business uses. The cost of the operation will be about 700,000dol.

The new Northumberland County Council School at Stakeford, which has been built at a cost of £5,325, and which provides accommodation for 329 children, was opened on Tuesday. The outlay on the site was comparatively high, so that the cost per place is £13 9s. The architect was Mr. Forrest, of Newcastle-on-Tyne, Messrs. Tait and Co. were the builders, and Mr. W. Simpson was the clerk of works.

WATER SUPPLY AND SANITARY MATTERS.

EFFECT OF SEWAGE EFFLUENTS ON RIVER WATER.—A Blue-book was published on Monday, containing an appendix to the eighth report of the commissioners appointed to inquire and report what methods of treating and disposing of sewage (including any liquid from any factory or manufacturing process) may properly be adopted. The facts are embodied upon which are based the recommendations of the Royal Commission on Sewage Disposal, as set out in their eighth report, and the results are given of stream observations carried out from 1909 to 1912 by Dr. G. McGowan, Mr. Colin C. Frye, and Mr. G. B. Kershaw. The general bacteriological results showed that the highest number of bacteria counted in one day was 195,000,000 found in septic tank liquor at St. Neots. The second highest number was 77,400,000 in crude sewage at Wye. The smallest number discovered was 250 at Fools Dyke Beck, Barnoldswick, and one of the points brought out by the investigation was the striking immediate effect a sewage pollution has on a river water even when the dilution is considerable. In other words, the access of a sewage pollution to a comparatively large volume of river water alters markedly the bacterial composition of the mixed liquids, the reason being that even a well-oxidised sewage effluent is apt to be much more impure bacteriologically than a river water of only average purity. The results show that sewage pollutions have a most serious immediate effect bacteriologically on the quality of river water, and that although improvement takes place fairly rapidly, the river fails in most cases to revert to its original state within the limits of distance which, in this country, would be likely to occur before fresh pollutions occurred.

The urban district council of Bolton-on-Dearne have resolved to advertise for competitive design for public baths, and to offer premiums to the amount of about £50.

A brass eagle lectern, 6ft. in height, has been presented to the parish council of Knaresborough. It has been made by Messrs. Cox, Lewis, and Buckley, of London.

At a meeting on Monday of the Dundee Harbour Board, it was stated that new works sanctioned and in progress would involve an expenditure of at least £150,000 within the next three years.

The sum of 300,000dol. was appropriated by the United States Congress at its last session for a modern hospital building for women. The proposed structure is to be erected on the site of the present Columbia Hospital at Washington, D.C. Mr. Nathan C. Wyeth, architect, is preparing the plans.

The Holywell Board of Guardians went on Friday to the site of the new union infirmary, near the workhouse, to witness the laying of the foundation-stone by Mrs. Johnson Jones, of Pistyll, a lady member of the board. The building is to cost, with furnishings, a sum of about £7,500. Messrs. Davis, of Newgate-street, Chester, are the architects.

Considerable progress is being made with the excavations on the site of the Roman city at Kenchester, near Hereford. The city covers an area of twenty-five acres; but, so far, only three-quarters of an acre has been explored. The work is being undertaken by the Woolhope Naturalists' Field Club. The excavations have recently laid bare some finely-constructed walls of buildings, probably of the third century. A quantity of interesting ancient pottery manufactured near the Rhine, in Germany, has been discovered. A valuable recent find is a large mosaic pavement of rich geometrica design, but not intact. This is the second mosaic pavement to be found. The Roman altar which was recently discovered at Kenchester has been placed on view at the Hereford Free Library.

Mr. Burns, at the request of the Prime Minister, has consented to preside at a conference of local authorities and others interested in the improvement of arterial road communication in Greater London. Mr. Burns proposes that the conference should take place in October; but the precise date has not yet been fixed. The Local Government Board invites local authorities to be represented at the conference, and suggests that not more than one or two persons representing each authority should attend. Among the professional bodies who have accepted invitations to send delegates are the Royal Institute of British Architects, the Surveyors' Institution, and the Municipal and County Engineers' Institution. A further circular will be issued when the date, time, and place for the conference have been fixed.

Our Office Table.

The West Riding County Council are erecting at Highfields, a mining village near Doncaster the first of a new type of "open air" school building. This type, which has been designed by the county council's education architect (Mr. John Stuart, L.R.I.B.A., of the County Hall, Wakefield), will supersede the quadrangle type of school building now being erected in the Riding. It retains the quadrangle, but the classrooms are so planned that two sides can be thrown open, and the children work practically in the open air. All the rooms will be grouped around a central open quadrangle, the classroom windows on one side all looking out upon this open space, which is to be laid out with grass plots and gravel-paths. The windows of the rooms are of French-casement type, carried down to floor-level, and so hung as to open and fold outwards. Access to the rooms is given by a corridor with sliding windows from about 18in. above the floor-level running the length of the quadrangle. On the classroom side the corridor is cut off by glazed screens, the lower portions of which provide cupboards and museum cases, while above these are casement windows and hoppered inlets to the full height of the room. All these screens and windows can be so thrown open that the children will be sitting in an open-air shelter. The scheme is on somewhat similar lines to the open-air school at Earswick, Yorks, built from plans by Mr. Raymond Unwin, F.R.I.B.A., at the cost of Mr. Joseph Rowntree, and fully illustrated in our issue of January 31 last.

A deputation of the town council of Glasgow has just reported to that authority on the construction of baths and washhouses as a result of their investigations during visits to institutions in London, Manchester, Birmingham, and Bradford. The committee recommend that wherever possible all the facilities in such buildings should be on the ground floor; that the elevations should be in terracotta brick, with freestone dressings; that the internal treatment of all walls and corridors should be in white glazed brick or tiles; that the floors should be in terrazzo, and the walls and bottoms of swimming ponds in ferro-concrete, with a lining of bitumen, and finished inside with white glazed bricks. The roofs of swimming-ponds should be entirely of ferro-concrete, with a continuous lantern for lighting and ventilation. Ponds constructed as suggested, the committee report, expand and contract uniformly with variations in temperature, and so do not develop fissures and consequent leakage.

The fifty-eighth annual exhibition of the Royal Photographic Society opens at the Gallery of the Society of British Artists, Suffolk-street, Pall Mall, on Monday next. The private view will take place to-morrow (Saturday), from 11 to 6 with a reception at 4 p.m. As in previous years, a series of lantern lectures will be given on Tuesdays, Thursdays, and Saturdays, at 8.30 p.m. The first will be delivered on Tuesday next by Mr. James A. Sinclair, the subject being "A Journey to the Alhambra," illustrated by slides by the late Mr. F. P. Cembrano. Other lectures are: Saturday, August 30, "In the Track of the Romans: First Impressions of Rome and Naples," by Mr. J. Dudley Johnston; Tuesday, September 2, "Fair Lusitania," by the Rev. H. O. Fenton; Thursday, September 4, "Among the Pyrenees," by Mr. R. Gorbold; Tuesday, September 9, "An Ancient Order of Chivalry," by Mr. H. W. Fincham; Thursday, September 11, "The Parthenon of England," by Mr. E. W. Harvey Piper; Thursday, September 18, "Humour and Pathos of the London Streets," by Mr. A. H. Blake, and "Chartres Cathedral," by Mr. Henry W. Bennett.

Considerable progress has been made with the scheme for a garden suburb for Worcester. A site of eleven acres has now been secured between Newtown and Tolladine-roads, behind Shrubb Hill Station. The land lies high, and is near the industrial part of the city. It is proposed that at first only two of the eleven acres shall be developed, the Dean (Dr. Moore Ede) now announcing that there is sufficient capital to do this, or even more. The shares and loan stock, for which application has been received, amount to £3,388. Five blocks of houses of different styles will be erected as a first instalment. The Dean, Lord Cobham, and Mr. Rowe (architect) paid a visit to Bournville some time ago, and the Dean states that he was much struck with some houses of the bungalow type. For such houses there was a demand by old people. An endeavour will probably be made to ascertain whether there is any demand for this kind of dwelling at Worcester. Tenders have now been received from various builders.

The National Trust is seeking to acquire and preserve East Riddlesden Hall, near Keighley. It stands on a knoll overlooking the River Aire, and is now in the occupation of a farmer. It dates from the middle of the 17th century; but while one part is habitable and inhabited, the other part is in a tumbledown condition. Many of the walls are finely panelled nearly to their complete height, and the plaster ceilings are splendid specimens of Jacobean work, in the design of which the Scottish lion is frequently introduced. These portions of the building are in a perfect state of preservation. The old banqueting hall is now used as an outhouse, and the fireplace, with finely-carved pillars and a cornice bearing grotesque Cavaliers' heads, has had built into one corner a modern "copper," where the family washing is done. The National Trust also has an opportunity of acquiring Filching Manor, at Jevington, near Eastbourne. The half-timbered house goes back as far as 1537, and since that date it has been in the possession of well-known Sussex families.

Mr. Henry T. Weyman, of Fishmore Hall, Ludlow, writes to *The Times* stating that some of the 15th-century glass removed by Evans, of Shrewsbury, either from the Cathedral or College at Winchester (which, is not certain) was placed in the chancel windows of Ludlow parish church. In 1878 Archdeacon Lloyd, the vicar of St. Mary's, at Shrewsbury, wrote in a description of his own church, that: "In the adjoining lancet are two figures copied from old glass in the chancel of Ludlow parish church, which was brought early in the present century from Winchester, when Messrs. Betton and Evans, of Shrewsbury, were engaged in filling with modern glass many windows in the Cathedral and College of that city. The figures are those of St. Barbara and St. George." Mr. Weyman points out that the figures of St. Barbara and St. George are still in the window in Ludlow church chancel, and in the same window are also (with others) figures of St. Dunstan, St. Apollonia, St. Leonard, and St. John of Bridlington, which were almost certainly brought from Winchester, while in an opposite window is a figure of St. John which came from the same city.

Among the measures which received the Royal Assent on Friday were the Ancient Monuments Protection Consolidation and Amendment Bill, the Insurance Act Amendment Bill, the Post Office (London) Railway Bill, the Public Buildings (Expenses) Bill, the Public Health (Prevention and Treatment of Disease) Bill all promoted by the Government—and the Local Authorities' Contributions (Crystal Palace) Bill, introduced by Sir E. Coates. The many private Bills also included: Metropolitan District Railway, West Hampshire Water, Metropolitan Railway, Kent Electric Power, Central London Railway, Southampton Harbour, Dover Harbour, London Electric Railway, Metropolitan Water Board, London County Council (General Powers), London County Council Tramways and Improvements, Metropolitan Electric Tramways (Railless Traction), Southend-on-Sea Corporation, Ipswich Dock, Reading Corporation, and City and South London Railway.

According to a patent by C. Keen and J. T. South, 138, Long acre, Westminster, a plaster for internal use on walls, etc., is made from 34 parts of gypsum, 21 of chalk, 5 of river mud or clay, and 40 of sand or ground flint, there being added to every ton of the mixture ¼lb. sodium silicate or potassium alum, 2oz. of sulphur, 1½lb. of molasses, ½ pint of glycerine, ½ gill of acetic acid, concentrated essence of lemon, or cream of tartar, ½lb. of zinc or copper sulphate, and 1lb. of gum arabic or similar vegetable gum. The burnt and crushed gypsum is first mixed with the molasses and alum; the chalk is burnt after being mixed with the sulphur and zinc sulphate; the river mud or clay is burnt sufficiently to remove impurities and is then mixed with the acetic acid and a solution of the gum until it is of a creamy consistency. To this is added sufficient of the chalk mixture to absorb the moisture. The various ingredients are then ground together. For external work, the gypsum is omitted and one gill of paraffin or 3oz. of naphthalene are added to every ton of the mixture.

The exhibit of the United States National Bureau of Standards at the recent Chicago cement show demonstrated the effect of electrolysis on the reinforcing-rods of concrete. The moisture and impurities in the concrete set up local currents in the iron, by which iron oxide is produced. The oxide occupies a greater volume than the iron, and exerts a pressure which eventually cracks the concrete. The amount of pressure was determined by means of a steel cylinder with a bore of 1½in., in which was fitted a steel rod 1in. in diameter, and the space between was filled with cement. This was immersed in water, and the iron core connected to an electric circuit. The expansion of the outer cylinder was measured, and it was found that the oxidation of the iron core produced a maximum pressure of 4,700lb. per square inch.

MEETINGS FOR THE ENSUING WEEK.

Tuesday	Royal Photographic Society. "A Journey to the Alhambra," by James A. Sinclair, F.R.P.S. Gallery of Royal Society of British Artists, Suffolk street, Haymarket. 8.30 p.m.
Wednesday	Institute of Sanitary Engineers. Visit to Marconi's Wireless Telegraph Co.'s Works at Chelmsford. 2.2 p.m.
Saturday (Aug. 30)	Association of Managers of Sewage Disposal Works. Midland District Meeting at Cheltenham.

A factory has been built on the side of Malahet Mountain, in Saanich Inlet, Vancouver, B.C., for the Associated Portland Cement Company, having a manufacturing capacity of 2,000 barrels of cement a day. In the buildings which are now completed ferro-concrete has been employed exclusively on concrete sheet piling. The builders were the McAlpine-Robertson Construction Co.

Torquay Town Council has decided to retain the services of Mr. G. Sleeman, clerk of works at the Pavilion, as building inspector and outdoor clerk of works in place of Mr. J. W. Norman, who has been appointed engineering assistant under the public works department, North Borneo. Mr. Charles Lowe, road inspector from the Aston district of Birmingham, has been appointed highway inspector in the place of Mr. Peter O'Donnell, who has secured the position of road foreman in the road-construction works by the Castlebar Rural Council under the Road Board.

The tender of Messrs. John Mowlem and Co., Ltd., of Grosvenor Wharf, Pimlico, has been accepted by the Port of London Authority for the construction of the foundations of the new head offices on the Trinity-square site. The outlay under this contract for preliminary works will be between £40,000 and £50,000. The extension operations in progress at Tilbury will add 1,612 lineal feet to the south quay of the main dock. In connection with the Royal Albert Dock Extension (South), provision is made for the construction of a dry dock 650ft. in length with a width of 100ft.

M. Ratier, Minister of Justice, and M. Paul Morel, Under-Secretary for the Interior, inaugurated on Friday at Belfort a monument commemorating the three sieges which that town suffered, in 1813, in 1815, and in 1870. The monument, which represents France and Belfort surrounded by the three soldiers who defended it, is the last work of the Alsatian sculptor Bartholdi, who executed the statue of Liberty in New York Harbour, and of the Lion of Belfort in the Boulevard Raspael, in Paris. Bartholdi left only the maquette of the monument, which has been finished by three of his pupils.

Trade News.

WAGES MOVEMENTS

STRIKE IN THE LONDON BUILDING TRADE.—A dispute which promises to be short-lived in the present case at any rate has arisen with regard to the employment of non-unionists in the construction of the new hotel which is being erected for the Strand Hotel Company Limited on an island site between Piccadilly-circus and Golden-square, by Messrs. John Mowlem and Co., Ltd. Among the 350 men employed on the work are about a score non-unionists, and the leaders of the movement for amalgamating the various trade unions in the building industry, who are endeavouring to strengthen their position in London, urged that Messrs. Mowlem and Co. should refuse to employ them. The firm replied to representations made by the union leaders that they should not attempt to discriminate between unionists and others, and that they neither inquired nor cared what organisations their employees belonged to. The builders' labourers therefore struck work on Monday morning, and soon after the joiners, bricklayers, masons, and ironworkers ceased work in sympathy with them, and operations are at a standstill. The managing director of Messrs. Mowlem interviewed the leaders on Wednesday, and, in the course of the day, it was reported that all but sixteen, all but ten men, and, finally, all except one man, had promised to join the organisation of their trade. Yesterday (Thursday), however, it was stated that two gangers had now declined to come in, and the men were accordingly still idle. The prospects of an early settlement are bright.

LABOUR AND WAGES IN JULY.—The Board of Trade report that employment in July continued very good on the whole; but that there was some decline in the pig-iron, furnishing, building, brickmaking, and glass trades. On the other hand, there was an improvement in the iron and steel, tinplate, and pottery trades. The engineering and shipbuilding trades remained very good. It is reported by the Labour Exchanges that there was a continuance of the demand for workmen in the building trades in some districts. Trade Unions with a net membership of 926,787 reported 17,935 (or 1.9 per cent.) of their members as unemployed at the end of July, 1913, compared with 1.9 per cent. at the end of June, 1913, and 2.6 per cent. at the end of July, 1912. The percentage of "insured" workpeople unemployed at the end of July was 3.1, compared with 2.8 at the end of June. The change in rates of wages taking effect in July affected 233,000 workpeople, of whom 229,000 received increases, the net effect of all the changes being an increase of £13,700 per week. These included increases affecting 3,000 building trade operatives at Portsmouth. Cases of conciliation and arbitration dealt with during the month include building trade operatives at Glasgow, Rugby, and Sheffield; contractors' labourers, Portsmouth; and joiners and shipwrights, Southampton.

KIRKCALDY PLASTERERS' STRIKE ENDED.—The Kirkcaldy and district plasterers, who struck work last week, have practically secured their demands. The standard rate of wages in Kirkcaldy was formerly 8d. per hour, and in the district outside the burgh 7½d. per hour. The men asked for a general rate of 9d. per hour, and this has been granted by the employers.

SHEFFIELD.—By arbitration the last of several sectional disputes in the building trade at Sheffield was settled on Tuesday, the plasterers being granted an increase of ½d. an hour, bringing the rate of pay up to 9½d. A special conciliation board has also been established.

SPEN VALLEY PLASTERERS.—The strike of plasterers in the Spen Valley, which had lasted eleven weeks, has been settled, the men agreeing to resume work at ninepence an hour, on condition that they receive another halfpenny increase next June, making an advance of a penny.

The new Roman Catholic Church of St. Joseph, on Potter's Hill, Pickering, is approaching completion, all but the tower and spire being erected. Mr. Leonard Stokes, of London, is the architect, and the builders are Messrs. Oldfield, of Malton.

The commissions for the ten statues of Welsh celebrities, to be placed upon and within the City Hall of Cardiff, have been awarded to Sir W. Goscombe John, R.A., and Messrs. T. M. Crock, E. G. Gillick, D. McGill, Henry Pegram, A.R.A., F. W. Pomeroy, A.R.A., Henry Poole, J. Havard Thomas, A. Turner, and John Tweed.

LATEST PRICES.

IRON.

Steel Joists, Belgian and German (ex steamer, London)	per ton	£6	2	6	to	£6	5	0
Steel Joists, English		7	10	0	,,	7	12	6
Wrought-Iron Girder Plates		7	0	0	,,	7	5	0
Steel Girder Plates		7	2	6	,,	8	2	6
Bar Iron, good Staffs		6	5	0	,,	8	10	0
Do., Lowmoor, Flat, Round, or Square		20	0	0	,,	0	0	0
Do., Welsh		5	15	0	,,	5	17	0
Boiler Plates, Iron—								
South Staffs		8	0	0	,,	8	15	0
Best Snedshill		9	0	0	,,	9	10	0

Angles 10s., Tees 20s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £8 15s to £9.
Ditto galvanised, £14 to £15 10s. per ton.

Galvanised Corrugated Sheet Iron—

	No. 18 to 20.	No. 22 to 24
6ft. to 8ft. long, inclusive	Per ton.	Per ton.
gauge	£13 0 0	£13 10 0
Best ditto	13 0 0	14 0 0

Wire Nails (Points de Paris)—

3 to 7	8	9	10	11	12	13	14	15	B.W.G.
8/3	8/9	9/3	9/9	10/3	11/-	11/9	12/6	13/6	per cwt.

	Per ton.				Per ton.		
Cast-Iron Columns	£7	10	0	to	£9	0	0
Cast-Iron Stanchions	7	10	0	,,	9	0	0
Rolled-Iron Fencing Wire	8	5	0	,,	8	10	0
Rolled-Steel Fencing Wire	7	5	0	,,	7	10	0
,, ,, Galvanised	8	15	0	,,	9	5	0
Cast-Iron Sash Weights	5	0	0	,,	5	5	0
Cut Floor Brads	9	15	0	,,		—	
Corrugated Iron, 24 gauge	16	0	0	,,		—	
Galvanised Wire Strand, 7 ply, 14 B.W.G.	14	5	0	,,		—	

B.B. Drawn Telegraph Wire, Galvanised—

0 to 8	9	10	11	12	B.W.G
£10 10s.	£10 15s.	£11 0s.	£11 5s.	£11 15s.	per ton.

Cast-Iron Socket Pipes—						
3in. diameter	£6	2	6	to	£6	7	0
4in. to 6in.	6	0	0	,,	6	5	0
7in. to 24in. (all sizes)	5	7	6	,,	6	0	0

[Coated with composition, 5s. 0d. per ton extra, turned and bored joints, 5s. 0d. per ton extra.]

Pig Iron—	Per ton.
Cold Blast, Lilleshall	110s. 0d. to 117s. 6d.
Hot Blast, ditto	70s. 0d. ,, 75s. 0d.

Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—

Gas-Tubes	75 p.c.
Water-Tubes	72½ ,,
Steam-Tubes	67½ ,,
Galvanised Gas-Tubes	65 ,,
Galvanised Water-Tubes	62½ ,,
Galvanised Steam-Tubes	57½ ,,

OTHER METALS.

Spelter, Silesian	Per ton	£20	12	6	to	£20	17	6
Lead Water Pipe, Town		24	15	0	,,		—	
,, ,, ,, Country		25	10	0	,,		—	
Lead Barrel Pipe, Town		25	15	0	,,		—	
,, ,, ,, Country		26	0	0	,,		—	
Lead Pipe, Tinned inside, Town		26	15	0	,,		—	
,, ,, ,, ,, Country		27	10	0	,,		—	
Lead Pipe, Tinned inside and outside Town		29	5	0	,,		—	
,, ,, ,, ,, Country		30	0	0	,,		—	
Composition Gas-Pipe, Town		27	15	0	,,		—	
,, ,, Country		28	10	0	,,		—	
Lead Soil-pipe (up to 4½in.) Town		27	15	0	,,		—	
,, ,, ,, Country		28	10	0	,,		—	
[Over 4½in. £1 per ton extra.]								
Lead Shot, in 28lb. bags		24	15	0	,,		—	
Copper Sheets, sheathing & rods		85	0	0	,,	85	10	0
Copper, British Cake and Ingot		74	0	0	,,	74	10	0
Tin, English Ingots		191	10	0	,,	192	0	0
Do., Bars		192	10	0	,,	193	0	0
Pig Lead, in 1cwt. pigs (Town)		21	15	0	,,		—	
Sheet Lead, Town		24	5	0	,,		—	
,, ,, Country		25	0	0	,,		—	
Genuine White Lead		30	15	0	,,		—	
Refined Red Lead		25	10	0	,,		—	
Sheet Zinc		30	0	0	,,		—	
Old Lead, against account		19	5	0	,,		—	
Tin	per cwt.	11	0	0	,,		—	
Cut nails (per cwt. basis, ordinary brand		0	11	6	,,		—	

TIMBER.

CONSTRUCTIONAL.

Yellow Pine Deals, Quebec, per standard:—	1st quality	£38	0	0	to	£45	0	0
,, ,, ,,	2nd ,,	26	0	0	,,	32	0	0
,, ,, ,,	3rd ,,	16	0	0	,,	18	10	0
Spruce Deals: St. Johns		10	0	0	,,	11	10	0
,, ,, Miramichi		9	10	0	,,	10	10	0
,, Boards: Swag		11	0	0	,,	12	0	0
Red Deals: Archangel	1st quality	21	0	0	,,	24	0	0
,, ,, ,,	2nd ,,	16	0	0	,,	19	0	0
,, ,, ,,	3rd ,,	12	0	0	,,	14	0	0
,, ,, St. Petersburg—								
,, ,, ,,	1st quality	16	10	0	,,	18	0	0
,, ,, ,,	2nd ,,	14	10	0	,,	15	10	0
,, ,, Wyburg & Uleaborg		12	10	0	,,	15	0	0
,, Gefle, Gothenburg, and Stockholm		12	10	0	,,	17	0	0
White Deals: Crown		14	0	0	,,	15	10	0
,, ,, Seconds		11	10	0	,,	13	0	0
Flooring: White and Planed—								
1st and 2nd quality mixed		10	15	0	,,	11	15	0
1st, 2nd, & 3rd quality mixed		10	5	0	,,	11	0	0
Red Planed, 1st quality		14	10	0	,,	17	0	0
Pitch Pine: Prime Deals and Boards		18	0	0	,,	23	0	0
Lignum Vitæ	Per ton	7	0	0	,,	14	0	0

	Per cubic foot.						
Yellow Pine Logs (waney board)	0	5	0	,,	0	5	6
Pitch Pine Logs	0	2	0	,,	0	2	6
Birch: Quebec Logs	0	2	3	,,	0	2	9
Oak: Austrian Wainscot	0	7	0	,,	0	8	0
Mahogany: Gaboon	0	2	0	,,	0	2	3

FURNITURE AND HARDWOODS.

Teak: Burmese, per load, 50ft.		£20	0	0	to	£25	0	0
Teak: Java, per load, 50ft.		16	0	0	,,	21	0	0
		Per cubic foot.						
Oak Planks: U.S.A., imported		0	1	9	to	0	2	6
,, Boards ,, ,,	Prm.	0	3	0	,,	0	3	6
,, ,, ,, ,,	Mdm.	0	2	6	,,	0	2	9
Sequoia (Californian Redwood)		0	2	1	,,	0	3	6
Birch: Quebec logs		0	2	3	,,	0	2	9
,, ,, sawn planks		0	1	3	,,	0	2	0
Oak: Austrian Wainscot		0	7	0	,,	0	8	0
Walnut: Prime boards and planks		0	6	0	,,	0	6	6
Walnut: Mdm. ,, ,,		0	3	6	,,	0	4	6
Greenheart: Hewn logs		0	3	3	,,	0	4	0
Cedar, Cigar box		0	4	9	,,	0	5	6
Satin Walnut. Imp. sawn boards, prime		0	2	4	,,	0	2	9
Orham: Imp. sawn boards, prime		0	2	0	,,	0	2	3
Mahogany: St. Domingo, Cuba, and Honduras		0	6	0	,,	0	9	0
,, African, Assinee, &c.		0	5	0	,,	0	6	6
,, Lagos and Benin		0	4	6	,,	0	5	0
,, Sekondi and Cape Lopez		0	3	0	,,	0	4	0
,, Gaboon		0	2	0	,,	0	2	3
Satinwood, West Indian		0	10	0	,,	0	14	0
Rosewood	Per ton	8	0	0	,,	12	0	0
Lignum Vitæ	,,	7	0	0	,,	14	0	0

STONE.*

Red Mansfield, in blocks	per foot cube	£0	2	4
Darley Dale, ditto	,,	0	2	3
Red Corsehill, ditto	,,	0	2	2
Closeburn Red Freestone, ditto	,,	0	2	0
Ancaster, ditto	,,	0	1	10
Greenshill, ditto	,,	0	1	10
Chilmark, ditto (in truck at Nine Elms)	,,	0	1	10½
Hard York, ditto	,,	0	2	10
Ditto ditto 6in. sawn both sides, landings, random sizes	per foot sup.	0	2	8
Ditto ditto 3in. slab sawn two sides, random sizes	,,		1	3

* All F.O.R. London.

Bath Stone, delivered on road waggons, Paddington Depot	per foot cube	0	1	7½
Ditto, ditto, Nine Elms Depot	,,	0	1	9½
Beer Stone, delivered on rail at Seaton Station	,,	0	1	0
Ditto, delivered at Nine Elms Station	,,	0	1	6

Portland Stone, in random blocks of 20ft. average:—

	Brown Whit Bed. Per foot cube.	White Base Bed
Delivered on road waggons at Paddington Depot, Nine Elms Depot, or Pimlico Wharf	£0 2 3	£0 2

SLATES.

	in. in.	£	s.	d.	per 1,000 of
Blue Portmadoc	20×10	12	12	6	1,200 at r.stn
,, ,,	16× 8	6	12	6	,, ,,
Blue Bangor	20×10	13	2	6	,, ,,
,, ,,	20×12	13	17	6	,, ,,
First quality	20×10	13	0	0	,, ,,
,, ,,	20×12	13	15	0	,, ,,
,, ,,	16× 8	7	5	0	,, ,,
Eureka unfading green	20×10	15	17	6	,, ,,
,, ,,	20×12	18	7	6	,, ,,
,, ,,	18×10	13	5	0	,, ,,
,, ,,	16× 8	10	5	0	,, ,,
Permanent green	20×10	11	12	6	,, ,,
,, ,,	18×10	9	12	6	,, ,,
,, ,,	16× 8	6	12	6	,,

BRICKS.

(All prices net.)

First Hard Stocks	£1	15	0	per 1,000 alongside, in	
Second Hard Stocks	1	11	0	,, ,,	river.
Mild Stocks	1	9	0	,, ,,	,,
Picked Stocks for Facings	2	5	0	,,	livered at rly. stn.
Flettons	1	10	0	,, ,,	,,
Pressed Wire Cuts	1	18	0	,, ,,	,,
Red Wire Cuts	1	14	0	,, ,,	,,
Best Fareham Red	3	12	0	,, ,,	,,
Best Red Pressed Ruabon Facing	5	0	0	,, ,,	,,
Best Blue Pressed Staffordshire	3	15	0	,, ,,	,,
Ditto Bullnose	4	0	0	,, ,,	,,
Best Stourbridge Firebricks	3	11	0	,, ,,	,,
2½in. Best Red Accrington Plastic Facing Bricks	1	10	6	,,	Net, delivered in full truck loads in London.

* Accrington Best Red Plastic Facing per 1,000 Bricks £2 10 0

3⅜" ditto Second Best Plastic ditto	2 2 6
Ditto Ordinary Second Bricks	1 11 3
Ditto Plastic Engineering Bricks	1 17 6
Sewer Arch Brick not more than 3⅜" in thickest part	2 0 0
3⅜" Chimney Bricks fit for outside work	2 6 0
3⅜" ditto ditto through and through	2 0 0
3⅜" Beaded, Ovolo and Bevel Jambs; Octagons; 2½" and ½" radius Bullnoses; Stock patterns	3 7 6
Accrington Air Bricks, 9"×2 course deep, each	0 0 6
Ditto ditto 9"×1 course	,, 0 0 3

Accrington Camber Arches:—

3 course deep, 4½" soffit, per foot opening							0	1 3
4	ditto	4½"	ditto	ditto	ditto		0	1 8
5	ditto	4½"	ditto	ditto	ditto		0	2 1
6	ditto	4½"	ditto	ditto	ditto		0	2 6
3	ditto	9"	ditto	ditto	ditto		0	2 1
4	ditto	9"	ditto	ditto	ditto		0	2 11
5	ditto	9"	ditto	ditto	ditto		0	3 9
6	ditto	9"	ditto	ditto	ditto		0	4 6

Net free on rail or free on boat at works

GLAZED BRICKS.

HARD GLAZES, (PER 1,000.)

White, Ivory, and Salt Glazed. Best.	Seconds.	Buff, Cream, & Bronze.	Other Colours.	Second Colours.
Stretchers—				
£13 7 6	£10 17 6	£13 17 6	£17 17 6	£12 7 6
Headers—				
11 17 6	10 7 6	13 7 6	17 7 6	11 17 6
Quoins, Bullnose, and 4½in. Flats—				
15 17 6	14 17 6	17 17 6	21 7 6	15 17 6
Double Stretchers—				
17 17 6	16 7 6	20 17 6	24 7 6	17 17 6
Double Headers—				
14 17 6	13 7 6	17 17 6	21 7 6	14 17 6
One side and two ends, square—				
18 17 6	17 7 6	21 17 6	26 7 6	18 17 6
Two sides and one end, square—				
19 17 6	18 7 6	22 17 6	26 17 6	19 17 6
Splays and Squints—				
17 7 6	15 17 6	21 17 6	24 17 6	17 7

Plinth and Hollow Bricks. Stretchers and Headers—
5d. each 4d. each 6d. each 6d. each 5d. each

Double Bullnose, Round Ends, Bullnose Stops—
5d. each 4d. each 6d. each 6d. each 5d. each

Rounded Internal Angles—
4d. each 3d. each 5d. each 5d. each 4d. each

MOULDED BRICKS.

Stretchers and Headers—
8d. each 8d. each 8d. each 8d. each 8d. each

Internal and External Angles—
1/2 each 1/2 each 1/2 each 1/2 each 1/2 each

Cill Bullnose, Stretchers and Headers—
5d. each 4d. each 6d. each 6d. each 5d. each

Majolica or Soft Glazed Stretchers and Headers ..... Per 1,000 £22 17 6

" Quoins and Bullnose... 27 17 6

Compass bricks, circular and arch bricks of single radius £6 per 1,000 over above list for their respective kinds and colours } Not exceeding 9in.

Camber arch bricks, any kind or colour, 1s. 2d. each ..... } by 4½in. by 2½in.

Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.

* These prices are carriage paid in full truck loads to London Stations.

	s.	d.	
Thames Sand	7	6	per yard, delivered
Pit Sand	7	0	" "
Thames Ballast	6	0	" "

	s.	d.		Per ton,
Best Portland Cement	36	0	to 41	0 delivered
Ground Blue Lias Lime	21	0	per ton delivered.	

Exclusive of charge for sacks.

	s.	d.		Per yard,
Grey Stone Lime	13	6	to 14	0 delivered

Stourbridge Fireclay in sacks 27s. 0d. per ton at railway station.

TILES.

	s.	d.		Dlvrd. at
Plain red roofing tiles	42	0	per 1000	ry. stn.
Hip and Valley tiles	3	7	per doz.	" "
Broseley tiles	50	0	per 1000	" "
Ornamental tiles	52	6	"	" "
Hip and Valley tiles	4	0	per doz.	" "
Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000	" "
Ornamental do.	60	0	"	" "
Hip tiles	4	0	per doz.	" "
Valley tiles	3	0	"	" "
Selected "Perfecta" roofing tiles :—Plain tiles (Peake's)	46	0	per 1000	" "
Ornamental do.	48	6	"	" "
Hip tiles	3	10½	per doz.	" "
Valley tiles	3	4½	"	" "
"Rosemary" brand plain tiles	48	0	per 1000	" "
Ornamental tiles	50	0	"	" "
Hip tiles	4	0	per doz.	" "
Valley tiles	3	8	"	" "
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000	" "
Hand-made sand-faced	45	0	"	" "
Hip tiles	4	0	per doz.	" "
Valley tiles	3	6	"	" "
Hartshill" brand plain tiles, sand-faced	50	0	per 1000	" "
Pressed	47	6	"	" "
Ornamental do.	50	0	"	" "
Hip tiles	4	0	per doz.	" "
alley tiles	3	6		" "

OILS.

Rapeseed, English pale, per tun	£28	15	0 to	£29	5 0
Do., brown " "	26	15	0 "	27	5 0
Cottonseed, refined " "	29	0	0 "	30	0 0
Olive, Spanish " "	39	10	0 "	40	0 0
Seal, pale " "	21	0	0 "	21	10 0
Cocoanut, Cochin " "	46	0	0 "	46	10 0
Do., Ceylon " "	42	10	0 "	43	0 0
Do., Mauritius " "	42	10	0 "	43	0 0
Palm, Lagos " "	33	5	0 "	33	5 0
Do. Nut Kernel " "	35	0	0 "	35	10 0
Oleine " "	17	5	0 "	19	5 0
Sperm " "	30	0	0 "	31	0 0
Lubricating U.S. per gal	0	7	0 "	0	8 0
Petroleum refined " "	0	0	6½ "	0	0 6½
Tar, Stockholm per barrel	1	6	0 "	1	10 0
Do., Archangel " "	0	19	6 "	1	0 0
Linseed Oil per gal.	0	2	6 "		—
Baltic Oil " "	0	2	8 "		—
Turpentine " "	0	2	6½ "		—
Putty (Genuine Linseed Oil) per cwt.	0	9	0 "		—
Pure Linseed Oil "Stority" Brand "	0	10	0 "		—

GLASS (IN CRATES).

English Sheet Glass :	15oz.	21oz.	26oz.	32oz
Fourths	2d.	3d.	3½d.	4½d.
Thirds	2½d.	3½d.	4½d.	5½d.
Fluted Sheet	2½d.	3½d.	6½d.	7d.
Hartley's English Rolled Plate :	⅛in.	3/16in.	¼in.	
	2½d.	2½d.	3d.	

Figured Rolled and Repoussine White. 3½d. Tinted 5d.

VARNISHES, &c.

	Per gallon.
Fine Pale Oak Varnish	£0 8 0
Pale Copal Oak	0 10 0
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of churches	0 14 0
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flatting Varnish	0 18 9
White Copal Enamel	1 4 0
Extra Pale Paper	0 12 9
Best Japan Gold Size	0 10 9
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 0

TRADE NOTES.

At the exhibition in connection with the seventeenth meeting of the International Congress of Medicine, the Romik Company was awarded a gold medal for their sanitary polishes and appliances.

Boyle's latest patent "air-pump" ventilators have been employed at Dinnington Picture Palace, Dinnington, Yorks.

The second North-Eastern Counties Builders', Decorators', and Sanitary Trades' Exhibition will be held from November 11 to November 22, at the Exhibition Hall, Newcastle-on-Tyne. A unique feature of the exhibition will be that standholders will practically have their space outlay returned in the form of "Free Season Admission Tickets," these being quite in addition to the publicity work undertaken by the management.

Mr. S. Wilkinson, chief engineer's assistant and resident engineer at the Surbiton sewage works, has resigned in order to take up a responsible position at Valparaiso, Chili.

Mr. W. E. Warburton, surveyor to the Hornsea Urban District Council, has been granted an honorarium of £50 in consideration of extra work caused in preparing the plans and specifications in connection with the erection of the new pavilion.

Bishop Brindle, D.S.O., of Nottingham, laid on Monday the foundation-stone of a new Roman Catholic church at Ashby-de-la-Zouch, which is to cost £13,000. The church is being erected from the proceeds of jewels which were left to be sold for that purpose by Flora, first wife of the Duke of Norfolk, who, before her marriage was a Protestant.

The Local Government Board have given authority to the corporation of Liverpool to prepare a further town-planning scheme under the Housing and Town Planning Act, 1909. The scheme now authorised to be prepared will relate to an area of about 1,177 acres situate partly within the city and partly within the urban district of Allerton.

The first term of the new session of the University of London Slade School of Fine Art will begin at University College, Gower-street, W.C., on Monday, October 6. A special diploma course has been instituted, enabling students who take full-time courses, and who satisfy the conditions governing the diploma course, to obtain a University Diploma in Fine Art. Mr. Sydney Mawson will conduct a new course in ornamental design and historic styles.

Speaking at Wellington, New South Wales, on Monday, Mr. Carmichael, the Minister of Education for that State, emphasised the progressive educational policy of the Government, which, he said, aimed at the best system possible. At the end of the year, school buildings to the value of £236,000 were in course of construction, of which sum £128,000 was being spent in the country districts. At the present time work consisting of the construction of new schools and of additions to and the remodelling of others was in progress to the value of £129,417 in the capital and of £142,829 in the country.

The memorial tablet to James Burbage, builder of the first English playhouses and a number of other Elizabethan actors which has been subscribed for by members of the London Shakespeare League and their friends, is about to be placed on the north wall of the north aisle in St. Leonard's Church, Shoreditch. The design, by Mr. William H. Ansell, A.R.I.B.A., consists of a tablet in white marble, 8ft. 6in. in height with incised inscription surrounded by a green marble moulding in the style of the English Renaissance, as interpreted by Dance, the pupil of Sir Christopher Wren, who designed the church. The sole ornament is a laurel wreath in the centre of the upper part.

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OGILVIE & CO. Many years connected with the late firm of W. H. LASCELLES & CO., of Bunhill Row.

Mildmay Avenue, ISLINGTON, N.

EXPERTS in HIGH-CLASS JOINERY.

ALTERATIONS & DECORATIONS. ESTIMATES FREE.

FOR

Olivers' Seasoned Hardwoods,

APPLY TO

WM. OLIVER & SONS, Ltd., 120, Bunhill Row, London, E.C.

TENDERS.

*** Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

ABERDEEN.—For additions to premises in Berrydenroad, for the Northern Co-operative Co., Ltd. Messrs. Wilsons and Walker, 181a, Union-street, Aberdeen, architects. Accepted tenders :—

Mason :—
Gould, E. ... £830 0 0

Iron :—
Sangster, J. A. ... 523 6 10

Carpenter :—
Lyall, G., jun. ... 264 19 0

Plasterers :—
Clark and Chapman ... 236 18 0

Plumber :—
Ogilvie, D. ... 175 0 0

Slaters :—
Currie, G., and Co. ... 134 3 0

Painter :—
Buchan, A. ... 98 10 6

ABERDEEN.—For the equipment of the Cairnery refuse tip, for the corporation. Tenders recommended for acceptance :—

Fencing :—
Jamieson, G., and Co., Aberdeen £415 0 0

Lancashire boiler :—
Wilson, W., and Co., Glasgow ... 492 0 0

BEDWELLTY.—For construction of a road between St. David's Church and Fairview, for the Bedwellty Urban District Council :—
Lawrence, J., Bargoed (accepted) £1,157 3 6

BENINGTON.—For erection of two pairs of cottages at Benington, for the Boston Rural District Council. Mr. H. Kidd, Kirton, architect :—

Two pairs :—
Dawson, W., Boston ... £757 0 0
Vamplew Bros., Friskney ... 732 0 0
Allen, M. H., Wrangle ... 712 0 0
Belton and Co., Gipsy Bridge* ... 648 0 0

One pair :—
Pett, Skirbeck ... 362 0 0

* Accepted.

BIGGLESWADE. — For supplying and laying 13,500 yards of cast-iron water-mains, in the parishes of Potton and Sutton, for the Biggleswade Rural District Council. Mr. H. Carne, A.M.I.C.E., waterworks engineer :—

Pearce, J. W., & Co., Morecambe	£9,326 16 0
Griffiths, W., London ...	8,071 7 8
Williams, H., St. Albans ...	7,960 4 6
Chamberlain, C., Leicester	6,955 13 8
Wright, W., Chesham ...	6,827 4 3
Riley, J., Cheltenham ...	6,485 5 10
Crawford Bros., Bournemouth ...	6,472 7 11
Brebner R. C., & Co., Edinburgh	6,398 16 8
Wilmott, W. G., Rushden ...	6,262 18 3
Ball, C., Letchworth ...	6,094 5 3
Moffat, J., Manchester ...	6,069 18 4
Jackson, W., Forest Gate ...	5,936 9 8
Hodson, F., and Co., Nottingham	5,901 4 0
Wilson, W., and Co., Newcastle ...	5,833 17 9
Sykes, A., Nottingham ...	5,817 9 10
Thompson, W., Luton ...	5,732 18 10
Patterson, W., & Son, Sleaford ...	5,692 12 2
Bailey, F. J., and Co., Ashwell ...	5,689 0 1
Staveley Iron Co., Chesterfield ...	5,483 14 3
Ashley, A., Mansfield ...	5,361 10 0
Middleton and Hopper, Langholm	5,387 6 5
Marland, F., Ashton-under-Lyne*	5,042 18 5

* Accepted. Engineer's estimate, £5,488.

BONCATH, PEMBROKE.—For clearing site, excavating foundation and erection of chapel house at Boncath :—

Elias, B., Penygraig ...	£245 10 0
James, T., Penygraig ...	245 10 0
Thomas, G., Newchapel ...	199 0 0
James, D., Boncath (accepted) ...	188 15 0
Thomas, T. G., Kilgerran ...	188 15 0

BOURNE, LINCOLNSHIRE.—For the erection of six houses on the allotment lands, for the urban district council :—
Hinson, T. H. (accepted).

BURNHAM-ON-CROUCH.—For the erection of cookery and handicraft centre, for the Essex Education Committee. Mr. F. Whitmore, Chelmsford, county architect :—

Eglin and Co., Chelmsford ...	£1,295 0 0
Sharpin, W. S., Bow ...	1,268 0 0
Gladwell, H., Walton-on-Naze ...	1,244 0 0
Wallis, H. S., Felixstowe ...	1,229 10 6
Davey and Armitage, Southend ...	1,193 0 0
Myall Bros., Southend ...	1,137 10 0
Brown, A., Braintree ...	1,100 0 0
Trudgett, W., Colchester ...	1,085 0 0
Gould, G., Burnham ...	1,018 10 6
Bacon, G. F., Burnham* ...	1,008 0 0

* Recommended for acceptance.

Buckland.—For the erection of a bank, for the National Provincial Bank of England :—

Denne, T. T.	£8,849	0	0
Bromley, W.	8,800	0	0
Griggs, W. H.	8,592	0	0
Hayward and Paramor	8,490	0	0
Denne, G. H., and Son	8,393	0	0

Crowborough. — For construction of storm-water sewers at Crowborough, for the East Grinstead Rural District Council :—

Streeter Bros., Croydon (accepted)	£642	3	0

Croydon. — For enlargement of the Ecclesbourne-road School, for the Corporation :—

Smith. J., and Sons, Ltd., South Norwood	£2,591	0	0
Davey and Armitage, Southend-on-Sea	2,575	0	0
Foster, F. and G., South Norwood	2,542	0	0
Lorden, W. H., and Son, Ltd., Upper Tooting	2,496	0	0
Summers Bros., Worthing	2,431	19	4
Saunders, E. J., Croydon	2,408	0	0
Smith, W., & Sons, Ltd., London-road, Croydon (accepted)	2,298	0	0

Dubmill.—For the construction of 520 yards of concrete sea wall and apron, adjoining the main road from Maryport to Silloth, at Dubmill, 5½ miles from Silloth and four miles from Bullgill Station, for the Cumberland County Council. Mr. W. Finch, The Courts, Carlisle, county surveyor :—

Middleton and Hopper, Aspatria	£7,510	14	0
Moffat, J., Manchester	7,494	6	9
Pearce, J. W., and Co., Morecambe	7,411	9	0
Doloughan and Mulcaster, Cleator Moor	7,037	10	0
Dawson, J. Hazelholme, Cleator*	6,775	18	6
Brebner, R. C., and Co., Edinburgh (withdrawn)	6,665	10	8

* Accepted. (The sum included for contingencies has been deducted from the total amount of tender in each case.)

East Preston.—For relaying the workhouse outfall drain to the sea, for the guardians :—

Drake, J. C., Rustington	£345	0	0

(Recommended for acceptance.)

Foleshill.—For the construction of two bridges over stream at Holbrooks and Bedlam-lanes, Foleshill, and raising the highways to the required level, for the rural district cocuncil. Mr. A. Ernest Newey, engineer and surveyor :—

Boon and Sons, Coventry	£1,159	7	8
Jones and Bacon, Foleshill	1,143	3	7
Kelley and Son, Foleshill	1,035	16	9
White, J., jun., Handsworth, Birmingham	953	3	6
Palmer, A. E., Glenfield, near Leicester	719	7	0
Green, W. H., Corley Moor, Coventry (accepted)	696	0	7

Gillingham.—For extending the engine room, &c., at the electric generating station, Gillingham-road, for the town council. Mr. J. L. Redfern, borough surveyor :—

Works Department, Gillingham	£2,015	0	0
Philips, H. E., Gillingham	1,992	0	0
Gates, G., and Sons, Frindsbury*	1,928	0	0

* Accepted.

Glenfarg.—For reservoirs and pipe laying in connection with waterworks at Glenfarg. Accepted tenders — Reservoirs —

Jackson & Anderson, Edinburgh	£61,727	0	0

Pipes :—

McLaren, R., and Co., Glasgow	8,187	0	0

Leyland.—For taking up the existing culvert, constructing a new culvert, and road widening and improvement works in Chapel Brow, Leyland, for the urban district council. Mr. M. H. Wilkinson, surveyor —

Farrell, J., Blackpool	£1,042	4	5
Hayes, F., Liverpool	883	19	2
Marland Bros., Leyland	721	12	9
Sutcliffe, J., New Longton	702	10	0
Greyson, W., Lytham (accepted)	677	16	4

Surveyor's estimate, £697.

Lincoln.—For erection of a nurses' home and an additional ward at the Lincoln County Hospital. Mr. W. G. Watkins, St. Edmond's Chamber, Silver-street, Lincoln, architect :—

Halkes Bros., Lincoln	£10,246	0	0
Pattinson & Son, Ltd., Ruskington	9,178	0	0
Maxey and Son, Sleaford	8,810	0	0
Bow, T., Nottingham	8,685	0	0
Horton, S. and R., and Sons, Ltd., Lincoln	8,528	0	0
Wright and Sons, Ltd., Lincoln*	8,184	0	0

* Accepted.

Lisset.—For the erection of a new bridge over the Barmston drain at Lissett, for the Bridlington Rural District Council :—

Robinson, B., Hull (accepted)	£326	0	0

London, W.—For alterations to the two electric passenger lifts at the infirmary, for the Hammersmith Board of Guardians :—

Waygood and Co., Falmouth-road, S.E. (accepted)	£317	0	0

London, W.—For reconstruction of Ranelagh-road footbridge (ferro-concrete), for the Paddington Borough Council :—

Wallis, G. E., and Sons, Ltd. (Accepted.)	£2,380	0	0

London, W.—For decorating the town hall, for the Paddington Borough Council :—

Vears, J., and Co., Craven Park-terrace (accepted)	£393	0	0

London, W.C.—For the erection of an office for the medical superintendent at the infirmary, for the Marylebone Board of Guardians :—

Lavington and Co., Berners-street (Accepted.)	£180	0	0

London, S.E.—For varnishing at the infirmary, for the Lewisham Guardians —

Beeney, Courthill-road, Lewisham	£276	10	0
Ball and Stephens, Lewisham	250	10	6
Maskell, Hither Green	235	0	0
Coppin, Hither Green	225	0	0
Loasby, Hither Green	210	0	0
Finch and Finch	196	0	0
Marshall, Forest Hill	175	17	0
Hewens, A. J., High-street Lewisham	154	15	0
Mack, Ewhurst-road, Brockley	140	0	0
Amey Bros., Catford (accepted)	124	17	6

Loughborough.—For supplying and fixing a boiler at the electricity works, for the town council :—

Clarke, Chapman, & Co., Ltd.*	£1,880	0	0
Babcock and Wilcox, Ltd.	1,522	0	0
Stirling Boiler Co., Ltd.	1,516	0	0

* Amended to £1,774 and accepted.

Luton.—For the erection of Offices in Upper George-street, for the Prudential Assurance Co. :—

Pryer, G. W.	£7,559	0	0
Higgs, Northampton	7,388	0	0
White, C. H.	7,184	0	0
Saunders, J., and Son	7,021	0	0
Drever, O. P., Kettering	6,973	0	0
Dunham and Sons	6,938	0	0
Neville, T. E.	6,896	0	0
Miskin, C., and Son, St. Albans	6,868	0	0
Hickman and Son, Market Harborough (accepted)	6,668	0	0

(Rest of Luton.)

Macclesfield.—For the supply of furniture and fittings, for the education committee :—

Bennett Furnishing Co. (accepted)	£591	6	0

Mitcham.—For the reconstruction of the heating installation at their workhouse, Western-road, Mitcham, for the Holborn Guardians :—

Finch, B., and Co., Ltd., Belvedere-road, S.E.	£3,720	0	0
Ashwell and Nesbit, Ltd., Great James-street, W.C.	3,620	0	0
Reason, W., Rosebery-avenue, E.C.	3,427	0	0
Strode and Co., Ltd., Osnaburgh-street, N.W.	3,198	0	0
Buckley's (London), Ltd., Bank Chambers, Holborn, W.C.	3,165	0	0
Albion Iron Co. (London), Ltd., Upper Thames-street, E.C.	3,160	0	0
Bradley, G. and E., Lever-st., E.C.	3,150	0	0
Lund Bros., and Co., Queen Victoria-street, E.C.	3,148	17	2
Beaver and Sons, Ltd., Victoria street, S.W.	2,998	15	0
Brightside Foundry & Engineering Co., Ltd., Victoria-street, S.W.	2,979	0	0
Berry, Z. D., and Sons, Albion Works, Regency-street, S.W.	2,961	0	0
Wall, E., Alice Works, Summers Town, S.W.	2,881	7	10
Cormack, J., and Sons, Ltd., Eccleston-street, S.W.	2,875	13	0
Cannon, W. G., and Sons, Ltd., 107, London-road, S.E.*	2,685	0	0

Sections, 1, 2, and 3 only.

Parker, B., Ltd., Suffolk-street, Birmingham	1,949	14	5

Sections 4 and 5.

Drowett, J., and Son, London-road, Mitcham	746	0	0

* Recommended for acceptance.

Park Prewett.—For heating the new lunatic asylum now in course of erection at Park Prewett, near Basingstoke, for the Hants County Council :—

Korting and Co. (accepted)	£15,853	19	3

(Lowest of four tenders received.)

Ramsgate.—For painting and decorative work at Albion House, 26, Albion-place, and cottage at rear, for the works committee —

Jarman Bros.	£329	0	0
Dunn, E. R.	175	0	0
Grummant, Bros. (accepted)	175	0	0

Redditch.—For the erection and fitting of shops in George-street, Redditch, for the Alcester Co-operative Industrial Society, Ltd. Mr. J. Johnson, Redditch architect. Quantities by the architect —

Hunns and Seden, Ltd.	£2,859	0	0
Surman, H.	2,793	0	0
Avery, A. G.	2,700	0	0
Shrimpton, J.	2,700	0	0
Eakins, W. H., and Son	2,678	0	0
Hunns, C. G., and Sons	2,657	10	0
Hunns, G., and Son (accepted)	2,630	0	0
Morgan, H., Birmingham	2,519	0	0

Rest of Redditch.

Sawbridgeworth.—For paving at Sawbridgeworth, for the Herts County Council. Mr. U. A. Smith, county surveyor :—

Day, J., and Son, Bishop's Stortford	£847	19	0
Inns and Co., Stevenage	752	7	9
Glasscock and Son, Bishop's Stortford	741	18	6
Wheeler and Co., London	731	8	0
Free and Sons, Maidenhead	705	17	0
Catley, A. T., London	699	18	0
French, W. and C., Buckhurst Hill	677	2	0
Hayes, F., Seaforth, Liverpool	607	4	9
Williams, H., St. Albans	581	8	7
Farley, T., Lye, Stourbridge*	558	1	0

* Accepted.

Sawbridgeworth.—For the erection of a bridge at Sawbridgeworth, for the Herts County Council. Mr. U. A. Smith, county surveyor :—

Pedrette, T. W., Enfield	£2,745	0	0
Higgins, W., Northampton	2,733	6	11
Muirhead, W., and Co., London	2,670	16	6
Jackson, J., Barking	2,590	15	5
French, W. & C., Buckhurst Hill	2,481	0	0
Paul, P. R., Waltham Abbey	2,243	0	0
Lowe, W., Nottingham	2,128	11	9
Catley, A. T., London	2,020	0	0
Trentham, P. G., Walthamstow	1,985	0	0
Day, S., and Son, Bishop's Stortford (accepted)	1,844	8	5

Tivetshall.—For the erection of Tivetshall Rectory, Norfolk —

Ludkin, W. H., Banham	£1,894	10	0
Young, J., and Son, Norwich	1,785	0	0
Rayner, A. F., Harleston	1,707	0	0
Baldwin, E., Woodton	1,675	0	0
Smith, E. J., Bunwell (accepted)	1,670	0	0

Trinity-square, E.C.—For building the foundations of the new head offices for the Port of London Authority. Mr. Edwin Cooper, F.R.I.B.A., architect :—

Mowlem, J., and Co., Ltd., Grosvenor Wharf, Pimlico (accepted).			

(Amount between £40,000 and £50,000.)

TO CORRESPONDENTS.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

It is particularly requested that all drawings and all communications respecting illustrations or literary matter, books for review, etc., should be addressed to the EDITOR of the Building News, Effingham House, 1, Arundel-street, Strand, W.C., and not to members of the staff by name. Delay is not infrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

*** Drawings of selected competition designs, important public and private buildings, details of old and new work, and good sketches are always welcome, and for such no charge is made for insertion. Of more commonplace subjects—small churches, chapels, houses, etc.—we have usually far more sent than we can insert, but are glad to do so when space permits on mutually advantageous terms, which may be ascertained on application.

When favouring us with drawings or photographs, architects are asked kindly to state how long the building has been erected. It does neither them nor us much good to illustrate buildings which have been some time executed, except under special circumstances.

Cheques and Post-office Orders to be made payable to The Strand Newspaper Company, Limited, and crossed London County and Westminster Bank.

LIST OF COMPETITIONS OPEN.

Aug. 25	Cottage Homes, Tendring		A. J. H. Ward, Clerk, Harwich.
,, 27	Pauper Lunatic Asylum, Extending, Bracebridge		The Clerk, 5 and 6, Bank-street, Lincoln.
Sept. 1	Town Planning the Borough, High Wycombe (Assessors)	£25, £10, £5	T. J. Rushbrooke, Boro' Sur., High Wycombe.
,, 3	Branch Co-operative Premises, High Wheatley Hill	£25, £15, £10 (Assessor)	The General Manager, Co-operative Society, Ltd., Haswell.
Oct. 31	Houses and Planning, York	£100, £50, £25	F. W. Spurr, City Engineer, Guildhall, York.
Nov. 1	Royal Palace, Sofia, Bulgaria		Section d'Architecture au Ministere des Travaux Publics, Sofia.
,, 1	Law Courts, Sofia, Bulgaria		Section d'Architecture au Ministere des Travaux Publics, Sofia.
,, 18	Destructor, Schaerbeek-lez-Bruxelles		Service de l'Ingenieur, 30, Rue de la Ruche, Brussels.
,, 29	Band Pavilion, West Cliff, Folkestone (limit of cost £20,000). (Edwin T. Hall, F.R.I.B.A., 34, Bedford-square, W.C., Assessor)		A. F. Kidson, Town Clerk, Folkestone.
Jan. 2 (1914)	Manchester Royal Exchange, Additional New Buildings and Alterations. (J. S. Gibson, F.R.I.B.A., Assessor)		Rich. J. Allen, Master, Royal Exchange, Manchester.
No date	New Offices for Board of Trade, &c., Whitehall Gardens, S.W. [R. Blomfield, M.A. (Oxon), A.R.A., P.R.I.B.A. J. Belcher, R.A., and Sir Aston Webb, C.V.O., C.B., R.A., Assessors]	Sketch Designs, ten will be Selected, with £300 Honararium each	The Secretary, H.M. Office of Works, Storey's Gate, S.W.

LIST OF TENDERS OPEN.

BUILDINGS.

Aug.	22—New Post Office, Maryport	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
,,	22—Six Semi-detached Villas, Rugby	Park Estate Vendors	Franklin and Newman, Archts., Rugby.
,,	22—Workhouse, Additions to, Boughton Heath, Chester	Tarvin Guardians	J. H. Davies and Sons, Archts., 14, Newgate-street, Chester.
,,	22—Extending Postal Stores, Islington	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
,,	22—Public School, Laundry and Cookery Room at, Pinxean	Birse School Board	G. Bennett Mitchell, Archt., 148, Union-street, Aberdeen.
,,	22—Forward Movement Hall, Sandfields, Aberavon		F. B. Smith, M.S.A., Port Talbot.
,,	23—Two Pairs of Cottages, Baconsthorpe, near Holt	Erpingham Rural District Council	J. T. Willis, Deputy Clerk, Cromer-road, Sheringham.
,,	23—Fire-engine House, Extension of, Harlow	Parish Council	S. Deards, Clerk, West-street, Harlow, Essex.
,,	23—Hospital, Robroyston Estate, Glasgow	Corporation	J. Lindsay, Town Clerk, City Chambers, Glasgow.
,,	23—One Pair of Cottages, West Beckham, near Sheringham	Erpingham Rural District Council	J. T. Willis, Deputy Clerk, Cromer-road, Sheringham.
,,	25—Coronation Hall, Ulverston		Settle and Brundrit, AA.R.I.B.A., Ulverston.
,,	25—Farmhouse, Additions to, Auchertyre		J. Wittet, Archt., Elgin.
,,	25—School, Additions to, Greystoke	Cumberland Education Committee	J. Forster, M.S.A., 13, Earl-street, Carlisle.
,,	25—Houses (12), Highgate-lane, Lepton	Urban District Council	J. B. Abbey and Son, Archts., New-street, Huddersfield.
,,	25—County Court, Extending, Wandsworth	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
,,	25—Bothy, Crossiea		J. Wittet, Archt., Elgin.
,,	25—Church at Gellick, Lumberg, Belgium		The Gouvernement Provincial, Hasselt, Belgium.
,,	25—Pair of Villas, Wellfield-road, Marsh, Huddersfield		A. G. Sladdin, Archt., 39, Briggate, Brighouse.
,,	25—Wards and Nurses' Quarters at Dispensary, Pontefract		W. J. Tennant, Archt., Pontefract.
,,	26—Scattered Homes, Repairing, Plymouth	Guardians	W. H. Davey, Clerk, Greenbank-road, Plymouth.
,,	26—Four Semi-detached Houses, Bingley-road, Heaton		H. E. Priestley, M.S.A., 4, Bertram-road, Manningham.
,,	26—Infirmary, Repairs to, Cleveland-street, W.	St. Giles-in-the-Fields Guardians	S. Ashley, Clerk, 57, Broad-street, Bloomsbury, W.C.
,,	26—Borough Asylum, Two Blocks of Buildings at, Canterbury	Visiting Committee	Jennings and Gray, Archts., Canterbury.
,,	26—Workhouse, Alterations to, Epsom	Guardians	A. C. Williams, Archt., 53, Doughty-street, W.C.
,,	26—Branch Premises, Edgeley	Stockport Co-op. Society, Ltd.	Wrathmell & Blackshaw, LL.R.I.B.A., St. Peter's-sq., Stockport.
,,	26—Two Lock-up Shops, Jack-lane, Leeds	Improvements Committee	W. T. Lancashire, City Eng., Municipal Buildings, Leeds.
,,	26—Council School, Alterations to, Haxby	North Riding Education Committee	J. C. Wrigley, Sec., County Offices, Northallerton.
,,	26—Two Cottages, High Dyke, Cockermouth		J. R. Mitchell and Sons, Archts., Cockermouth.
,,	26—Head Post Office, Alterations to, Perth	H.M. Works Commissioners	H.M. Office of Works, 3, Parliament-square, Edinburgh.
,,	26—Gasworks, Vertical Retort House at, Aberdeen	Town Council	S. Milne, Gas Engineer, Aberdeen.
,,	26—Fever Hospital, Extension to, Stoke-on-Trent	Joint Hospital Board	E. Jones, M.S.A., 10, Albion-street, Hanley.
,,	26—Stabling, Adswood Sidings, Stockport	Co-operative Society, Ltd.	Wrathmell & Blackshaw, LL.R.I.B.A., St. Peter's-sq., Stockport.
,,	27—Working-class Dwellings (106), Chelmsford	Corporation	P. T. Harrison, A.M.I.C.E., Municipal Offices, Chelmsford.
,,	27—House on Garden City Principle, Polkemmet	West Lothian Housing Soc., Ltd.	The Secretary, 109, Hope-street, Glasgow.
,,	27—Baths, North-Eastern Fever Hospital, Tottenham, N.	Metropolitan Asylums Board	W. T. Hatch, M.I.C.E., Eng.-in-Chief, Embankment, E.C.
,,	27—Four Working-Class Dwellings, Wallingford	Corporation	The Borough Surveyor, St. Martin's-street, Wallingford.
,,	27—Wesleyan Church, Reslating, Dearham		J. W. Johnston, Derwent College, Dearham.
,,	27—House on Garden City Principle, Bathville	West Lothian Housing Soc., Ltd.	The Secretary, 109, Hope-street, Glasgow.
,,	27—Semi-detached Artisan Dwellings, Glastonbury	E. Jardine, M.P.	Bowring & Palmer & Sons, Surs., 66, High-street, Glastonbury.
,,	27—Wayne-Morgan Constitu. Club, Rebuilding, Trehafod	Committee	Evans, Williams, and Evans, Archts., Pontypridd.
,,	27—Shed Extension, Brook Ambulance Station, S.E.	Metropolitan Asylums Board	W. T. Hatch, M.I.C.E., Eng-in-Chief, Embankment, E.C.
,,	27—Workmen's Dwellings, Cumnock	Town Council	J. Arthur, Archt., 131, West Regent-street, Glasgow.
,,	27—St. Clement's Sunday School, Bradford		H. E. Priestley, M.S.A., 4, Bertram-road, Manningham.
,,	27—Pumping Station, Mosspits, Shelfield	Urban District Council	R. Green, M.Inst.C.E., 37, Waterloo-street, Birmingham.
,,	27—Old Infirmary Buildings, Alterations to, Haslingden	Guardians	H. Ross, Archt., 15, Cannon-street, Accrington.
,,	27—Workhouse, Repairs to, Griffithstown, Pontypool	Guardians	Laugher and Co., Archts., Pontypool.
,,	27—School, Upper Loughor	Glamorgan County Council	The Clerk, Glamorgan County Hall, Cathays Park, Cardiff.
,,	27—"Sheffield Telegraph" Buildings, Sheffield		Gibbs, Flockton, & Teather, Archts., 15, St. James'-row, Sheffield.
,,	27—House on Garden City Principle, Bents	West Lothian Housing Soc., Ltd.	The Secretary, 109, Hope-street, Glasgow.
,,	28—Printing Office, Cairo	Giza Survey Department	The Inspector, State Bldgs. Dept., Public Works Ministry, Cairo.
,,	28—School for Blind, Additions to, Bradford	Education Committee	The City Architect, Town Hall, Bradford.
,,	28—Gilingate Hall, Extensions to, Kendal		M. G. Shaw, Archt., 45, Highgate, Kendal.
,,	28—Schools, Sundry Works at, Green-st., Upton Park, E.	St. George-in-the-East Guardians	W. Watson, A.R.I.B.A., 53 and 54, Chancery-lane, W.C.
,,	28—Guildhall Premises, Additions to, Winchester	Corporation	W. V. Anderson, City Archt., Guildhall, Winchester.
,,	28—Coal-gas Plant, Thomas-street, Birkenhead	Corporation	The Gas Engineer, Thomas-street, Birkenhead.
,,	28—Lodge Offices, &c., at New Cemetery, Chilcombe	Winchester Corporation	W. V. Anderson, City Archt., Guildhall Winchester.

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THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House, Strand, W.C.

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Birmingham Hospital for Children. View and plans. Mr. F. W. Martin, Architect.
House at Steeple Aston, Oxfordshire. View and plans. Mr. William F. Daft, A.R.I.B.A., Architect.
Bow Church Steeple, Cheapside. Sir Christopher Wren, Architect. Royal Academy Silver Medal Drawing, by Mr. William Toogood.
County of Northumberland Elementary School, Stakeford. Mr. G. Topham Forrest, Lic. R.I.B.A., Architect.
Reinforced Concrete Buildings.
A New Handbook to Bath Abbey.

THE L.G.B. REPORT ON TOWN PLANNING.

"Part II.—Housing and Town Planning" (Cd. 6981, 7d.) is now ready, and may, we suppose, be had of the usual Government agents through any bookseller. It was, presumably, issued to the daily papers last Friday, though when we rang up Wymans the day before they "knew nothing about it," and when we sent to buy a copy on Saturday last, "they were all gone, and they didn't know when they should have any more." Thanks to Mr. John Burns's courtesy, we got a copy on Tuesday, so probably by now it is generally available. It is well worth reading, and on the whole satisfactory. It groups what has been done during the year under four heads.

A.—Information as to housing conditions; reports of medical officers of health; visits and inspections by our inspectors, &c.
B.—Action in respect of improvement schemes under Part I. of the Housing of the Working Classes Act, 1890.
C.—Proceedings of local authorities under Part II. of the Act of 1890 (including the substituted and additional provisions contained in Part I. of the Housing, Town Planning, &c., Act, 1909); reconstruction schemes; appeals as regards closing and demolition orders, orders to repair &c.
D.—Provision of dwellings by local authorities under Part III. of the Act of 1890; by-laws as affecting the provision of houses for the working classes; compulsory acquisition of lands; expenses of rural district council, &c.
E.—Complaints of default of local authorities.
F.—Miscellaneous.

The Board is evidently keeping its eyes well open, and local authorities inclined to shirk housing had better be careful. The Board remembers things. For instance, in connection with any inquiry with regard to an application for the issue of a provisional order for extending the boundaries of a borough or for constituting a county borough, the inspector holding the inquiry is instructed to make some investigation of the housing conditions of the borough, and where his report indicates that the conditions need improvement, the Board avails itself of the opportunity of pressing the council to deal with the matter. As an example, we may refer to the application which the town council of Wakefield made during the year for a provisional order constituting the borough a county borough. The inquiry held placed the Board in a position to bring some pressure to bear upon the council with regard to a dearth of houses for the working classes in the borough, and in response to a letter which was addressed to the town council on the subject, they have now given the Board a formal undertaking to erect without delay at least 100 houses. The Board, too, keeps a big book of press-cuttings, and any man who is sick of the inertia of his local authority should stir things up in that district either by public meetings or letters to the local papers.

When building by-laws are out of date or oppressive, the Board is alive to the fact. More and more the medical officers of health are encouraged to watch this matter in their reports, on the receipt of which the Board wakes up the local authority and helps revision. More, probably, might be done in this way, and of this the Report reminds those concerned. For instance, although many medical officers of health are careful that their annual reports should include particulars as to the number of new houses erected during the year or in course of erection at the end of the year, there are very few who distinguish working-class dwellings from others of a superior type, or who attempt to give even an approximate idea of the rents obtaining in the district in respect of such dwellings. The Board is anxious that the information should be as comprehensive and as complete as possible.

Systematic inspection is working well, on the whole, though some authorities still seem to fancy that the inspection which the law requires them to make is to be carried out or neglected according to their own view of its necessity or desirability. In many districts hitherto supposed to have sufficient houses for their inhabitants, the need for additional accommodation has been brought to light. In many more it might be. In 1909 steps were taken in 458 districts to deal with obstructive buildings and houses unfit for habitation; in 1910 in 474 districts; in 1911 in 850 districts; and in 1912 in 1,192 districts. Thus in 1912 action of this sort was being taken in 66 per cent. of the sanitary districts of England and Wales. In the year 1912 47,429 representations were made by medical officers of health as to houses being unfit for habitation. The corresponding number in 1909 was only 6,312. During the two years ending March, 1912, 20,459 of the 54,069 houses in respect of which representations were made and which were not dealt with by notice from the local authorities to repair have been made fit for habitation by their owners without the necessity for resorting to closing orders. During the year ending March 31, 1912, local authorities issued notices requiring repairs to be done to 43,781 houses in cases where, under the Act of 1909, an undertaking by the landlord was implied that he would, during the tenancy, keep the house in all respects reasonably fit for human habitation. Of these notices 31,289 were satisfactorily complied with by the landlords, whilst the remainder were for the most part dealt with by closing orders. During the year under review the Board authorised 69 local authorities to borrow £403,158 for the purpose of providing dwelling-houses. This sum represents the cost approximately of 279 acres of land, 1,880 dwellings or tenements, and incidental street works, drainage, fencing, etc. £59,557 of the above amount was for the purchase of 40 acres of land and the erection of 331 houses by rural district councils. The rent proposed to be charged varied from 2s. to 10s. per week, the former sum being the rental charged for a few two-roomed tenements at Cambridge. The total amount sanctioned in loans to local authorities for this purpose since 1891 is £2,763,008. The report recognises that progress in the provision of new houses has not been so great as could have been wished. In certain districts there is still a strong sentiment in opposition to the povision of houses by local authorities. Figures are not available to show the precise proportion of the new houses suitable for occupation by the working classes built in any one year by private enterprise and by local authorities respectively; but it may safely be asserted that, of the 5,528,108 dwelling-houses shown in the report of the Commissioners of Inland Revenue for 1912 as being exempt from inhabited house duty, not more than about 15,000 have been erected by local authorities under Part III. of the Act of 1890.

TOWN PLANNING.

The town-planning movement is progressing, but we confess our regrets at the absence of insistence on proper architectural control are still keen. The Board admits that

> In the first three schemes made by local authorities (viz., two Birmingham schemes and a Rochdale scheme) the authorities did not attempt to regulate or control by the schemes to any great extent the architectural features of the buildings to be erected; and whilst this omission has, no doubt, been a source of regret to architects and others who had been hoping that they would be able to bring about some improvement in this direction as the result of the Act, it is questionable whether the local authorities are not wise in leaving these matters, upon which corporate opinion might not be entirely satisfactory, to individual judgment and concentrating their efforts upon matters upon which they are clearly competent to decide. In the scheme made towards the end of the year by the urban district council of Ruislip-Northwood, some provisions are included in regard to architectural matters, and these will receive our very careful consideration.

The Board admits that, as we have more than once pointed out, the popularity of town-planning is not without its dangers. One of the most obvious of these is, perhaps, the tendency on the part of local authorities to avoid the trouble, delay, and expense said to be involved in making

a town planning scheme by making agreements with individual landowners outside the Act. Much can, of course, be done in this direction under the existing law, but in these cases the consideration of matters to which great importance is clearly attached in Part II. of the Act of 1909 is avoided. Thus one of the principles of that Part of the Act is that the owner of land being developed is not the only person interested in its development. The community and the adjoining landowners have a right to give their views upon the matter, and to have them considered. A second principle is that of publicity, the object being that the owners, the local authority, and the ratepayers and others interested may know to what they are being committed at each stage of the proceedings, and its present experience of this part of the Act of 1909 has certainly led the Board to the conclusion that publicity and full discussion at all stages with the landowners have been of great benefit both to the local authority and to the owners. There is no doubt about that. We are quite sure the Act never meant to make the big landowner boss of a show called "a big public improvement," but really a huge development of his own property at the cost of the ratepayers.

Up to the end of March, 1913, the Board had authorised the preparation or adoption of 33 schemes by 27 local authorities, involving a total area of more than 50,000 acres, or over 78 square miles. Four complete schemes have been submitted. Two by Birmingham; one by Rochdale, and the other by the urban district council of Ruislip-Northwood. Among the schemes the preparation of which was authorised by the Board in the year 1912-13 are one of 1,044 acres in Finchley, one of 4,266 acres in the borough and rural district of Luton, one of 1,860 acres in the urban districts of Twickenham, Heston, and Isleworth, and one of 1,530 acres in Walthamstow. In addition, 11 local authorities have applied for authority to prepare schemes involving some 20,000 acres, and the Board has information that some 111 others, many of them in the Greater London area, are considering town-planning schemes.

We are glad to notice a summary of variations of the Board's requirements under the Act which are very satisfactory, and which should be noted by all interested, and also to find that the Board has convinced the Board of Inland Revenue that statutory declarations required to be made in pursuance of Art. 31 of the Procedure Regulations are not liable to stamp duty. Taken altogether, the Report is welcome testimony to the smoothness with which the Act is working, in bright contrast with the confusion which has bemuddled the Insurance Act, and the exasperating anomalies of the Land Valuers' administration of the Finance Act. We should all miss Mr. John Burns at the L.G.B. badly, but if the coming changes in the Cabinet people are talking about transferred him to the Treasury we believe our own grievances and those of others which Mr. Lloyd George so readily postponed the redress of for another six months would soon disappear under the influence of the shrewd and practical common sense of the President of the Local Government Board.

THE CATHEDRALS OF SOUTHERN SPAIN.

It has been said by the ungrateful that Spain has no architectural style of her own. It is retorted by some of the more appreciative, that, in Spain, architecture reflects the history and character of the people to a greater extent than in any other country. It will be admitted by all that the Spaniards' earliest, and strongest, and most lasting expression in art was in building and in sculpture—even by those who contend that the essential ideas thereof have, in the main, been borrowed from other nations. If the Spanish builders and sculptors lacked creative genius, they stamped on their works — on their cathedrals especially — a richness and splendour which, if it did not atone for the lack of reserve and beauty of detail, embodied in florid magnificence the exuberant life of the Spanish people.

There has been no lack of English books on Spanish architecture, nor illustrations thereof in our own volumes. Street and Digby Wyatt, Charles Herbert Moore, J. B. Waring, Henry C. Brewer, and others have given their best of pen and pencil to their appreciation and delineation of the gorgeous examples that capture the imagination of every student. One of the most recent and thoughtful contributions, if somewhat limited in scope, was Mr. J. A. Gade's volume, which we reviewed on Jan. 5, 1912, in the New Year's Number, in which also appeared our reproduction in colour of Mr. Henry Brewer's fine drawing of Segovia Cathedral. This week we have read with pleasure Mrs. Walter M. Gallichan's ("C. Gasquoine Hartley") book, published last Monday by T. Werner Laurie, Ltd., of Clifford's Inn, at six shillings, which, with its numerous illustrations, which include some of the lesser-known examples, will interest all readers. She has previously dealt with the Northern cathedrals, including Burgos, Toledo, Leon, Segovia, Salamanca, Avila, and others, and now devotes herself to those of Andalucia, Valencia and Murcia, Aragon and Navarre, and Catalonia.

The Spanish type of Gothic church was, of course, Gothic development in a land of strong Romano-Byzantine elements, and in many ways retained always the characteristics of the old Romanesque church. The dome or cimborio, its most striking feature, Mrs. Gallichan contends, was not borrowed from France in the first instance, as Fergusson writes, but was one of the many Byzantine features which survived in Spain longer than in any other European country. Similarly, we think those mistaken who have believed that to the Moors Spain owed the horseshoe arch. She had it as early as the second century, and it was used by the Visigoths, whose interesting and still little-known civilisation was of Byzantine origin. When the Moors came to Spain, they found the horseshoe arch already there, and they adopted it, exaggerated it, and twisted it into the graceful and fantastic shapes which survive. It is probable that during the 300 years of Visigothic rule, Spain attained to a higher degree of culture than many suppose, and Senor Gomez-Morreno believes that between the decadence of Roman art and the Moorish invasion Spain developed a phase of architecture quite her own, of which the horseshoe arch was the most striking characteristic. That the arch existed in Persia, in India, and elsewhere in Asia, centuries before the Christian era, is common knowledge. That Spain, centuries before the era of her Mudejar architecture, owed more to the East than to the West is certain. In the fourth century, Constantinople had become the centre of the Roman Empire, of which Spain was a province. During the Visigothic period, constant commercial intercourse with Constantinople was maintained, and in the seventh century we find an important colony of Byzantine Christians settled in Andalucia. As time passed, we find the increasingly indistinct characteristics of Visigothic art amalgamating with and strengthening those of Byzantine and Roman architecture, and developing into the Romanesque, or, as the Spaniards call it, Latin-Byzantine. Its birth coincided with that of the popular religious crusade against the Moors, and with the great church-building period of the Alfonso of Castile. Many of the Romanesque cathedrals then erected were, it is true, destroyed later, and wholly or in part replaced by Gothic or Renaissance structures; but Spain is still the chief home of the Romanesque church; and still the style most fully expresses the strong, sombre Spanish spirit.

In the second period of the efflorescence of Romanesque art, during the twelfth and thirteenth centuries, the pointed arch appears, the earliest exponents of French Gothic being the Cistercian monks, who introduced the Burgundian type of church. The style never found favour as a whole. Its details—even of construction—were used by the builder, not to replace the old form, but to gain power, to support wide vaultings, and let light in upon the dark naves, in which more and more the civil life of the people found its expression, and in which the elaborate services of the church grew in magnificence. Of such use, the cathedrals of Lerida and Tarragona, and the colegita of Tudela are notable examples.

The Moorish invasion of 712 was followed by four centuries of domination. Hardly emerged in Africa from savagery, the receptivity of the Moors in Spain was marvellous. It is maintained by Senor Lamperiz and others that no new style was brought into Spain by the Moors, but that the special manner in which they adapted what they found there produced that which is known in Spain as "el estilo Mudejar." Certainly, even during the long struggle between Spanish Christianity and Moorish Islamism, the two races had close relations in their arts. And after the reconquest, Moorish builders were largely employed by the Christians, while Christian artisans worked under the Moorish architects. And we find Moorish accessories—artesonado ceilings, stalactite ornament, and mosaics adopted in Gothic, and even in Renaissance buildings—take, for instance, the beautiful tile-work on the exterior of La Veo, at Zaragoza. In the Mudejar building, the style, as in all Moorish art, is decorative rather than constructive. Variety and profusion in ornament give it character; and the brick surfaces, covered with reliefs, some Moorish geometrical, and some Gothic, either sunk in the wall, or cut round it, produce an effect under the dazzling Spanish sky, against which the towers and cupolas stand out, which is as remarkable as it is peculiar to Spain. The oldest Mudejar church now in existence is probably San Roman at Toledo. The examples best known are the two synagogues in the same city, Santa Maria la Blanca and El Transito. Those who wish to learn how this style was modified in turn by Roman, Byzantine, and Gothic influences should follow their researches on geographical lines — Catalonia, Castile, Toledo, Andalucia, and Aragon being the chief centres. The strongest and most splendid examples of Mohammedan influences permeating Christian architecture Spain can show will be found in Aragon. Nothing, even at Granada, can compare with the monuments of Aragon, or with the towers of Teruel, Daroca, and Zaragoza, and the wonderful churches of Calatayad.

There is not much to say about later styles. In the thirteenth century the Pointed style seems rather to have been borrowed from Germany than from France,

the fountain-head, as evidenced by the terms "tudesco" and "estilo gotico," by which it is known. In the cathedrals of this and the following century, such as Burgos, Toledo, and Leon, the design is fundamentally French; and yet not merely the adoption of new and foreign forms, but a gradual combination with the Romanesque of the end of the twelfth century. Thus we find immense naves and widely-spaced piers, quite unlike anything in France—of Italian affinity, Fergusson suggests; but all familiar with the old Byzantine influence will recognise the real inspiration.

The Renaissance, or Græco-Roman, as it is called in Spain, dates back from the end of the fifteenth century. It began with a transition which was Gothic in spirit, although the details were Classic. Thus we find obelisks in the place of pinnacles, and palmettes instead of Gothic floral ornaments, the elegance and delicacy of execution of which suggested works in the precious metals, and the designation Plateresque, from plata, silver. The florid excesses of its later develoments soon gave it its better-deserved title, "estilo monstruoso." With the later history of architecture, and the recent revival of domestic architecture, Mrs. Gallichan does not concern herself in this volume.

That she has intelligently grasped some of the special characteristics of Spanish art we think all will admit. There is, for instance, a practical explanation of the curious ritual arrangements of the cathedrals, unlike anything in France or England—notably the projection of the choir into the nave, the whole ceremonial part of the service, and the choral part taking place in the centre of the church, in the very midst of the congregation. All can see, and all can hear; and nowhere else will the stranger have the same consciousness that he himself is an active spectator of the ceremonies he witnesses. Then there is the Spanish comparative indifference to beautiful exteriors. Almost always the cathedrals are so hemmed in with buildings, that access is difficult to the stranger. Use was the Spanish builder's first consideration, and so his churches were all placed in the midst of the towns. Yet, almost all the towns are built on hills, and the rising steeples and domes give character to the surrounding town as beautiful as it is truly Spanish. Then again, Spain is rich in building stones, varying with the provinces. By the use of the local materials the Spanish buildings correspond with the colour of the land, and the towns are part of the landscape, and not a blot on it. Moreover, the colour effect is heightened by the clear, dry climate, which preserves, but does not age, the buildings in appearance, giving relief to outlines and depths to shadows, and brilliancy of tints that dazzle those accustomed to the chilly colours of Northern climes.

Of the eight provinces of Andalucia, the most favoured kingdom of Spain, Mrs. Gallichan gives us fourteen illustrations, necessarily to small scale, but clear and well printed. Of Valencia and Murcia, there are naturally fewer. Murcia Cathedral was begun in 1523. The tower was not completed till 1760, while the dome was added after the earthquake of 1829. The tower is 310ft. high, square in plan, and so easy of ascent that a horse might go up the spiral staircase without fatigue. In the centre of the tower, about half-way up, is an apartment which was a refuge for the slayers of their fellow mortals in sudden anger, who had incurred the penalties of the law.

At Zaragoza, La Seo, the old cathedral, was probably completed in 1432, as far as the main fabric was concerned. The exterior has been much and badly modernised. A new north-west front was undertaken in 1685. Adjoining this pseudo-Classical disfigurement rises the lofty tower, with its Corinthian columns, but showing the influence of the Late Moorish style. The present termination is modern, the tower having been struck by lightning in 1850.

Probably the chapter on Catalonia is one of the most interesting in Mrs. Gallichan's book. Its description of the buildings of the spiral Catalan style, which disfigured this district of Spain, will almost certainly induce some readers to make the two- to four-week trip from the French border by way of Perpignan and Figueras to Barcelona; thence by sea to Malorca to see Palma Cathedral, and thence to Tarragona, Tortosa, and Reus, taking Lerida and Manresa on the way home. Probably in no other country in Europe can so many churches be seen, in which, as Street himself admitted, "their architects had evidently mastered the first great necessity in church building—the successful treatment of the interior," though he does not seem to have grasped the fact that the builders sought to plan so that an enormous congregation could be in front of one altar, and within hearing of the service.

ROYAL PHOTOGRAPHIC SOCIETY'S EXHIBITION.

The fifty-eighth annual exhibition of the Royal Photographic Society of Great Britain, opened on Monday at the Gallery of the Royal Society of British Artists in Suffolk-street, Haymarket, and on view until October 14, shows a marked improvement on that of last year in the quality of the works hung, and is one of the best in the history of the society. The exhibits this season number 787, of which the odd 87 are lantern and stereoscopic slides, 183 are autochromes, and the remainder are framed photographic studies executed by various processes.

"The Gondola," No. 14, a platinotype by T. D. Ralli, is a byway canal in Venice; near by is an attractive bromoil, "The Abbey Courtyard" (17), by A. S. John Lewis. "Motif d'Architecture" (24), one of half a dozen clever oil transfers by Robert Denachy, is a view along a paved lane of stone faced cottages in a French village; in the foreground on the left an old peasant woman in white cap, grey bodice, and ample skirt, is drawing water from a street tap. The balcony just beyond her gives the needed balance of shadow to the composition. "A Peaceful Vale" (34), a platinotype by John M. Whitehead, is a ferny glade between two plantations of larches. Two other platinotypes near by Nos. 35 and 47 are early morning studies of rising mist in Rome by Mrs. Powles, the one of the Forum, the other of the Church of Santa Maria Maggiore, and a third by the same lady (157) shows the "Pyramid of Caius Cestus and the Walls," from an unfamiliar viewpoint. "Llanwrst Bridge" (46), a carbon by F. Humpherson, recalls a tranquil spot on the Conway, and the steep and narrow stone bridge over that stream. The making as a picture of "La Vienne, Limoges" (50), a carbon by W. Chater Lea, is a gnarled olive with a mass of grey foliage projecting from the left over the opening to a long stretch of river. The deep shadows of "The Gorge at Airolo," just off the southern exit from the St. Gothard tunnel, are recalled by a bromoil by Thomas B. Blow (65), an admirably-selected view point. A colour oil process by Harrop Wright, "A Street in Caudebec" (97), just takes in the apsidal flank of the choir of the florid church. Horace Jackson has also been to the Lower Seine for subjects, and gives us in oil "The Tannery, Caudebec" (60), a peep into a courtyard surrounded by half timbered warehouses; the scenery of "Honfleur" (114), the picturesque "Rue d'Epicerie, Rouen" (122), and "La Porte Nord, Rouen Cathedral" (144); the reproduction of the last subject, a necessarily badly lighted porch, hardly does justice to the wealth of carving and sculpture; illumination for the instant by the much contemned magnesium flashlight would have been justified by better definition. Essenhigh Corke, deserting his flower studies for a while, sets up his camera in a steep side lane on the hill off the High-street at "Hastings," with the chequered tower of St. Clement's as his objective (121), and makes a pictorial success of it. John H. Gear gives a brilliant representation in oil of "Santa Maria Salute," the massively buttressed octagonal white dome looming up beyond the waters of the Grand Canal with the black prows of gondolas sturdily upturned, like the toes of shoes in Edward the Third's day, as a foreground. Coming nearer home again, we have two views in the Strand: the east end of "St. Clement Danes," seen in a passing shower (132), by W. Thomas, and the façade of the "Law Courts" (152), given in sharp perpective, looking Citywards. "Sunlight and Shadow, Cleeve Abbey" (191), a bromoil by J. C. Warburg, is a view across the brightly-lit courtyard of the Cistercian house from the double portal of the chapter-house. H. W. Fincham, in "Via Nassa" (199), gives as a bromide an evening study of the steep colonnaded main street of Lugano, with its open stalls and shops. Of quite another type of subject is "At the Fountain," in bromoil, by Mrs. Ambrose Ralli; an elderly woman is drawing water from a stone tank embosomed in an undergrowth of spring foliage. "On the Thames" (214), a bromide by W. A. J. Hensler, and "Monarch of the City" (256), a bromoil by J. B. Portway, Jun., are each of them attempts to show the dignity of St. Paul's dome, as seen over barges and piles from the Surrey side—the former is the more artistic composition. Another taking subject on the margin of the City is "The Charterhouse Cloisters" (222), a carbon by F. Humpherson. "Sonnenhutte" (235), a gum by Emil R. Magyar, shows on a mountain-side a weather-beaten timber chalet on its stone base; next to it are two Low Country canal scenes with stone bridges—"Old Dordrecht" (236), a bromoil by Alfred G. Buckham, and "A Backwater in Bruges" (237), an ozobrome, by Thomas H. B. Scott. "Bolton Castle" (241), a gum-bichromate by J. Harold Liebreich, shows the dark masonry of the three battlemented towers silhouetted against an evening sky. The interior of the choir of Ely Cathdral as usual provides picturesque topics for many cameras. Edward Pady takes the most popular standpoint in 283, a platinotype, looking down the north choir aisle to W.S.W., and, turning his camera on a pivot to E.N.E., peeps into "Bishop Alcock's Chapel" (699), a view that with a little movement of the tripod further east would have shown more of the prelate's tomb, to the obvious improvement of the picture; R .H. Lawton, in No. 250, looks to W.S.W., down the "South Choir Aisle," a much less effective perspective. Of another class of subject is "Knole Park," a study of the stems of some of Lord Sackville's silver birches, in bromide (251), by W. Harold House. H. W. Fincham give us another of his delightful studies of "Mont St. Michel" by moonlight (267), a bromide; he must now have exausted almost all the possibilities of photography in and around that sandgirt islet, "half-fortress, half church of God." "Homewards" (316) depicts a shepherd driving a flock of sheep at eventide from us along a dusty, winding road; it is a carbon by Grafton Goatley. A sepia japine platinotype (331), by Constance B. Narsden, of a well known exile, "Mrs. E. Pankhurst," who, like a true patriot, seems to have left her country for her country's good, has a passing topical interest, and is excellently posed and executed. "Glen Dochart" has yielded fine landscape studies to Constance Kinder (324) and Peter Orr (337). "The Nave, York Minster" (696), a platinum-toned work by G. J. T. Walford, is harsh in its alternation of sunlight and shadow, and the choice of detail of stiff columnettes is not by any means a felicitous one, when the opportunities afforded by the great cathedral are recalled. "Carolvian Carving at Canterbury" (698), by

William James Smith, is a softly-toned bromide showing one half opened leaf of the doorway in Christ Church gate to the Cathedral, with low-relief foliage carving of the Grinling Gibbon type and period; the choice of position and technique are admirable, as is only to be expected in work by one of the principal members of the staff of the L.C.C. School of Photo Engraving and Lithography, Bolt-court. Perhaps the most charming architectural composition in the gallery is "The Chapel of SS. Michael and George" (700), a bromide by Walter H. A. Fincham. The subject, taken as it is from a little north east in St. Paul's nave, is photographically and pictorially a difficult one; but the heavy teak railing in a foreground of deep shadow, the gilded coffering of the vault, the garish and painfully new banners of the Colonial knights, all melt into a well-schemed composition.

Among the lantern slides, "St. Mary Magdalene Tower," "Old House in Canterbury," and "Reflections, River Wharfe," by F. H. B. Smith, and those by Edmund H. and Mrs. Crouch, of Worthing, are among the best. One of the most interesting and suggestive exhibits in the scientific department is a series of specimens by A. E. Bawtree, of Sutton, Surrey, illustrating the insecurity of intaglio plate printing. Last year, it may be remembered, Mr. Bawtree showed some examples of the simple process by which reproductions can be made, and this season it is carried still further towards apparent identity—so far, indeed, that on a sheet of mixed, genuine, and counterfeit stamps it seems impracticable to differentiate by the unaided eye. The importance of this process in relation to the possible forgery of money orders and bank-notes is obvious, and it is to be hoped that scientific advances in chemistry will in turn devise a non-photographicable tint or surface for the protection of bankers and their clients.

REINFORCED CONCRETE BUILDINGS.

By Wm. G. Shipwright, Licentiate R.I.B.A., M.C.I., Chartered Surveyor (by Exam.)

ST. MARY'S COLLEGE, CHESTERFIELD.

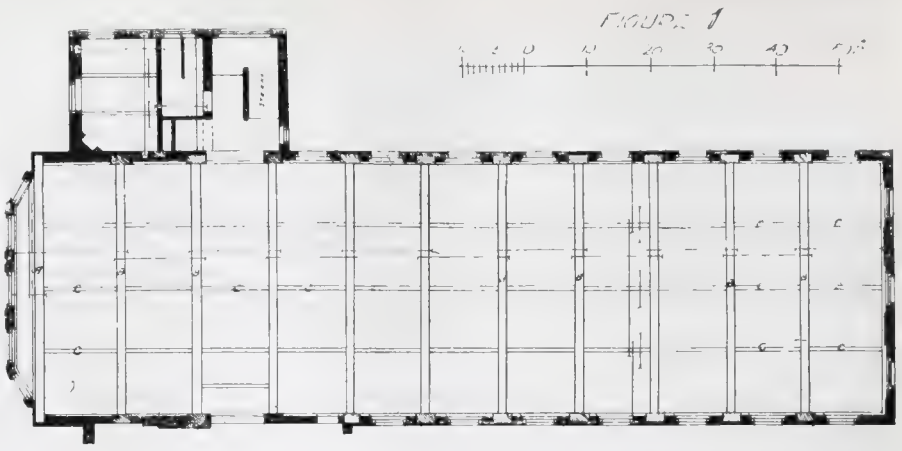
Messrs. C. and C. M. Hadfield, FF.R.I.B.A., Architects.

The extensive additions to St. Mary's College, Chesterfield, add further practical illustrations to the list of reinforced concrete structures. The extensions are being erected in two sections, the first of which is now completed, whilst the second is in hand. The buildings, which are faced in red brick and Wheldon stone, with artificial stone tower and balustrade, will constitute an imposing piece of work, rendered more effective by their dominant position on the crown of a hill.

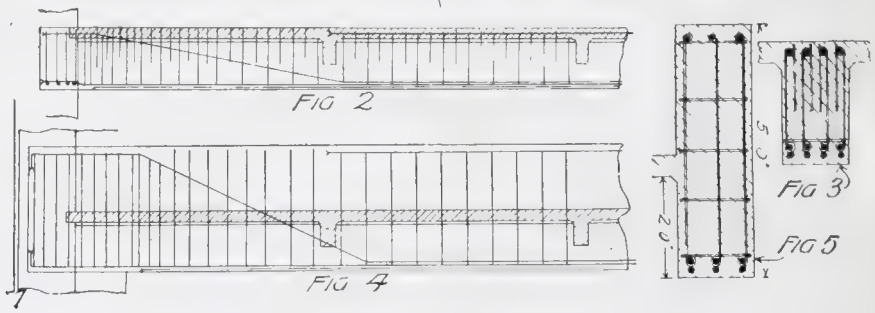
The completed building is an interesting and instructive example, giving large clear floor areas between the walls unobstructed by columns. The general scheme illustrated in Fig. 1 shows the arrangement of beams and lintels employed throughout the structure. The reinforced lintels average 3ft. long by 18in. deep, usually reinforced with four rods. This arrangement ties the piers and walls effectively together in both directions by the cross-beams B and binders C, which link up the whole system of reinforced construction.

The former of these beams has a span of 40ft., and is shown in detail in Figs. 2 and 3. They are 24in. deep and 16in. wide, heavily reinforced with 8 stout tension and 4 compression rods in the centre section. The upper line of tension rods is bent upwards to afford a diagonal shear resistance. The arrangement of the alternately linked hangers and the introduction of horizontal binders renders these beams eminently homogeneous and of immense strength. The smaller beams C are 12in. deep and 6in. wide, with two stout tension rods and linked hangers at 6in. intervals.

One of the most important beams is that occupying the portion marked "A" on plan, Fig. 1. This has a span of 40ft., and supports a very heavy load produced by the floor,

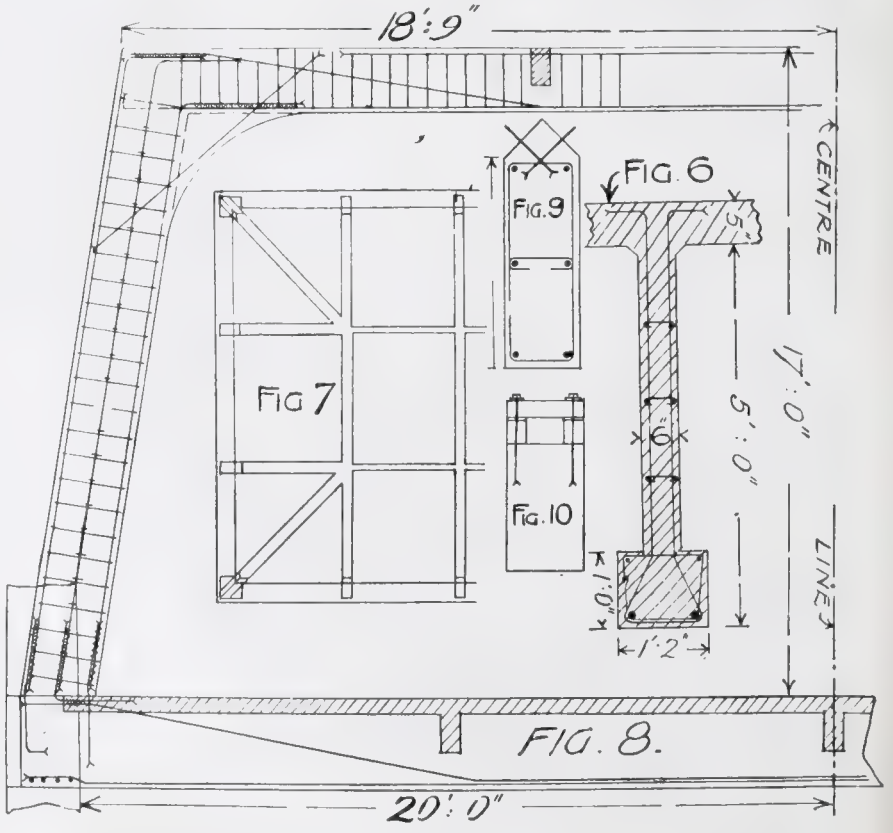


roof, and wall over. The beam is 5ft. deep, and in view of the necessity of obtaining a projection below the floor equal to that of the other main beams (24in.), to secure symmetrical architectural treatment in the room below, this beam is constructed partly on the upstand principle, the floor intersecting it in the position shown in Fig. 4.

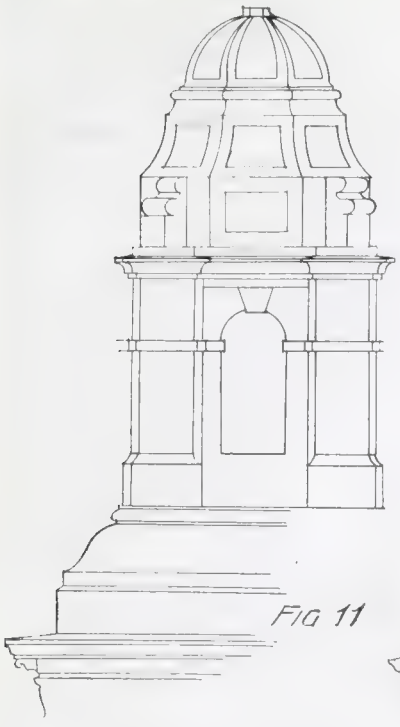


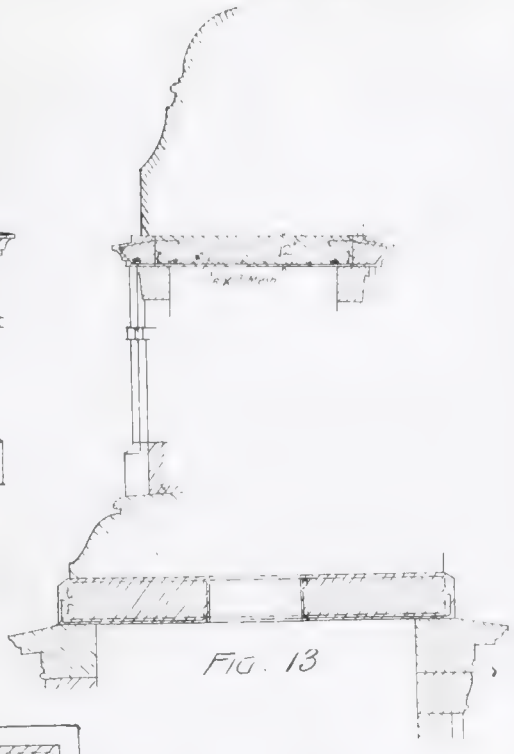
The reinforcement is exactly similar in weight to that of the 24in. beams, but five rows of horizontal bonders are introduced in the positions shown in Fig. 5, on account of the greater depth. Another interesting beam construction, also 6ft. deep, is shown in Fig. 6. The comparison of these beams affords illustration of the adaptability of reinforced construction to the architectural requirements as to the depth and width of any projecting beams which may readily be increased or decreased, practically without additional cost by proportionately adjusting the reinforcement.

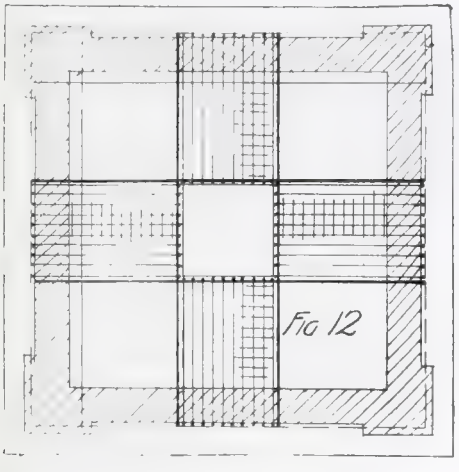
Fig. 7 shows a plan of one end of the roof construction, with hips and principals of reinforced concrete. Fig. 8 shows a detail of this work in elevation, Fig. 9 being a section of the hip, showing the placing of the rods and linking pieces. The bracing of the quadrant angle of the soffit and raker is also interesting. The rods from the hips are turned into the top beam, and all the rods are well tied at the angles. Fig. 10 shows the fixing adopted for the bolts by means of which the wood framing is attached to the concrete work.

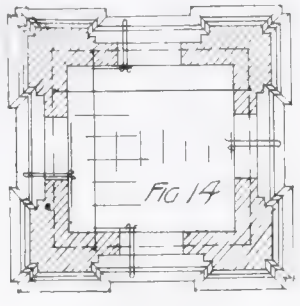


The tower, which is rather an effective piece of work, has been constructed with Messrs. Stuart's artificial stone facing and



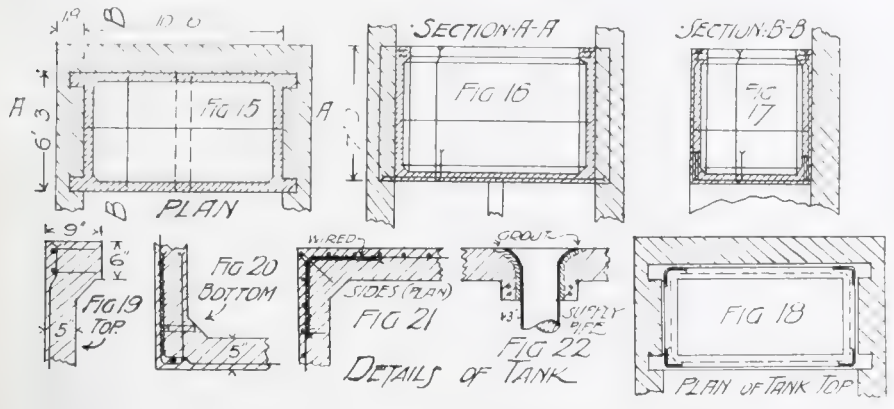






reinforced concrete floors to the detail shown in Figs. 11, 12, and 13 and 14. The lattice of rods are bent round the central opening in the lower floor, as shown in Figs. 12 and 13, and the introduction of stout angle rods make the floor a thoroughly sound piece of work. The upper floor wherein the rods form a lattice, and are bent at the outside edges to form the core for the artificial stone cornice of the tower—also constitutes an arrangement, securing homogeneity in the construction. The plan of this piece of work is shown in Fig. 14.

A useful piece of concrete tank construction is shown in Figs. 15 to 22. Figs. 15, 16, 17, and 18 show the plans and section at various levels, from which it will be seen that the sides are formed in 5in. of concrete, with a complete lattice of rods as reinforcement. Fig. 19 shows a detail of the top kerb. Fig. 20 is a detail of the junction at the bottom of the tank, and Fig. 21 illustrates the tying of the rods at the side. Fig. 22 shows the connection for the outlet pipe, for which an opening is formed in the bottom of the tank, with a pair of small circular rods as reinforcement; the pipe is shaped out and grouted in cement.



The reinforced work, which forms an important addition to reinforced concrete structures, was executed by Stuart's Granolithic Company, Ltd., of 45, Bedford-row, W.C., to the designs of their consulting engineer, Mr. E. P. Wells, under the supervision of the architects, Messrs. C. and C. M. Hadfield, of Cairns Chambers, Sheffield.

CIVIC DEVELOPMENT.*

By His Worship, Mayor Short, Edmonton.

This is a problem which may be looked at from various points of view. First, there is the merely physical growth, the adding of house to house, street to street, industry to industry. Second, the exercise and increase of the powers of local self-government; third the administration of the city's affairs, and the systematising and perfecting the machinery for that purpose. I should prefer to confine myself to the two latter.

THE TOWN SITE.

To begin with, we should ask the Government to provide that no town site shall be laid out or extended upon land not reasonably suitable for the purpose, and not then, unless a reasonable water supply and drainage facilities are possible. Throughout Western Canada town sites have been laid out, often with little or no regard to the fitness of the site itself, or to the possibility of securing these advantages. What is done may not be mended. There is still nearly half of the four great Western Provinces to be taken care of, and let us ask Government to do so. Persons putting town sites on the market should be first required to provide therein water, sewer, and pavements, for these are absolute necessities of civic life. The enormous unearned increment that has been swept away from our citizens in the past ten years by the exploitation of town sites were quite large enough to have provided these improvements.

PROVISION FOR STREETS.

Again, there should be provided streets not less than 80ft. and lanes not less than 20ft., the latter to carry sewer, water, gas, light, telephone, or other wires, and these should be laid out in harmonious relation to each other, and there should be radials capable of extension, so that it would be possible to get to all points of the compass readily from a common centre. There should also be boulevards wider than ordinary streets so as to permit of buildings of a public or semi-public character located to form a view calculated to impress. There should be parks and breathing grounds for rest or recreation scattered regularly throughout the town site. All spaces of special scenic beauty, such as the banks of a river or a ravine with boulevards skirting the same, should be dedicated to the public use. Broken ground, or such places as only with difficulty and great expense could be rendered amenable to general civic purposes, should be likewise retained for parks. It certainly seems unfortunate that lands entailing expense for fitting up far beyond their intrinsic value should be allowed to be utilised for town-site purposes. Provision should also be made that certain classes of buildings and business should in a general way be kept each in its own location.

ADMINISTRATION.

Turning from this more purely physical point of view, one meets the more difficult problem of administration. This is the difficulty of getting trained men. The problem is that of the man. Whether the final executive control is placed in the hands of a board of commissioners, a board of control, a burgomaster, or an executive head under any other name, the problem is pretty much the same. Separate your activities into departments. Chart the duties of all who are required to administer the work, but, above all, get a good managing head for the department. It is easy to get men who will carry out work, but hard to get those who will carry it out efficiently and with economy. Far too little do city authorities realise that they are spending trust moneys. Far too much do they assume that money and economy are last to be thought of. Having thoroughly organised, having chosen heads who have demonstrated their integrity and managing ability, let us then provide for a thorough audit of all expenditures; not by an auditor who is the equivalent of a girl with a comptrometer, but by a real auditor who gets to the bottom of every expenditure

* Before the Union of Canadian Municipalities, Saskatoon, July, 1913.

and the why and wherefore. As his complement, let us appoint an efficiency officer whose duty it will be, not only to see that the work done is such that should be done, and that it is done in the right way, but also that we get a hundred cents worth for every dollar we spend. Let us standardise the method of keeping accounts and of doing work, then let us ask the Government to establish a local government board with general supervision over the activities of all cities and towns whose special duty it shall be to see that our standardisation is made effective.

LOCAL SELF GOVERNMENT.

Turning again to the Government side, one finds a new problem. Local self-government is the legislative problem of to-day. A few years ago powers were dealt out to cities, towns, and villages by schedule, and only those on the list could be exercised. From year to year new needs arose. Demand was made, and grudgingly powers were widened. To-day there is a letting down of the barrier, and it is beginning to be realised that civic government embraces wider fields than were dreamed of a few years ago. In the Edmonton Charter, which in itself is a departure, the powers of the city were defined as being to make laws for "the peace, order, good government, and welfare" of the city. In effect these are the words of authority given to the Dominion Government. The difference in exercise of the powers is merely in the scope wherein they are to be exercised. Under them it is our privilege to grow, to develop in succeeding years. That which seems beyond the powers of the city will, with growing public opinion, become entirely proper a few years hence. What Canadian city twenty years ago would have thought of installing and operating water, light, telephone, street railway system, or providing a prison farm for the weak and neglected? Yet within that time these powers have been granted and acted upon, and that action is looked upon as a reasonable and proper exercise of municipal authority. The people themselves, upon the ground, conscious of their need, can, when charged with the duty, more readily evolve rules and regulations to meet the case than can a parliamentary body hundreds of thousands of miles away. How, then, shall we justify this broadening of powers of local self-government? Let us undertake no activity that is not clearly within the scope of municipal adventure. Let us obtain the right kind of men to administer the powers and responsibilities. Here there is need of educating the public. Too much our best men reserve their activities for the wider fields of Dominion and provincial affairs. Too little they give attention to the possibilities of local self-government. Let us set to work to get out our best men.

CONCLUSION.

How, then, are we to obtain a betterment? Will increasing the powers of a city increase the capacity of its representatives? Experience does not seem to lend colour to that view; still, men strive to be representatives of a class or clique, and still the more experienced and more capable business men are unwilling to face the campaign often of personality and misrepresentation. Until we change that, civic development will not come to its own. There is no system of government which is perfect. The best in the world will fall down in the hands of incapable and irresponsible persons. On the other hand, a crude and unscientific system in the hands of good men will yield good results. One conclusion seems inevitable, and that is, that bureaucratic government is just as dangerous to-day as it ever was, and that no system should be adopted which takes out of the hands of the people and their elected representatives the ultimate authority.

At a special meeting of Dunfermline Town Council last week, the provost, the town-clerk, and others executed a mortgage for £90,000, the amount of a loan from the Public Works Loan Commissioners for the construction of the main outfall sewer from the old part of the burgh through Rosyth to the Forth.



PRIOR BIRD'S CHANTRY, BATH ABBEY.
(From a Sketch by E. M. Hick.)

A NEW HANDBOOK TO BATH ABBEY.*

The Abbey Church of Bath, although historically of high interest, is, structurally regarded, a comparatively modern edifice, for it has been rebuilt to smaller scale than the original building from its foundations since 1500, and, as we know it, was only occupied by the Benedictine prior and his monks for about a generation. Mr. E. M. Hick writes con amore as a man of Somerset and as an architect, and in the excellent little monograph before us, No. 82 of the well-known Homeland series of handbooks, tells the story afresh, and gives, from the viewpoint of a well-trained observer, an independent and lucid description of the fabric. In the historical section the author has wisely devoted attention almost exclusively to the post-Reformation period. The slim volume is illustrated by a large-scale original ground plan, in which certain errors repeated in previous ones are avoided, by measured drawings by the author, two of which are reproduced herewith, by sketches by Miss M. Cuzner, by photographs by Mr. Hick, Mr. Mowbray A. Green, and Mr. Augustus F. Perren, and by a few reproductions of old engravings.

"Architecturally," as the author points out, "Bath is unusually interesting as the only cathedral built altogether in that most English of all periods, the Perpendicular; and being the last great church undertaken in this country during the Middle Ages, it shows the trend of English art before its absorption in the Renaissance." Mr. Hick overlooks for the moment its only contemporary rival, Henry the Seventh's Chapel, which, however, is of totally diverse character. Bath Abbey,† as we now see it, is of very modest dimensions, having but an area of 16,600ft. super. It occupies the site of the nave only of John de Villula's early twelfth-century cathedral, and consists of an aisled nave and choir, central tower, oblong in plan, and very narrow and shallow transepts. Internally the fine proportions give an impression of dignity and spaciousness. The church was approaching completion in 1540 when it and the adjoining monastery were seized by the King's commissioners, and the leaded glass and bells were sold. The Abbey was not roofed-in till Bishop Montagu's time at the beginning of James the First's reign. A restoration was carried out in 1833-4 for the corporation, which cost about £10,000, G. P. Manners being the architect. Between 1868 and 1873, under Sir Gilbert Scott, Bishop Montagu's remarkable carved lath and plaster ceiling over the nave and aisles was replaced by a two-centred stone vault, a replica of that over the choir. Mr. Hick compares the latter vault to the much earlier one at Exeter Cathedral, and shows that the inverted cornices of the Bath vault as composed fit into each other transversely

* Bath Abbey: its History and Architecture. By Edwin Morcombe Hick, L.R.I.B.A. 102pp., with folded plan and numerous illustrations from photographs, prints, and drawings. 1s. net, paper covers; 2s. net, cloth bound. London: Homeland Association, Ltd., 15, Bedford-street, Strand; and Frederick Warne.

† A measured sketch elevation of the west front of Bath Abbey, before the restoration, by E. Garratt, was published in our issue of March 1, 1912; and a double-page measured drawing of Bishop Montagu's tomb, 1618, by F. J. Robinson, was given by us on November 1, 1907.

and are adjacent longitudinally; the purely ornamental tracery is in two orders. The choir screen and the organ above were removed by Scott from beneath the crossing to the west end, opening out the interior, and the nave was reseated in oak. Among the works lately carried out under Sir Thomas G. Jackson, R.A., have been the thorough repair of the west front, undoubtedly the finest and most interesting external feature of the church. The parapets have been renewed, a new figure placed in the central niche below, and the upper one furnished with a new head, while the angels on the Jacob's Ladder on either side, which were reduced to shapeless masses of stone, have been replaced by new ones, Sir George Frampton, R.A., being the sculptor. The flying buttresses to nave and choir have been rebuilt, and open crocketed spirelets with vanes have been substituted for the solid ones built in 1835 on the turrets of the tower and east end. A pierced parapet and



PRIOR BIRD'S CHANTRY, BATH ABBEY.
(Measured drawing by E. M. Hick.)

gable, containing a niche and statue of St. Peter, have been added to the north transept gable. Other important works in progress under Sir T. G. Jackson's direction are the rebuilding of the organ and a marble floor and steps in the sanctuary.

Bath is noteworthy for the great number of its mural monuments, a feature in which it is only exceeded by Westminster Abbey. The six hundred memorial tablets in the church under notice are now for the most part arranged below the aisle windows so thickly as to cover the greater part of the wall surface. The only monument of the Mediæval period remaining, and the finest one in the church, is the exquisite chantry chapel of Prior William Bird (1525), Bishop Oliver King's able coadjutor and successor in the erection of the present church. This chantry, of which we give reproductions of Mr. Hick's sketch and measured drawings, has been built between the choir and the south aisle, beneath the eastern bay of the arcade. It measures 16ft. by 8ft. 9in., and is divided into two bays. In 1833 the chantry was restored by Edward Davis under G. P. Manners, and again by Sir Gilbert Scott some forty years later, and suffered much in both operations.



LADY WALLER'S MONUMENT, BATH ABBEY.
(Photograph by E. M. Hick.)

A striking monument, placed under the end window of the south transept, is the altar tomb to Jane, wife of Sir William Waller, the famous Parliamentarian general who commanded the Puritan forces at the battle of Lansdown, close to Bath. In the foreground the Lady Waller reclines, looking towards her husband, who, clad in mail, rests on his right elbow, gazing outwards. At the ends are two children seated in chairs; behind, under semicircular arches, are two tablets for inscriptions, and over the grave is a pediment carried on black marble columns; above the pediment again is the family coat of arms between two reclining draped female figures.

> Happy, and yet from envy free,
> Learn'd without pride, witty yet wise
> Here the good Lady Waller lies.

The handbook is attractively got up and well produced, and has a useful index.

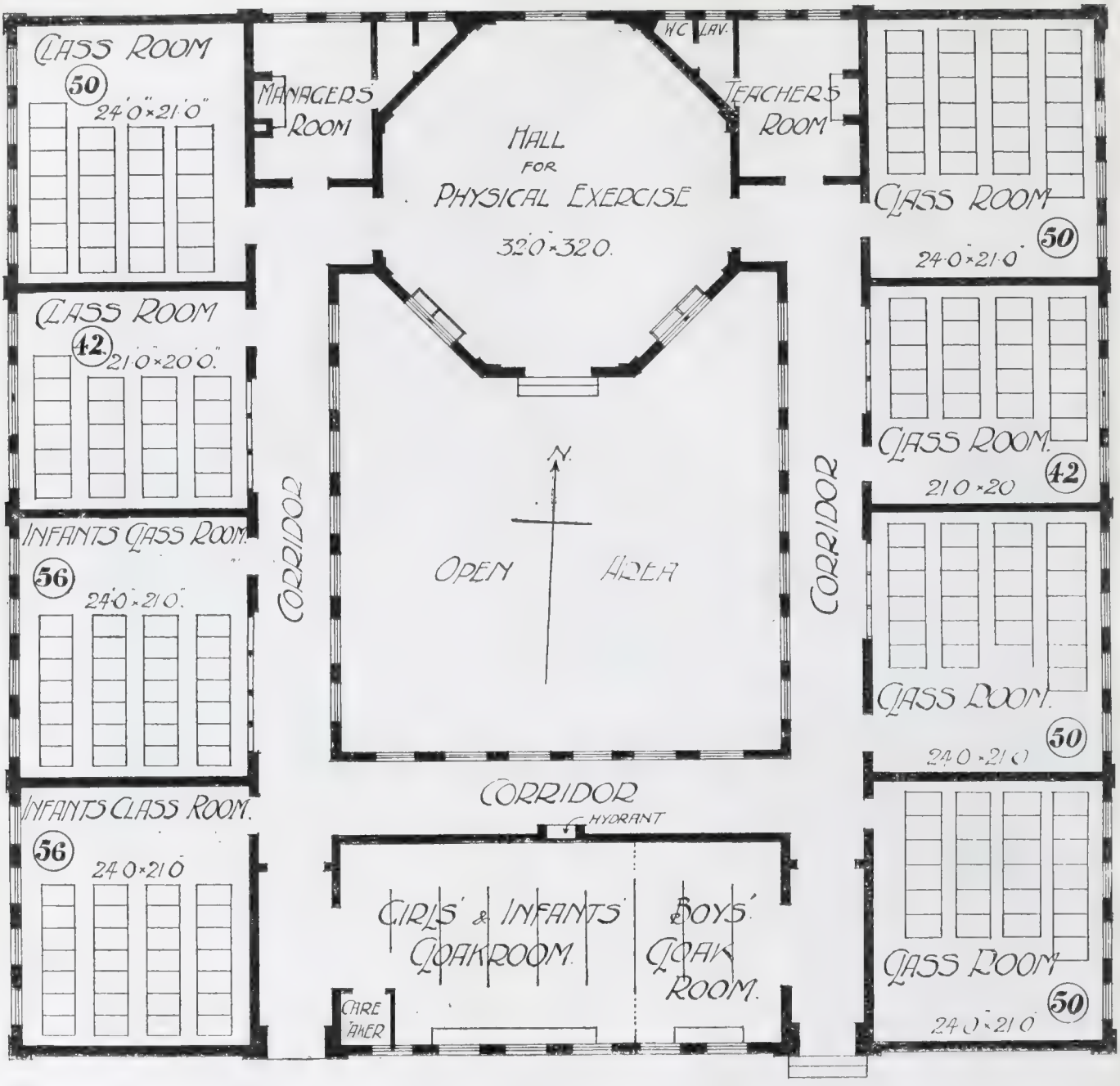
THE AMERICAN CIVIC ASSOCIATION.

A tour through the principal cities of Europe has just been completed by several prominent members of the American Civic Association, London being their last stop before leaving for home. During their stay here, they visited Hampton Court at the invitation of the London Society, and through the courtesy of the Office of Works the galleries were specially opened to the party. The American visitors were afterwards entertained by the society at the Mitre Hotel. Sir Aston Webb presided at dinner, and after the usual loyal toasts, he briefly stated the objects of the London Society, and showed how—under careful guidance—it would become most useful to the local authorities. He complimented the Americans on their activities in civic matters, and said it was largely through their example that the London Society had formed itself.

Following him, the Secretary of the American Civic Association gave an account of their work in the United States and Canada. He thought that most people interested in city planning knew the name of Mr. Daniel Burnham, and that he had laid down a large scheme for the city of Baltimore, which the authorities had now commenced to carry out. In New York, too, the Art Commission had established its authority very completely, so that schemes for monuments and buildings of importance had to receive the approval of the Commission. He thought that in England, now that we have the Town Planning Act, such matters were better managed than in America. They in the States had gone ahead of us in matters of town planning principally because they had so many new cities to lay out. We had to re-plan a great many of our old ones, which was a much more difficult matter. In conclusion, he expressed gratitude to the Press, and hoped town planners would continue to receive its unstinted support.

The Mayor of Chattanooga (Mr. T. C. Thompson) described the enormous strides that had been made by the United States since their re-birth some fifty years ago. One hundred and eighty-six cities were affiliated to the Association, and they were all actively working towards the better planning of their centres. In the course of his remarks he touched upon the Panama Exposition, and expressed the hope that if at all possible England would be represented.

Sir Robert Hunter dwelt upon an important item in city planning, namely the open spaces. He thought the outskirts of London should be closely watched to prevent the accumulation of isolated building sites without any communal existence. In conclusion, the American Consul General (Mr. Griffiths) expressed the opinion that England had the most delightful climate and the worst weather of any country he ever knew! He was eloquent also on the desirability of



COUNTY OF NORTHUMBERLAND ELEMENTARY SCHOOL, STAKEFORD.
Mr. G. Topham Forrest, Lic.R.I.B.A., Architect.

securing the co-operation of women in civic movements, and stated that it was difficult to over-estimate the good influence they had had on such work in America, in spite of some of their delightful inconsistencies. In case anybody had never heard of an artistic American, he reminded the company of the fact that the second president of the Academy (Sir Benjamin West) was an American, and that it was Whistler who discovered the Thames.

NEW SCHOOL AT STAKEFORD, NORTHUMBERLAND.

The school was opened on Tuesday of this week by County Councillor A. McHugh, before a large assembly. It has been carried out from plans, under the supervision of Mr. G. Topham Forrest, architect to the Northumberland County Education Committee.

The building is of red bricks, with green slated roof, the classrooms having wood block floors and tiled dadoes.

Pit workings under the site called for special consideration in the construction, the foundations being of reinforced concrete, and the walls built 10in. thick, with a cavity, and reinforced in the bed joints with wire. The school comprises an octagonal hall for physical exercise, the corridors radiating from it and connecting up the classrooms and entrances, the whole being arranged around a rectangular courtyard. The cloakrooms are placed on the opposite side to the hall, so giving the classrooms the best aspect, south and east. The school accommodates 284 mixed and 112 infant scholars.

The contractors were Messrs. R. and A. P. Tait, of Seaton Delaval, and the contract price was £4,698.

The ruins of Croxden Abbey, Staffordshire, with the surrounding farm of 421 acres, have been sold to Mr. W. H. Verdin, of Winsford. Until recently, the site formed part of the North Staffordshire estate of the Earl of Macclesfield. The Abbey was founded in 1176.

THE TRADE TRAINING SCHOOLS.

An endeavour to improve the technique of the crafts connected with the building trades by instructing the men who actually earn their living by their labours therein is being made at the Trades Training Schools at 153, Great Titchfield-street, W. The schools are maintained by the associated Worshipful Companies of Carpenters, Joiners, Painter-Stainers, Plasterers, Tylers and Bricklayers, and Wheelwrights, the Rev. C. Blakesley Bartlett, of the Carpenters' Company, being the chairman of the joint committee, and Mr. Herbert Phillips Fletcher, F.R.I.B.A., F.S.I., the director.

The report of the judges on the work of last session states, in the Carpenters' Class, the work generally was good, and much of the unfinished work showed promise. In the Masons' an improvement was manifest upon the work of last year. In the Painters' Class the number of students was less than in former years, but the attendance had been good, and the work executed of varied cha-



SPECIMENS OF WORK DONE IN THE SMITHS' SHOP, TRADES TRAINING SCHOOLS.
(Mr. H. Phillips Fletcher, F.R.I.B.A., Director; Mr. F. W. Porter, Instructor.)



SPECIMENS OF WORK DONE IN THE STONE-CARVERS' SHOP, TRADES TRAINING SCHOOLS.
(Mr. H. Phillips Fletcher, F.R.I.B.A., Director; Mr. A. Broadbent, Instructor.)

racter. A gratifying revival was displayed in the Plasterers' shop, and regret was expressed that more accommodation could not be found for this trade. The Plumbers' work shown was very creditable, and reflected the greatest credit upon all concerned. In the Smiths' Class, the work exhibited was in advance of anything previously shown, and the class had the honour of obtaining the Banister Fletcher medal, awarded to the best craftsman in the school; this medal, with £2 in books, was gained by Harry Collins, Alfred Taylor receiving the bronze medal and 15s. in books. The Stone Carvers' Class maintained its reputation, and the work exhibited was consistently good. A special prize of £2 in books was given to a former silver medallist, John William Drake, and the silver medal and £2 in books to Frederick Hedges. (We illustrate herewith some of the work done in these two last-named classes, under the instruction respectively of Mr. F. W. Porter and Mr. A. Broadbent.) In the Life Class, the work showed considerable improvement, and in that of the Tylers and Bricklayers the work generally was quite the best ever exhibited in the class. In the Wheelwrights' also, the number of students in attendance was in advance of the previous year, as was also the number of exhibits, though there was much unfinished work. The character and quality of the work had been maintained. The judges were also pleased with work exhibited by the Wood Carvers' Class.

The new term of the schools, which are open only to those actually engaged in the trades taught, will commence on Monday, September 15.

UNSATISFACTORY HOUSING, AND ITS PREVENTION.*

EXISTING HOUSES.

Legislation in respect to housing recognises, apart from the sanitary authorities, but two interested parties; the "occupier," whom generally there is little difficulty in defining, and the "owner" or "landlord." The latter term, appearing for the first time in housing law in the Act of 1909, affords a better clue as to the legally responsible party. Sections 14 and 15 of the Housing Act, 1909, provide for houses of specified rentals let after the passing of the Act by which the local authority may require landlords to put such houses in a condition reasonably fit for occupation or to close them, and in default the local authority may after a specified time do the work required to be done and recover the expenses from the landlord as a civil debt, or, if they think fit, declare such expenses to be paid by annual instalments within a period not exceeding "the interest of the landlord in the house," nor in any case five years with interest not exceeding 5 per cent. per annum. The foregoing sections as regards property, the landlord of which is owner in every sense of the word, is all-sufficient, but it may safely be estimated that with more than one-half the privately owned cottage property in this country one of the following conditions exists: — (1) The "owner" has life-interest only; (2) the property is mortgaged; or (3) is copyhold under conditions that make the landlord's financial interest of little value. Whether the ownership is in fee simple and without encumbrance or otherwise, the local authority have the power to require repair or demolition of insanitary dwellings, but the enforcement of these powers leads to further local problems: shortage of dwellings or hardships on the poorer owners. The former is provided in the powers given to local authorities as to the erection of working-class houses, but these powers are not readily enforced, not necessarily owing to the apathy of the councils, more probably owing to the objection of the majority of the electorate. The desire for leniency towards the owner of little substance may be actuated by motives of policy as well as of humanity; cases are recorded where the closing of insanitary cottages led to the admission into the workhouse not only of the former inmates of the dwelling, but also of the owner. The aged owner with a life interest has little to mortgage should he wish to raise the funds necessary to carry out the repairs; possibly the next heir may assist, but he is not necessarily a relative, and in either case may be indifferent to present needs. Under the provisions of section 257 of the Public Health Act, 1875, as also under the Private Street Works Act, the sum recoverable from the owner may be made a charge against the property payable by annual instalments for a period not exceeding thirty years, at an interest not exceeding 5 per cent. per annum; whilst this period can reasonably be accepted for average quality property, it is not suggested as a standard for dwellings that will probably fall into a bad state of repair before the final payment on the original works of repair has been made; but cases of this description might be met more fully by empowering the sanitary authorities to execute the necessary works, and declaring the cost to be an annual charge on the premises for such period that the repayment of principal and interest shall not exceed a sum equal to a defined proportion of the rental value. Often with mortgaged cottages it is found that the mortgage reaches and occasionally exceeds the value. Less than twenty years ago small speculators made abnormal returns by buying slum property at a nominal sum, patching up, and mortgaging to purchase others ad infinitum, and until the passing and enforcement of stringent legislation in respect to housing, the rents not only paid the mortgage interest, but supplied the mortgager with a good income. Generally it is found that the speculator of past years has disposed of his interest at an enhanced value to investors poor in wealth and business ability, and these are the people from whom housing inspectors hear the pitiful tales that, having paid mortgage interest and cost of repairs required by the local authorities, they are without an income. This mortgage difficulty, as suggested by some authorities, might be prevented by an Act of Parliament limiting cottage mortgages to one-half, or less proportionate value, or, a better suggestion, that with the consent of interested parties the local authorities should have power to purchase the fee-simple at a fair price that would allow a remunerative investment. The "customs" of copyhold are so varied that volumes might be written on their part in the problem of housing. The "fines" in many cases are but nominal sums, but the instance described will illustrate how the actions of William I. affect housing in the reign of King George V. In the case recorded the "landlord" had the advice of an expert valuation surveyor who had specialised in small property, and it will give an idea of the position of the impecunious and unadvised landlord:

Four cottages at death of copyholder "valued		£120
Next heir paid "admission"		35
" " "enfranchisement"		135
" " "land tax redemption		26
" " sanitary improvements		120
		£436
Two cottages sold freehold	£155	
" " valued (reserve)	245	
	£400	Loss £36

Assuming this property was valued too highly in the first instance, and its value to be £84 (120-36), the cost of admittance (£35) and enfranchisement (£135) would remain unchanged. The essential point in the above is the fact that had the sanitary improvements been carried out before enfranchisement, the latter would have cost a further sum of £74, as, although the lord of the manor could insist on the copyholder executing building repairs, he could not require the laying of drains, providing closets, sinks, etc., but if done voluntarily, or under compulsion by the local sanitary authority, the value of manorial rights increased proportionately. The copyholder, under the Copyhold Enfranchisement Acts, can claim the right to enfranchise, but, if in poor circumstances, his difficulties can clearly be seen, and might be averted by the local authority purchasing his interest. It is not the purpose of this paper to advocate the municipal purchase of cottage property, but in illustrating cases where deadlock occurs, there appear but two courses open to local authorities: (1) to close and demolish; (2) if so empowered, to purchase the rights of small owners without the means to execute sufficient works, to obtain the fee-simple, and then put the premises in habitable order. The great obstacle to municipal ownership of property, other than any of a political nature, is that felt equally, but in varying degrees, by the private owner undesirable tenants. Some people make a slum habitation a picture of cleanliness, others transform the best of dwellings into pigsties. Effective legislation is required for the tenant who can, but will not, live as a human being. This type is the principal cause of conflict between owners and tenants as classes, and possibly could be dealt with by "landlords" and their agents establishing a system of cross-noting, so as to detect unsatisfactory tenants before letting their houses, or requiring tenants to produce certificates of satisfactory tenancy from former landlords. Most housing inspectors can point out unsatisfactory tenants, but often find it difficult or impossible to deal with them. In dealing with existing houses, it is penny-wise policy to carry out half measures. It is useless to close a house if there is no other for the tenant to occupy, else admission to workhouse or overcrowding results. A case in point: in an isolated area there were two cottages, one in an insanitary condition, the other fit for habitation. The closing of the former led to two families occupying the latter, and whereas at first there was a family in the sanitary and another in the insanitary cottage, the action of the sanitary authority made two insanitary cottages—one closed, the other occupied by two families. It is generally advocated, should the local authority acquire property, that it be new. To be self-supporting, this naturally demands higher rent than old, or, in other words, more accommodation can be found in older houses for a specified rent than in new, and when such property can be put in order, this is the better course, considering the ratio of rents to wages. The proposal for the construction of State-aided cottages, if carried out, would increase rather than cure the difficulties, for there is a multitude of questions, to which section and to what locality should State aid be given. The labourer living in his own cottage would be worse off compared with his fellow in a State-aided dwelling, and the employer who has provided suitable houses for his men would be at a disadvantage with a rival whose employees were housed by the State. The nationalisation of dwellings would, by the country at large, be viewed with apprehension; but it is certain that no half measure would in any way be successful, for the whole theme of the proposition would be the relieving of a particular industry by giving it a bonus equal to a definite number of house rents. National or municipal owned dwellings should be let at such rents that, if not making a profit, they be, at least, self-supporting; ofttimes the cry of high rents should be modified to low wages. If an area covered with dwellings be unsuitable, the condemnation of the cottages is imperative; but otherwise there are many dilapidated dwellings that could be purchased at a fair value, made habitable, and let at remunerative rents. The common defects in these are: bad drainage, absence of suitable sanitary arrangements, dampness, insufficiency of light, defects allowing passage of wind and water. New drainage is greatly increased in cost when separate drains are required for each dwelling, and the author's experience, taking all factors into consideration, is that combined drains properly constructed should be accepted. The insertion of horizontal damp proof courses present no difficulties, sheet lead, bituminous sheeting, or double courses of slate, are easily fixed; where vertical damp-proofing is required, slates, cementing, or suitable cavities are equally effective. The provision of light should never be accepted in half measures; the attic bedroom with window-top below 6ft. in height (often less than 4ft.) should never be passed, whatever the width may be. Dormers covered with zinc, roofs, and slated sides may be made wind and water tight at small expense; absorbent bricks can be made impervious according to their condition by slating, cement rendering, or painting. A building irregular as to vertical and horizontal lines, but not unsafe, can be rendered tight and improved in appearance by coating it with roughcast.

(To be continued.)

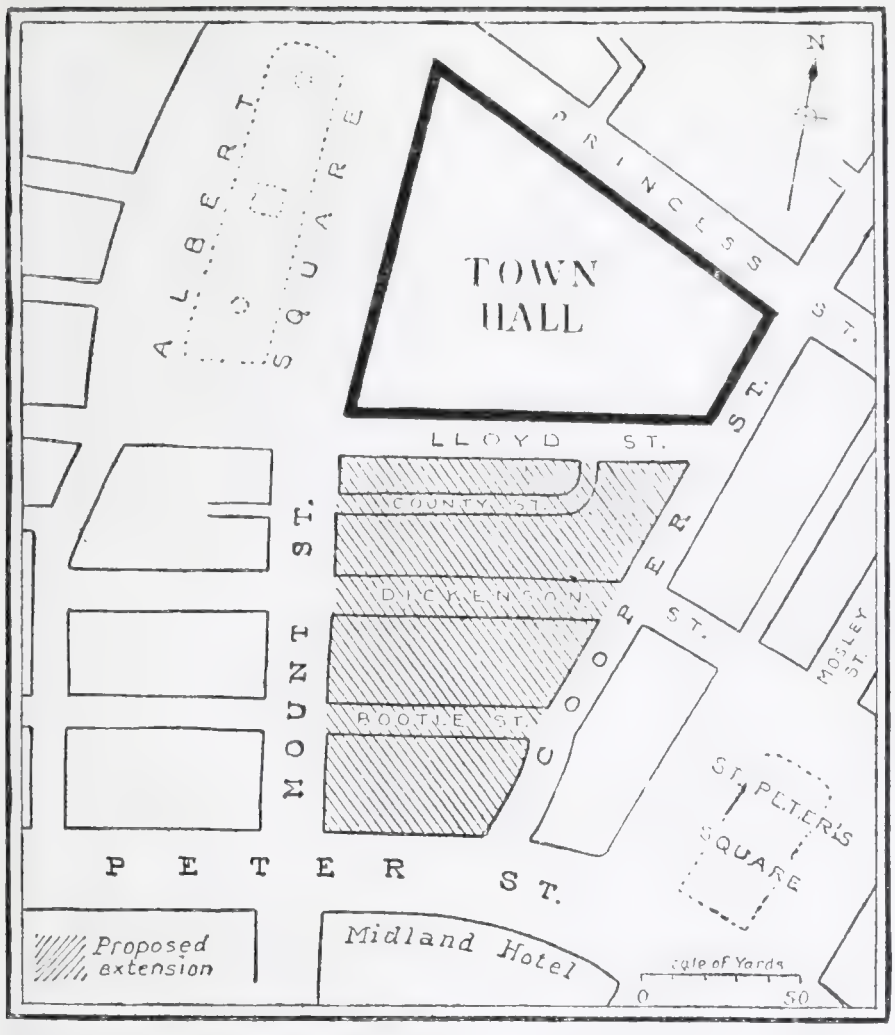
* A paper read by G. Beckham Harfield, Surveyor to the Alton Urban District Council, at the Conference held by the Institution of Municipal and County Engineers at Great Yarmouth, July 16 and 17, 1913.

WHAT IS UNDEVELOPED LAND?

In September, 1910 (says a correspondent of the *Manchester Guardian*), I bought the house in which I live. It forms part of an estate near the tram terminus in Palatine-road. It was then quite new, building operations having commenced in the previous February. A few weeks ago I received a demand note from the Inland Revenue for undeveloped land duty on the property from February, 1910, until September, 1910—i.e., the period during which the house was being built, and during which I did not even know of its existence!

I replied that I did not hold, and never had held, any undeveloped land, and therefore could not be held liable for any undeveloped land duty. Moreover, I did not know of the existence of the property until September, 1910, and therefore could not be held liable for any tax on it prior to that date. This morning I have received a letter in which occurs the following:—

"I am directed by the Commissioners of Inland Revenue to acquaint you that they must hold you responsible for payment of the duty outstanding, notwithstanding that the liability attaches for a period



prior to the date of your acquisition of the land."

(Please note that it is a house standing on land that I bought—not undeveloped land.) It is rather remarkable that it has taken the Government officials three years in which to make the claim.

If a man can be held liable to pay a tax on something which he doesn't possess, and of which he doesn't even know the existence, we have arrived at a remarkable stage in Liberal finance. Also, if land on which a house is in course of erection is called "undeveloped" land, it were well for us to have a dictionary revised up to date.

Are the Government anxious to create more passive resisters? If they are going to adopt the above method of increasing the revenue, they will undoubtedly lose the support of many of those who, in the past, have been their firm supporters, and of whom I am one.

[Inquiries made by the *Manchester Guardian* show that the duty was levied not as from February, 1910, to September, 1910, but from April, 1909, to March, 1910.]

MANCHESTER NEW TOWN-HALL SCHEME.

A £600,000 SCHEME.

The town hall committee of the Manchester Corporation have devised a scheme for extension of the municipal offices in and near Albert-square, at a cost, roughly estimated, of £600,000—not a million and three-quarters, or a million, as the London dailies, with their usual expansiveness in figures, whether it is strikes or anything else, stated yesterday. The committee suggest that the city council should endeavour to obtain Parliamentary power to purchase all the land and buildings between Lloyd-street, Mount-street, Cooper-street, and Peter-street, and, after clearing the site, erect thereon an annexe to the present town-hall, which shall meet the corporation's needs for another half-century or more. If the council agrees to this, clauses will be inserted in the next Parliamentary Bill promoted by the corporation.

STATEMENT BY THE CHAIRMAN.

At the close of the meeting on Wednesday of the town-hall committee, the chairman (Councillor Derwent Simpson) made the following statement to the Press:—

For some considerable time past the town-hall committee, as the responsible committee, have had under their consideration the question of the provision of additional accommodation for the staffs in the various departments of the corporation, the present accommodation in the town-hall being totally inadequate. Even with the use of additional premises in different parts of the town the congestion is in no wise removed. The necessity of providing some solution to meet the difficulties involved is becoming imperative.

The town-hall committee have submitted more than one proposal in the past, but have failed to suggest any remedy that met with the complete approval of the council.

They have now decided to ask the special Parliamentary sub-committee to include in the Parliamentary Bill, which is to be submitted by the corporation next session, certain clauses that will give the corporation power to acquire the land and buildings bounded by Lloyd-street, Cooper-street, Peter-street, and Mount-street for the purposes of erecting extensions to the town-hall and providing accommodation for the various staffs. This will also enable the corporation to carry certain much-needed street improvements into effect.

The scheme, if carried out, will provide all the accommodation necessary for many years to come. Of course, before anything of a definite nature is done the whole question of cost and the plans will have to be dealt with by the council.

The members of the committee, we understand, were not unanimous in recommending this scheme to the consideration of the city council. But there is no doubt that further accommodation is needed. The present town-hall cannot be made to provide all that is needed. The council chamber is an instance. When it was built 36 years ago the city council consisted of less than 70 members. Now the council numbers 140. The accommodation for the public and the Press is also inadequate. The sanitary department, which comprises the medical officer of health and his staff, has been crowded out of the building, and have to rent offices in the adjacent civic buildings. And the tramways department has, almost from its creation, had to rent a building in Piccadilly, away from the town-hall. The same remark applies to the education department in Deansgate.

If the new scheme is carried through there will be ample space for a properly equipped council chamber, framed on modern lines—that is, so that every speaker will have his face to the chair, and there will be no need, as there is now, for a considerable number of members, if they want to address their fellows, to turn their backs on the Lord Mayor and the reporters.

On the question of cost, it is urged that it will be relieved by the saving of several thousands of pounds yearly now paid in rent for municipal offices, and the improvement committee will contribute perhaps £100,000 for the privilege of widening the streets.

THE QUESTION OF SPACE.

The area of the present town hall is 8,648 square yards. That of the land proposed to be purchased is said to be not less but more by a few hundred yards. The town-hall was opened in September, 1877. Its cost was £1,062,565. Nine years were spent in its erection. It is not proposed in any way to interfere with the existing town-hall. The streets that intersect the block of buildings between Lloyd-street, Mount-street, Peter-street, and Cooper-street will be closed, but Lloyd-street will be retained almost as wide as it is now, for light and air purposes. Nothing, however, but passenger traffic will be allowed in it.

At Friday's meeting of the Southmolton Rural District Council it was decided to apply to the Local Government Board for sanction to borrow £600 for the Bishopsnympton water scheme.

The official opening of the King's graving dock at Singapore was performed by Sir A. H. Young, Governor of the Straits Settlements, on Tuesday. Prior to the ceremony the Governor invested Mr. J. R. Nicholson, the engineer, with the insignia of Companion of the Order of St. Michael and St. George. The dock, which is the largest east of Suez, is 879ft. by 100ft., and 34ft. deep.

Mr. J. Pulteney Tolland has been appointed acting deputy-director of surveys in the Uganda Protectorate. Mr. Tolland was trained as an engineer with Messrs. Preston and Johnson of Bradford. In 1903 when he was chief engineering assistant for the borough of East Ham Mr. Tolland was appointed by the Colonial Secretary to be an irrigation engineer in Ceylon, and he has since been transferred to the Uganda Survey.

At a meeting of the Coventry City Council on Tuesday a scheme was adopted for widening a portion of Hill-street, just above St. John's Church, where the rebuilding of shops is to take place. The improvements will abolish two of the worst courts in the district, and will give a start to securing a widening of Hill-street. It was also decided to purchase a strip of land in Narrow-lane, Foleshill, in order to widen that accurately-named street.

The fourth exhibition of the Toynbee Art Club was opened in the Whitechapel Art Gallery on Saturday afternoon, and will close on Saturday week, September 6. Formed in 1896, the club has now a membership of over 90. Mr. David Murray, R.A., succeeded Mr. Alfred Parsons, R.A., last year as president of the club. The exhibition comprises 235 works, of which quite two-thirds are water-colours. The other exhibits are chiefly black-and-white drawings and studies in oils.

Another step has been taken in the direction of the proposed Humber tunnel between a point at Paulthan Hill and Soxhill on the Lincolnshire coast. The advisory committee, composed of members of the Hull and Grimsby Corporations, and influential merchants, have met for the first time, and are arranging for the formation of a syndicate to carry the matter through Parliament. They have appointed as engineer Mr. R. Elliott Cooper, and as contractors Messrs. C. H. Walker and Company, Ltd., of Westminster.

Currente Calamo.

The town hall committee of the Manchester Corporation have decided to recommend the city council to seek Parliamentary power to acquire the block of buildings bounded by Lloyd-street, Mount-street, Peter-street, and Cooper-street, near the town-hall, for the purpose of building municipal offices. The town-hall is too small for the needs of the corporation, several departments having to be housed in other places. The scheme, if carried out, is estimated to cost £600,000; but there will, on the other hand, be savings in the cessation of renting buildings, as now, in other parts of the city. We regret to note that our contemporary, the *Manchester Guardian*, disapproves of the scheme recommended, declaring that for the cost thereof the corporation could put up a fine new art gallery and free library, provide all the additional accommodation required for municipal offices, redeem its promises, and honour its past resolutions, and incidentally save £250,000 in addition. We are not well enough acquainted with the facts as yet to express any opinion; but we hope Manchester will not have to wait for what it so badly needs. We illustrated the present town-hall, of which Mr. Alfred Waterhouse, R.A., was the architect, in our issues of July 7, 14, and 21, 1876, and gave a detailed plan of the main staircase in our number for December 14, 1888.

That somewhat obsolete institution, the Trades Unions Congress, meets on Monday, and the usual window-dressing has been visible enough for the past three weeks. Something has to be done to ginger-up the non-union workman to a sense of his stupidity in not joining the ranks of the saved; hence the scare-heads in the daily papers about the "150,000 skilled workmen in the building trades" who are to strike in support of the painters, who have never been able to form a strong union, and of the labourers, who say nasty things about some of their "leaders." The strike at Messrs. Mowlem's job in Piccadilly fizzled out last Monday. The painters might have had their rise ere this on terms somewhat similar to those which have satisfied the carpenters and bricklayers, but it suits some of their leaders to keep the sore open. The Federation of the Building Trades has been a stale sermon for a generation, and these terrible examples of the folly of those who don't believe in it—and the more highly skilled trades don't, one bit—are being manufactured to point the moral and adorn the tales to be told for the *n*th time next week. The truth is the building trades are more sectional than any other great group. And the more highly skilled and better-organised industries, while quite ready for war when real occasion arises, are for the most part served by shrewd and practical union officials. These are not likely to waste their funds on the tin-pot toy fights of the badly-organised branches, which cannot secure the adherence of their own members, and fancy it is the first duty of the big unions, which by courage and discretion have won recognition, to fight the battles of the failures.

"An Imaginary Building Estate" is the romance of a police report, which we give on another page, full of mysterious morals for the thoughtful. The mere facts were that the accused, being hard up, took one room, as a "surveyor," at a good address, and thence sent out circulars to builders inviting tenders for the general repair, from time to time, and the upkeep of about five thousand shops and dwelling-houses at Chelsea, Balham, Streatham, and elsewhere, and forming part of the "Palmer Estates." No doubt the circular was prettily printed, and, in a most business-like way, it went on to say that the work was to be done according to schedules, for which a "deposit" of one guinea only was asked for each district. What could be fairer? And two builders, doubtless finding things rather slack, rose to the fly, wrote for schedules, and sent cheques for £3 3s. and £2 2s. Then it turned out that the "Palmer Estates" did not exist, and the five thousand shops and dwellings were as imaginary as those displayed upon the plans of Eden described in "Martin Chuzzlewit." So the genius who conceived the scheme was convicted and punished. But what a commentary upon the present state of business in the building trade! How many architects, surveyors, solicitors, and builders are there nowadays, we wonder, still waiting wearily for the materialisation of an "imaginary building estate" that turns out later as a mere mirage?

"A Comedy of Costs" is the only title that truly fits the report of a case gravely argued out in the Court of Appeal (July 23, 1913). There was a lease with a covenant not to assign unless the lessor's consent should be "unreasonably" withheld. Lessee applied for consent; lessor's lawyer refused any license to assign, and then said he would take up references. Lessee, full of fight, thereon issued writ for a declaration that lessor had unreasonably refused consent. Then lessor wrote references unsatisfactory, and would not accept proposed tenant. Thereupon lessee executed assignment, and this bright little action went on merrily. At the hearing, before Mr. Justice Joyce, he held lessor's refusal unreasonable, and granted declaration asked. So far, all well. But the Court of Appeal reversed this ruling—held that, on the references, the lessor's declining was quite reasonable, and that the action should not have been brought! Meanwhile the lessor had knocked the bottom out of the case by taking rent from the tenant he had so rightly refused to accept as assignee! So there was nothing left but the costs, which will all now have to be paid by the party who so light-heartedly romped in with his writ. Truly a comedy; but a comedy of errors somewhere. It seems to have been rather a pretty game of bluff between the lawyers, and it went very well so far. Even now there is the House of Lords, if the plaintiff is not feeling a bit tired of the whole business.

The lesson of the Board of Trade Railway Returns for 1912, issued last Friday, is not far to seek. The railway companies have put up rates and fares all round to passengers and traders; they have made a million and a quarter more profit, and they have lost nearly thirty-two million passengers. Wherever possible the passenger is deserting the railway for the motor-car, the tram-car, and the motor-bus. It is particularly noticeable that while the companies taxed the third-class passengers to the extent of £631,000, they have scared 1.7 per cent. of them away. The traders are using motor-lorries wherever it is possible, and will do so more and more. It is common knowledge that the Government—tardily, and some say unwillingly—will be forced soon to consider the appointment of a Royal Commission to investigate the increasing gravity of the situation. Ten years ago we said the outcome of that inquiry would be railway nationalisation. To-day, as we have said more than once lately, we incline to doubt it. The financial outlook renders nationalisation improbable on any paying-out basis that can satisfy shareholder or taxpayer.

While Mr. Lloyd George is dilating on the value of golf, the anomalies of the land duty steadily increase. One particularly exasperating case is detailed by a correspondent of the *Manchester Guardian*, which we reproduce on another page. The complainant bought the house in which he lives in September, 1910. It had just been built and a few weeks ago he received a demand for undeveloped land duty, as he says, from February, 1910, to September, 1910—that is, for the seven months before he had anything to do with the house, and while it was being built. Our contemporary, however, states that the demand note was for duty as from April, 1909, to March, 1910—that is to say, for the year before building operations began. So although the complainant's interest in the land only began after it had begun to be developed, he is taxed for its undeveloped state in the year preceding his purchase. The case of the Inland Revenue officials is that they have power to do that under section 19 of the Act, which distinctly says that any unpaid duty "shall be recoverable from the owner for the time being." Anybody, so the officials say, may be made, in fact, to pay, not for himself, but for the last owner. It was surely never meant to penalise the owner in a case like this? The professed object of the development duty is to stimulate building or other profitable improvement on land of high value for such purposes, and the duty was to fall on the owners of such land who were piling up future wealth by holding land back from profitable use. The officials seem to have deliberately set themselves to wreck the land taxes. Moreover, the Act says that unpaid land duty shall only be recoverable from the present owner "if it is assessed not more than three years after the expiration of the year for which it is charged." The year for which it was charged ended March, 1910, and the date of the demand note is June 25, which is outside the three years' limit. But it seems that notices of assessment were sent to the owner on February 25, seven days within the three years' limit, but were returned by the Post Office because they were wrongly addressed. The Revenue officials first violated the spirit of the Act by trying to assess, and later, even the letter of it, by assessing after date.

"A Building Code," by F. W. Fitzpatrick, formerly of the U.S. Service (London: Crosby Lockwood and Co.; 4s. 6d.), is a compilation of building regulations covering every phase of municipal building activity, with special emphasis on fire-preventive features. It is probable that here on this side we are ahead of our American brethren, if not always beneficially, as regards the multiplicity of our building regulations, at least in our attention to methods of fire-prevention, and that Mr. Fitzpatrick's treatise of some 120 pages will be principally of use in America. Still, an active and intelligent observer who has seen the game from outside, so to speak, here and all over Europe, as Mr. Fitzpatrick has done, seldom fails to suggest points of comparison advantageously, and the volume is well worth perusal.

If the *Daily News'* "strange story" about the "fiasco" in connection with the Crystal Palace "King Edward Memorial Fund" is true it justifies the doubts which we expressed at the time of its inception in June, 1911. It is stated that a total of £6,162 was subscribed by the public. Of this, £1,790 was returned to subscribers who stipulated for the return of their guineas in the event of Lord Tenterden's scheme not going through, or who disagreed with the council's proposal to hand over the balance to the Lord Mayor's Crystal Palace Fund, and have received 8s. back for their guinea. It is understood that some dissatisfied subscribers who insisted earlier got 14s. out of their guinea back. A cheque for £500 has been sent to the Lord Mayor's Fund, and it is estimated that there will be another £60 or £70 to go to the same fund when the King Edward National Memorial Fund is definitely closed. The expenses of administering amount to considerably over £3,500. A few items of expenditure are given:—

Stamps	£1,317	12	8
Printing, stationery, &c	801	6	7
Wages .. .	487	13	4
Rent of office, &c	266	4	11
Advertising ..	145	11	2
General expenses .	157	5	6

In October, 1911, Lord Tenterden offered to contribute £5,000 collected for the King Edward Memorial Fund to the fund Lord Mayor Sir Vezey Strong was trying to raise to pay a deposit of £21,000 on the purchase price of the Palace to prevent its being sold by auction. He offered the sum conditionally on the life-membership ticket promise under which the money had been subscribed being respected; but the Lord Mayor declined to receive the contribution conditionally, and Lord Plymouth stepped in and bought the Crystal Palace for resale to the public later. Lord Tenterden's scheme dropped out of the public mind until the small subscription of £500 to the present Lord Mayor's Crystal Palace fund has drawn attention to the very large expenditure incurred in raising and disposing of the £6,000 contributed to the National Memorial Fund.

Messrs. Robert Kearsley and Company, Limited, held their first annual convention at Ripon on August 13, 14, and 15. Although the firm is represented in many foreign countries and most of the colonies, those attending the convention were from the United Kingdom only. Two interesting and profitable days were spent at the works in discussing various matters in connection with the Trade. On Thursday evening the firm entertained those attending the convention to a dinner, followed by a smoking concert, and on the following day the party started off early in the morning for a long motor tour through Wensleydale, luncheon being taken at Aysgarth and tea at Richmond. The institution known as a convention is one which we owe to our American cousins, but the value of such gatherings has long since been recognised in the United States, and is becoming daily more appreciated by the more progressive British firms. Such gatherings, combining as they do business with pleasure, are not only the means of creating friendships amongst the representatives themselves, but give added strength and unity to a concern. One of the ideals of Messrs. Robert Kearsley and Company, Ltd., in their more recent development, is what may be described as the "team spirit," and undoubtedly the camaraderie which results from such a policy, and from the happy relations which exist between the firm and their staff as a whole, has contributed in no small degree to the striking success which the firm has achieved of late years.

As a result of the deliberations of the shareholders' committee which was appointed in connection with one of the large fireclay combinations not a thousand miles from Leeds, it is not unlikely that the personnel of the board will undergo change in the near future. It is some time since the company paid any dividend to the ordinary shareholders, and we doubt whether the board will find themselves in a position to recommend any dividend when they meet to discuss the balance-sheet to-day. What they will also have to consider is the resignation of the managing director, which was handed in this week. Considering the important part taken by this gentleman in the formation and management of the company, it will be interesting to note whether his resignation will improve matters, and whether the resolutions which will be submitted at the annual general meeting will, if adopted, materially improve the prospects of the company. In any case, we wish it a return of prosperity.

Barnsley Town Council have decided to arrange for an open architectural competition for the new town-hall.

The county council of Cambridge have received the sanction of the Local Government Board to borrow £10,000 for five years for the reconstruction of the main road from Royston to Newmarket.

Baroness Beaumont, of Carlton Towers, Selby, laid the foundation-stone, on Saturday afternoon, of the new Roman Catholic schools which are to be erected at Selby at a cost of from £4,000 to £5,000.

Plans have been completed for a sumptuous chapel for the University of Pennsylvania. The building will be placed on the campus of the institution at Philadelphia, and is estimated to cost at least £100,000 sterling.

Mr J. H. Bell has just resigned his office as chief sanitary inspector to the Epping Rural District Council after 40 years' service. In all Mr. Bell has been a sanitary inspector in different parts of the country for 56 years.

The city corporation of Sheffield have received the sanction of the Local Government Board for borrowing £79,700 for the extension of the Neepsand generating station, and £20,971 for street improvement purposes, and £25,000 for sewerage work.

The corporation of Southend-on-Sea have instructed their General Purposes Committee to consider the provision of a new town hall and municipal offices. The corporation sanctioned the proposals for improvements to the pier estimated to involve an outlay of £19,000.

It is proposed to build at Harwich a Y.M.C.A. institute at a cost of about £10,000. It will provide accommodation for from 200 to 250 men. On the ground floor there will be a common room, reading, writing, billiard and games rooms, library, restaurant and temperance bar.

The gaunt roofless eastern and northern walls of the 12th-Century presbytery and Lady-chapel of the Priory at Tynemouth, which form such a striking landmark from the sea and coast, are now enveloped in scaffolding, preparatory to pointing and repair works, to be carried out by H.M. Office of Works.

At the expense of Mrs. Hugh Stannus, the widow of the well-known architect who was Alfred Stevens's favourite pupil, bronzes have been cast from plaster models of boys' heads by Stevens, and have been presented to the Tate Gallery. Stevens's half-length portrait of W. B. Spence has also been added to the collection in the gallery.

An inquest was held at Bowness on Friday on Michael M. Harrison, of Lancaster, land surveyor, aged 25, and Walter Hodgson, of Witherslack, bank clerk, who were killed on the previous Wednesday night while motor-cycling on the Kendal-road at Bowness by collision with a motor-car. A verdict of accidental death was returned.

PROFESSIONAL AND TRADE SOCIETIES.

A.A. SCHOOL OF ARCHITECTURE.—The curriculum of the School of Architecture of the Architectural Association for this session, 1913-14, has just been issued. Mr. Robert Atkinson, A.R.I.B.A., has succeeded Mr. H. P. G. Maule as head-master. The lecturer on Theoretical and Practical Construction is Mr. C. E. Varndell, A.R.I.B.A., and the day school masters are, first and second years, Mr. Alan Potter; assistant, Mr. W. M. Keesey, A.R.C.A.; third year, Mr. Robert W. Cable, Ancien Elève de l'Ecole des Beaux-Arts. Mr. James Buyers Scott is the master of the evening school. The other lecturers are: Greek and Roman Architecture, Mr. Theodore Fyfe, F.R.I.B.A. Mediæval Architecture, Mr. Aymer Vallance, M.A. Renaissance Architecture: Mr. W. H. Ward, M.A., A.R.I.B.A. Professional Practice: Mr. A. O. Collard, F.R.I.B.A. Life Class Instructor: Mr. E. Constable Alston. Water-Colour Class, Mr. H. F. Waring. The Registrar is Mr. B. Scott Holmes, B.A., 18, Tufton-street, S.W. Membership of the A.A. is compulsory for all students attending the day or evening school or lectures. The fees are:—Day School: First year, 15 guineas per term. Second and third years, 16 guineas per term, in each case including all demonstrations and lectures. Evening School: Preparatory courses, including lectures, 4 guineas per term. Third and fourth years, including lectures, 5 guineas per term. Fee for course of instruction in the Evening School for the preparation of R.I.B.A. Testimonies of Study (exclusive of lectures), 2 guineas per term, or 5 guineas per session.

NORTH STAFFORDSHIRE FIELD CLUB.—Some sixty members of the North Staffordshire Field Club had an excursion to the Ridwares on Saturday, under the leadership of Mr. A. Scrivener, of Hanley, a former president of the club. From Rugeley Junction the party motored to Hamstall Ridware, where portions of the parish church date from 1130. The visitors were met by the rector, the Rev. J. O. Coussmaker, who explained the architectural details. There is some glass in the church dating from the 14th century, and the east window is a replica of one now in a church at St. Heliers, Jersey, which was awarded first prize at the Paris Exhibition in 1869. Three windows in the north aisle date from the time of Henry VII. The chain with which the old Bible was fastened is also preserved here. Near the church are the ruins of the old manor-house of the de Ridwares, a great Saxon family, who preserved their possessions after the Conquest. The property has been in the possession of the family of Lord Leigh, of Stoneleigh Abbey, since the reign of Elizabeth. Mavesyn-Ridware Church was also visited, the Rev. E. Jobson, rector, meeting the party and pointing out the features of special interest. There are traces of 13th century work in the building. The founder's tomb Hugo Malveysin is in a richly-moulded recess in the north wall. There is also a tomb to a Malveysin described as a Crusader, and another to a Malveysin killed at the Battle of Shrewsbury, 1403. Near the church is the gateway of the ancient manor-house, which tradition says was originally an oratory granted by the Bishop of Lichfield to Dame Johanna Malveysin.

The Longford county surveyor, Mr. Gunnis, has decided to withdraw his resignation and will apply for an increase of salary.

Mr. Thomas Rawcliffe, surveyor to Clitheroe District Council and registrar of births and marriages for Chipping, was found dead by the roadside near the Lower Hodder Bridge, Clitheroe, on Friday morning. An overturned trap was about fifty yards away with the horse grazing near by. Mr. Rawcliffe had apparently been dead several hours.

Orange-street Congregational Church, Leicester-square, which Sir Isaac Newton's house adjoins, and has stood for about 220 years, is about to close its doors. The church was built by the French Huguenots, and Toplady, who wrote "Rock of Ages," occupied its pulpit amongst others. An appeal is made for funds to assist in rebuilding the church.

Our Illustrations.

NEW SCIENCE MUSEUM, SOUTH KENSINGTON.

The new building will be erected partly on the site of the old museum, the eastern portion of which has already been demolished. The old South Kensington Branch Post Office, accommodation for which has been provided in a building at the corner of Exhibition and Imperial Institute-roads, designed for the joint use of the Post Office and the Meteorological Office, and some temporary structures, have also been recently removed to make room for the eastern block of the new museum building, which, when completed, will extend from Exhibition-road to Queen's-gate between the Natural History Museum and the Imperial College of Science. The first portion to be erected, and for which tenders are now being obtained, will occupy approximately one-third of the site, and the remainder will be left for future extension. The principal façade to this eastern block will be to Exhibition-road. When complete, the exhibition space will consist of three large roof-lighted halls, 200ft. by 100ft., with surrounding galleries on the first and second floors lighted partly from the sides and from a central lighting well 126ft. by 40ft. and 78ft. high. These large halls will be connected by entirely side-lighted galleries. Other galleries will be provided on the third floor extending over the whole building. The eastern block will contain two of the three roof-lighted halls with a block of galleries to the north and a portion of the connecting galleries to the west. The museum offices with a conference-room and an entrance from Imperial Institute-road will also be proceeded with at once, and museum workshops with storage space for exhibits, will be provided in the basement. The principal entrance to the eastern block will be from Exhibition-road, and when the building is complete there will be another entrance from Queen's Gate. Arrangements will also be made for a public entrance to the museum from the existing Metropolitan District Railway subway to South Kensington Station. It is intended to exhibit the larger and heavier objects, such as locomotives and engines, on the ground floor of the new building. This floor will extend over the whole area, and for the largest exhibits the central part of the large hall in the roof-lighted space will be available. The ground-floor galleries will be about 22ft. in height, and the remainder about 20ft. Throughout, the gallery windows will be about 7ft. above floor level, to afford uninterrupted wall space for exhibit cases. Electric lifts placed in the staircase wells will be provided for the use of visitors, and access to the various galleries will be made as direct and easy as possible. The building will be warmed by a hot-water system. The total floor area for exhibition purposes to be provided in the complete building will be about 377,500 superficial feet. The structure generally will be of reinforced concrete with external walls of stone and brick. The façade to Exhibition-road and part of the south front will be faced with Portland stone, excepting the entrances and the lower balustrades, which will be of granite. The roof slopes will be covered with small green slates, and the windows throughout will be provided with metal sashes. In the architectural treatment of the exterior efficient lighting of the galleries was the chief factor to be considered, and in view of the purpose for which the building is to be erected, a simple and dignified result has been aimed at by the architect, Mr. R. J. Allison, A.R.I.B.A., of H.M. Office of Works.

BIRMINGHAM HOSPITAL FOR CHILDREN.

This building, now being erected, fronts Ladywood-road. The central or principal block is devoted to administrative purposes. It consists of five floors. Entering on the ground floor, the corridors leading off a central hall give access to secretarial offices, committee- and board-rooms, male resident medical officer's quarters, dispensary, sewing department, nurses' recreation- and cloak-rooms. The main staircase leading from the central hall gives access to the upper floors. Upon the first and second floors are chiefly allocated rooms for the female resident medical officers, matron, nurses' dining room, servants' recreation-room, and the nurses' and servants' bedrooms; whilst upon the third floor is arranged the cookery department, comprising a large central kitchen, around which are grouped the smaller rooms, such as the scullery, larders, dairy, grocery and crockery stores, cooks' rooms, etc. This department, being centrally situated, gives convenient service by means of lifts to the several dining-rooms, and also to the patients' ward blocks. Advantage is taken of the fall in the roadway to form a lower ground floor to this block, which is chiefly set apart for X-ray and other electrical treatment. Here are also rooms for the resident porter, cycles, and general stores. At the rear of the administrative block, upon the ground-floor level, is the reception department, where incoming patients are examined prior to entering the wards. The wards for patients are planned in two pavilions, inclined at an angle towards each other, to give shelter from the cold winds. In the centre, joining up the two pavilions, are placed the main staircase and central lift for conveying the patients to the upper floors. The pavilions are three stories in height, thus giving six ward units, three being for medical cases, and three for surgical cases. Each ward unit comprises one large ward containing fourteen beds, one small ward containing five beds, a single-bed observation ward, and a small three-bed high-temperature ward for changing dressings, giving a total accommodation of 138 beds. With a view to the application, as far as possible, of open-air treatment, the south fronts of the large wards are to be fitted with collapsible screens which will allow the whole frontage of the wards being thrown open to the sun and air. At the junction of the two ward pavilions, and one story above the level of the top wards floor, is placed the operating department, approached by means of the main staircase and central lift. Convenient provision is made for future extension of both the wards, pavilions, and corresponding administrative accommodation. Lower down the site is a separate laundry building, under which are placed the heating-boilers and engineering department, whilst a small adjoining block will be devoted to pathological work. For the present it is proposed to carry on the out-patient work in the existing building in Steelhouse-lane; but sufficient area of the new site is set aside for the erection of an out-patient block in the future. In the meantime, accommodation is temporarily provided for the treatment of out-patient minor operations in rooms set apart for the purpose in the main administrative building. Architecturally, the buildings will be of the Renaissance style, executed in red sand-faced bricks with stone dressings. Mr. F. W. Martin, of Colmore-row, Birmingham, is the architect.

THE TOWER AND SPIRE OF ST. MARY-LE-BOW CHURCH, CHEAPSIDE, E.C.

This famous steeple has always ranked among the best, and certainly it is the most famous, among Sir Christopher Wren's clever and original compositions. It measures 235ft. high. Bow Bells have always enjoyed peculiar fame, and as early as 1469 the Common Council of the city ordained that a closing-time bell in the old church tower should ring nightly when the traders in "the Cheap" ended their business for the day at nine o'clock at night. Only those citizens plying their callings in the ward of "the Cheap" constituted the true "cockneys" in London. The great Norman crypt of "St. Marie de Arcubus," or Le Bow, in "West Cheaping," formed the foundations on which Wren erected this new church after the Great Fire, and hence arose the name of the "Court of Arches" given to the highest Ecclesiastical Court of the Archbishop of Canterbury, which in Mediæval times met in Bow Church. So it was the title of "the Dean of Arches" came about. The parish remains the premier one of the Deanery, and it is exempt from the jurisdiction of the Bishop of London. The "Bishops-elect" of the Province of Canterbury take the oath of supremacy in this church before their consecration. A staircase in the porch leads to the Norman crypt, where some of the old columns were partly walled-up, to give strength on which to carry Wren's superstructure; but in one portion of this still extensive crypt the Norman pillars are standing with their arches complete. The accompanying illustration was reproduced from a drawing by Mr. William Toogood, who won the Royal Academy Silver Medal for the perspective delineation of this subject. The diagrammatic projected lines on the several plans are accounted for by this reason. Our photo-lithographic plate, which has been in hand for a good while, was overlooked; but its value and the interest of the illustration remain undiminished. Many, no doubt, will be glad to possess a copy. A sheet of measured drawings of the sister church tower and spire of St. Bride's, Fleet-street, on which Sir Christopher Wren also bestowed particular pains, will be found illustrated in the Building News for September 1, 1911. This reference to that number will be useful in connection with the present one.

HOUSE AT STEEPLE ASTON, OXFORDSHIRE.

The site for the house occupies a high piece of land overlooking the village of Steeple Aston, facing due south. The walls are being built of roughly-squared stone, dug on the site, and the roof will be covered with green Westmorland slates in graduating courses. The attics contain two large bedrooms and boxroom. The stables and engine-house are in a detached building at the rear, and separated from the house by a stable-yard. The house and stables will be lighted by electricity, the power being also used for pumping water from well. Instead of boundary fences, low stone walls will be built, with ground filled up to top at back, and box hedges planted. Mr. William A. Daft, A.R.I.B.A., of Oxford, is the architect.

The town council of Richmond, Surrey, have under consideration a scheme for widening Sheen-road at a cost of nearly £3,000.

A stained-glass window which has been placed in Goldenhill Parish Church in memory of the late Sir Smith Child, Bart., was unveiled on Sunday. Sir Smith Child was the founder of the church. The window, which is the work of Messrs. Heaton, Butler, and Bayne, has for its subject "Abraham giving tithes to Melchizedek."

According to the local press, the Board of Governors of Canterbury College (N.Z.) have approved of the scheme for the extension of the college buildings at an estimated cost of £20,746. The work includes the provision of a library and store-rooms for 20,000 books, a lecture-theatre, a physics laboratory, hot-water heating for college block, etc.

Work has been commenced on the East Haddon village hall, which is being erected by General and Mrs. Horne as a memorial to the late Lieutenant Blacklock. The architects are Messrs. P. and T. Coleridge, of London, and the building is being carried out by Messrs. Wakeford and Bosworth, of Daventry. There will be a room about 40ft. by 20ft., with cloak-rooms and kitchen attached. The exterior will be rock-faced, with Duston stone.

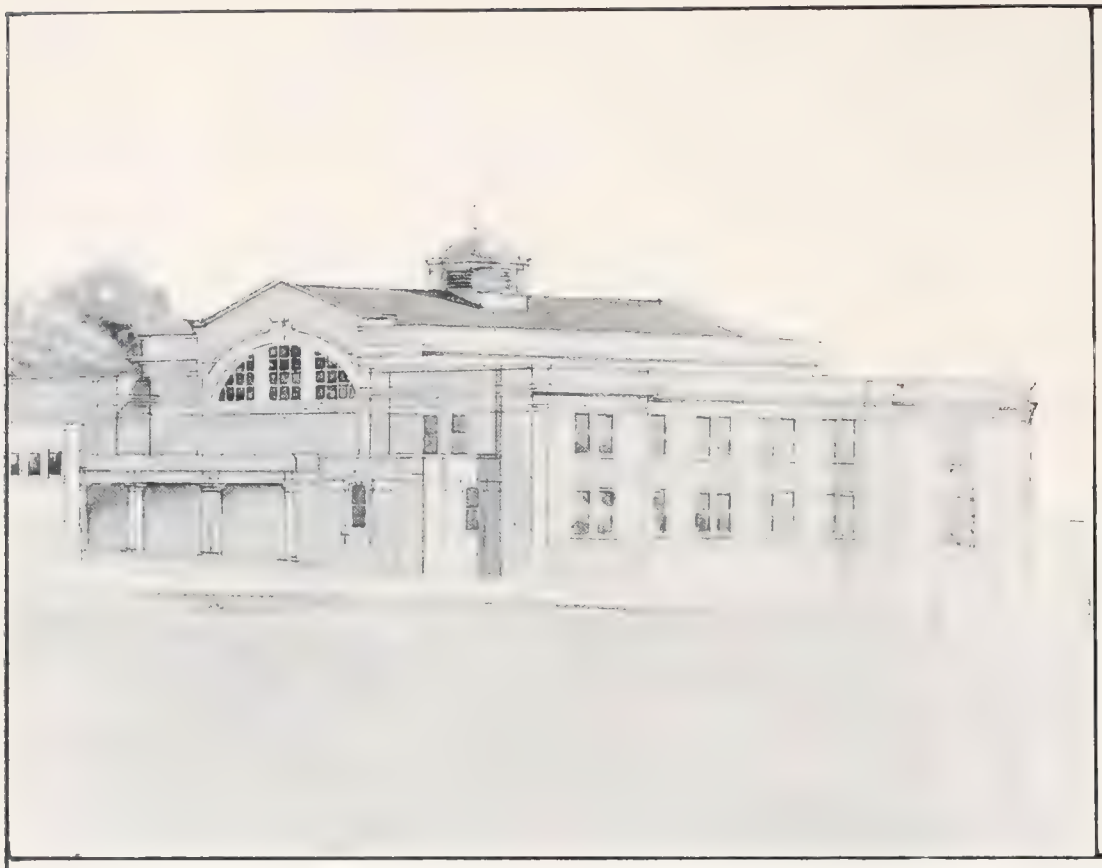
During the past three years the parish church at Trimingham, East Norfolk, has been undergoing restoration at the cost of about £300. Included in this work has been the re-roofing of the nave and tower, re-flooring the nave and chancel, restoring the south porch, building a boiler house, strengthening the belfry, colouring and cleaning throughout. These works having been accomplished, it was decided at a vestry meeting to repair the organ and to enlarge the present vestry, and to make it an organ-chamber and vestry combined. Messrs. Norman and Beard, of Norwich, will carry out the works to the organ. The architect for all the works has been, and is, Mr. George Mee, of Norwich.



NEW SCIENCE MUSEUM, SOUTH KENSINGTON.



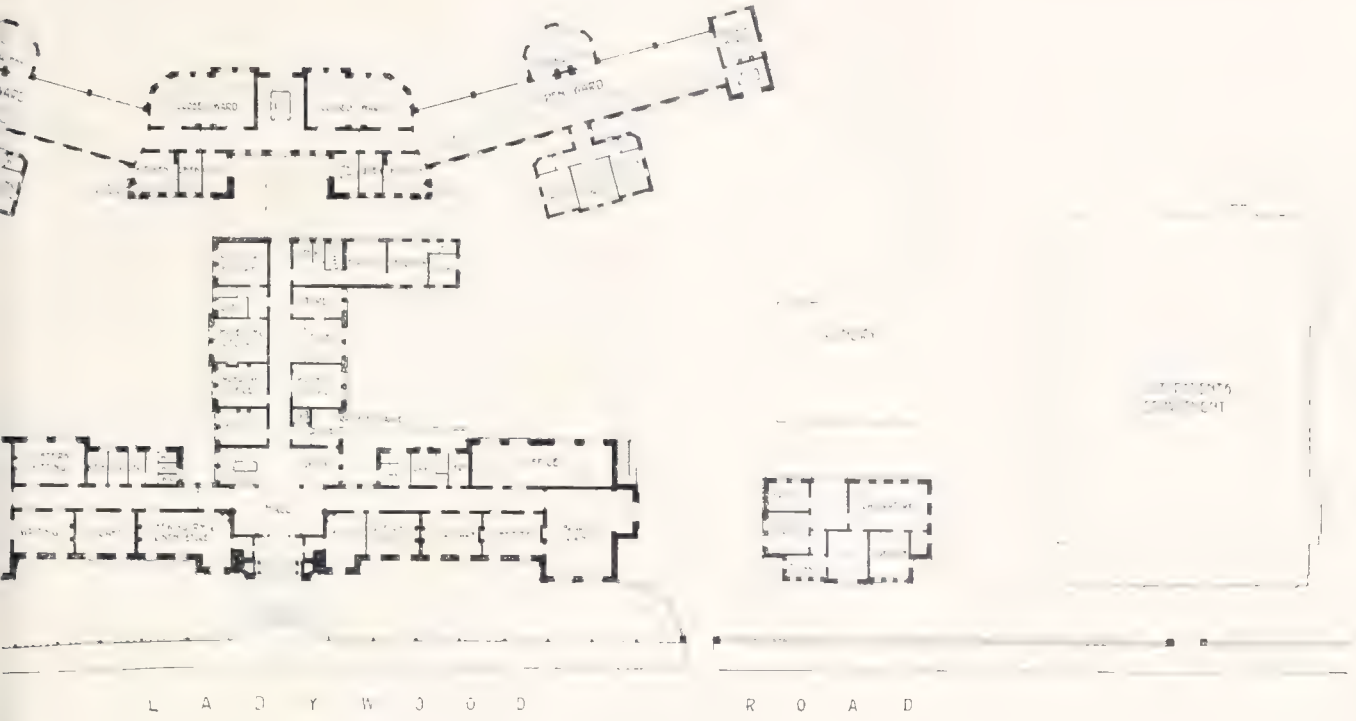
R. J. Allison, A.R.I.B.A. (H.M. Office of Works), Architect.







NEW CHILDREN'S HOSPITAL, BI





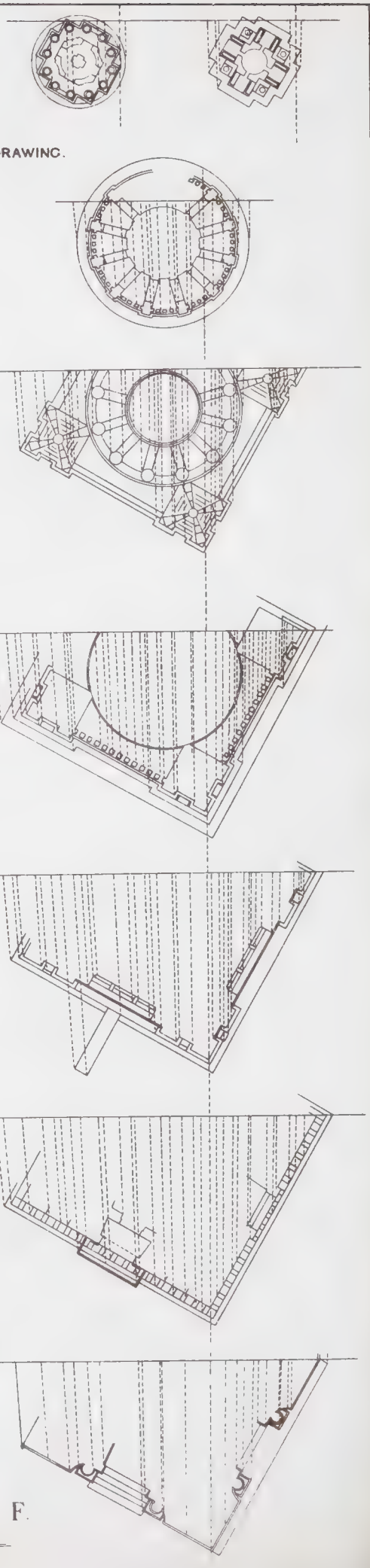
NGHAM.—Mr. F. W. MARTIN, Architect.

THE · TOWER · AND · SPIRE · OF ST MARY-LE-BOW ·

ROYAL ACADEMY SILVER MEDAL DRAWING.

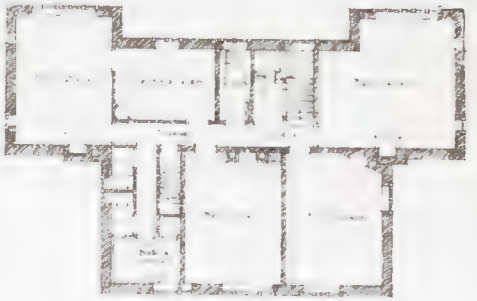
DRAWN BY WILLIAM TOOGOOD.





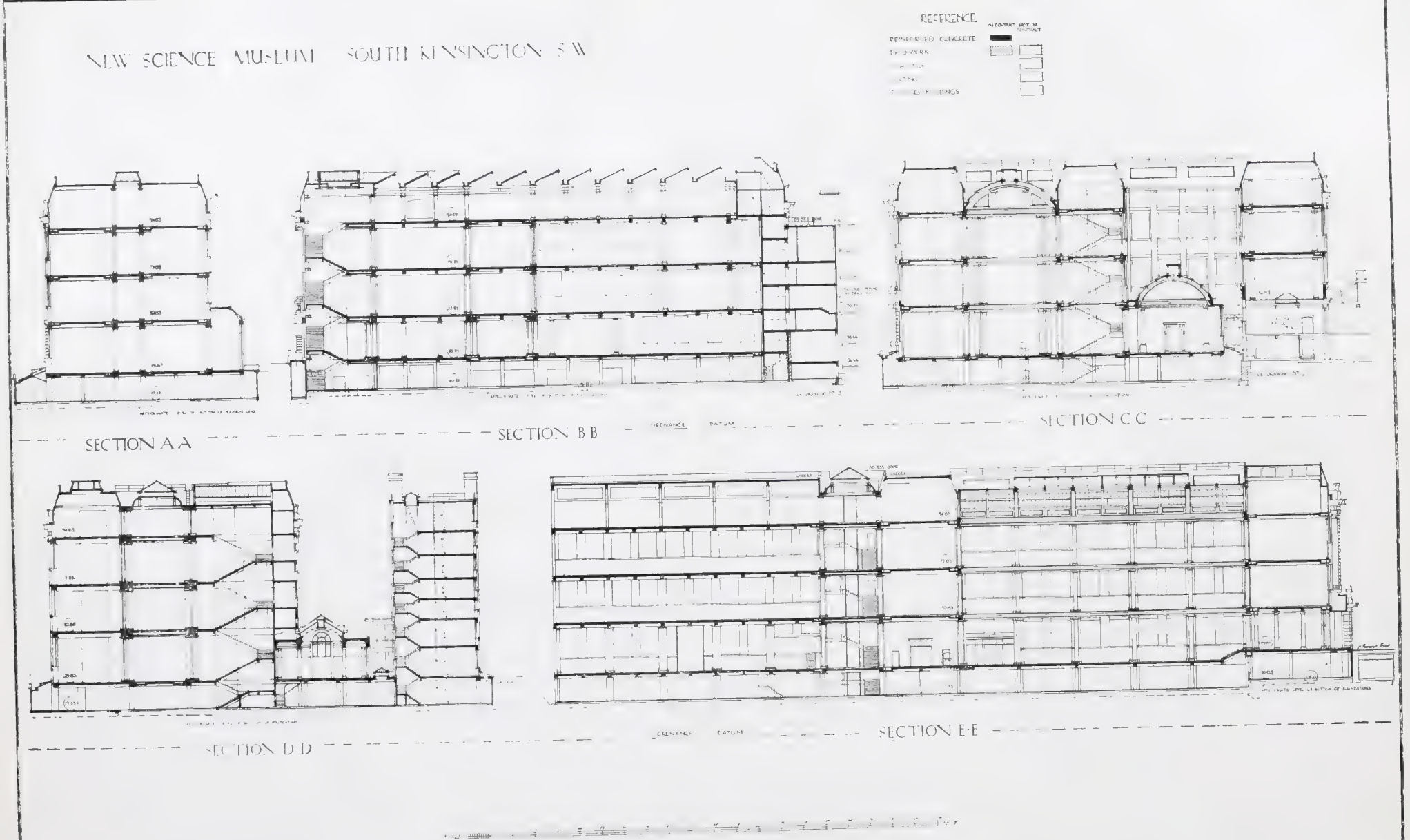
HOUSE AT STEEPLE ASTON OXFORD FOR BERTRAM WORRALL ESQ



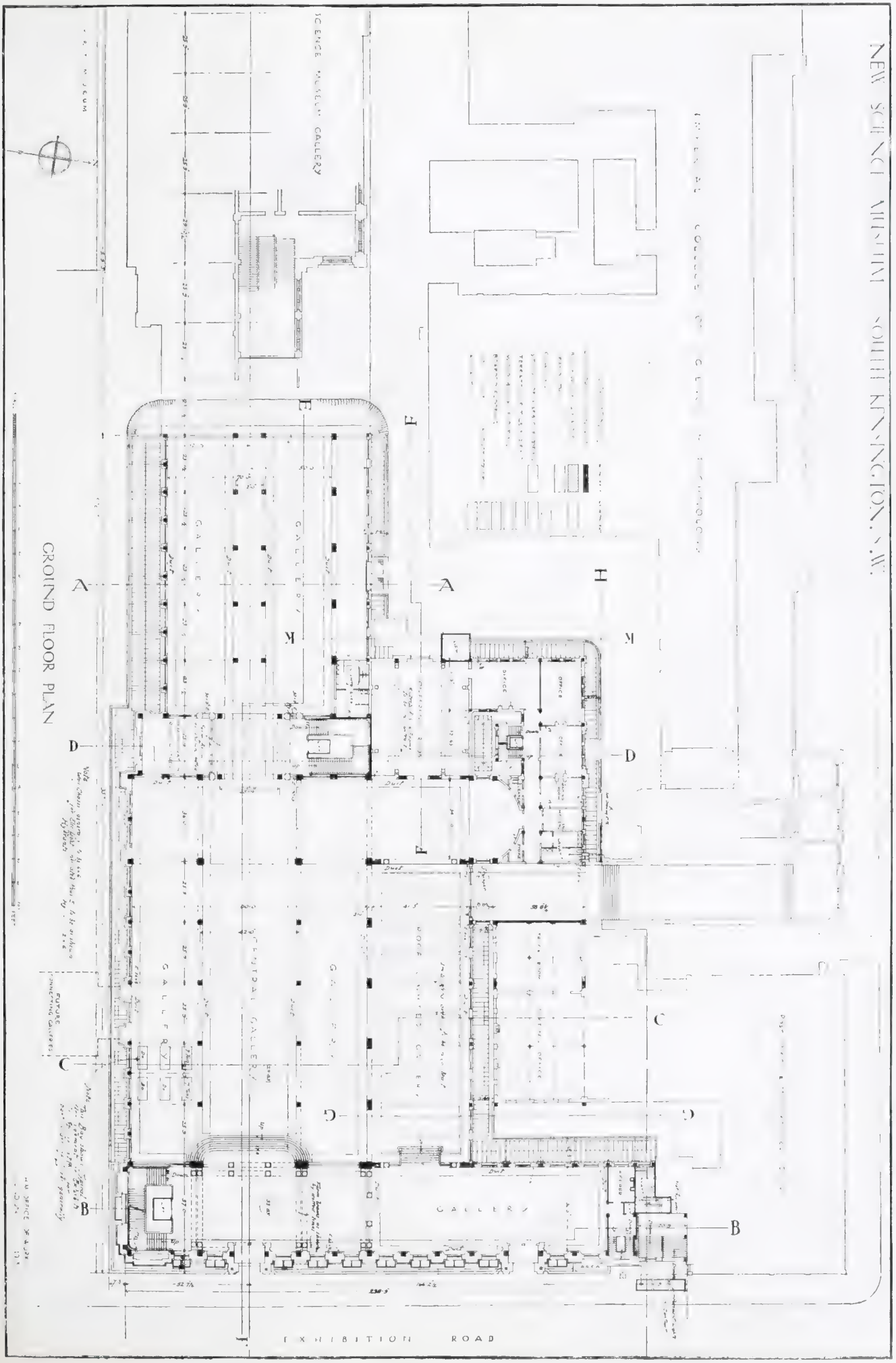


WILLIAM A. DAFT ARINA
ARCHITECT [illegible] OXFORD





NEW SCIENCE MUSEUM, SOUTH KENSINGTON.—Mr. R. J. Allison, A.R.I.B.A. (H.M.O.W.), Architect.



NEW SCIENCE MUSEUM, SOUTH KENSINGTON.—Mr. R. J. Allison, A.R.I.B.A. (H.M.O.W.), Architect

OBITUARY.

We regret to announce the death of Mr. Charles Jones, M.Inst.C.E., F.S.I., for over fifty years the borough engineer of Ealing, and recently unanimously chosen by the town council as the next occupant of the mayoral chair. Mr. Jones, who was in his eighty-fourth year, died on Sunday, after a few hours' illness, at his residence, The Lodge, Culmington-road, Ealing. He was only recently presented with his portrait, the cost of which was defrayed by public subscription. Mr. Jones, who was a native of Beccles, Suffolk, went to live at Ealing in 1856, and after practising as an architect in the district, was appointed in 1863 the first surveyor under the Ealing Local Board. He retained his office during the successive changes of the local authority to the status of district and borough council, and dealt with the municipal development of Ealing in a book he wrote bearing the title "From Village to Corporate Town." During this long official connection with the district Mr. Jones had become widely known and respected. Mr. Jones had undertaken a good deal of architectural work in the Ealing district, including the design of several churches and the Ealing public offices, but his chief work was that of a sanitary engineer. During his service as engineer the local authority laid out Lammas Park, 25 acres; Walpole Park, 30 acres; and Hanger Hill Park, five acres; and 47 acres were added to Ealing Common. Through the Ecclesiastical Commissioners and other freeholders the town was able to make advantageous bargains, and the open ground of Ealing is now 7½ per cent. of the superficial area of the borough. Mr. Jones was a founder of the Institute of Municipal and County Engineers, and was still up to the time of his death honorary secretary. The funeral service took place at St. Mary's Church, Ealing, on Wednesday afternoon, and the interment at the City of Westminster Cemetery, Hanwell.

Mr. William Pitt Preble Longfellow, nephew of Henry Wadsworth Longfellow, and an architect by profession, died at Gloucester, Mass., August 4. Mr. Longfellow was born in Portland, Me., in 1836, and was graduated from Harvard University in 1855. In 1869 he was appointed assistant architect of the Treasury Department. During the early days of the "American Architect," Mr. Longfellow acted on that journal in an editorial capacity. He was the author of several important works on architecture and other branches of the fine arts.

Mr. Thomas Arrol, a director of the firm of Sir William Arrol and Co., engineers, Glasgow, died on Thursday in last week from heart failure, aged 50, at his residence in Victoria-circus, Dowanhill, Glasgow. Mr. Arrol was a nephew of the late Sir William Arrol, and had been connected with the firm for over 30 years, taking a special share in the outside constructional work. Mr. Arrol was a member of Council of the Institution of Engineers and Shipbuilders in Scotland.

The death occurred on Friday at Garve, Ross-shire, his native place, of Mr. Kenneth Cameron, chief sanitary inspector of Aberdeen for thirty-one years, who retired only a few months ago on pension. Mr. Cameron was apprenticed to the building trade, and in 1879 was appointed assistant in the sanitary department of Glasgow. For three years he served under the late Dr. Russell, and the late Mr. Kenneth Macleod, and in 1882 was unanimously appointed to the Aberdeen inspectorship. For two years he held office as president of the Sanitary Inspectors' Association of Scotland, and also filled the position of president of the Incorporated Sanitary Association of Scotland. At the Congress of the Royal Institute of Public Health in Dublin in 1898, Mr. Cameron was president of the sanitary inspectors' section. He was also a member of the Board of Examiners of the Incorporated Sanitary Association of Scotland, and was chairman of the Registration Committee of the Aberdeen District Council of the National Registration of Plumbers. He was the first sanitary inspector in Scotland who gained the certificate of the Sanitary Institute of Great Britain, having passed the examination of that body in London in 1884. Mr. Cameron retired on account of failing health, and was granted an allowance of £200 per annum.

COMPETITIONS.

MANCHESTER ROYAL EXCHANGE.—In addition to the particulars we gave last week we should add that while the competition is open to all architects in the United Kingdom, the Board of Directors have sent special invitations to not more than twelve architects of repute to take part therein, and to each of these who submit a bona-fide design the Board will pay a sum of one hundred guineas. The Board will pay a sum of one hundred guineas to the authors of the three designs recommended by the assessor as worthy of that honorarium, except they, or any one of them, have already received that sum as one or more of the twelve specially invited architects. The author of the design placed first by the assessor will be employed, subject to the conditions, to carry out the work at the rate of 5 per cent. on the cost. If the Board fail to get a tender at not more than 10 per cent. over the successful architect's estimate, he will be paid £500 for his services. All designs submitted will be publicly exhibited after the award. Designs must be sent in without name, motto, or distinguishing mark. The Master will place corresponding numbers on the designs and sealed letters, and the envelopes containing the latter will not be opened till after the award. The designs must comply with the building by-laws of the City of Manchester. The total cost of the new buildings is not to exceed £150,000, and that of alterations to existing buildings not more than £25,000. The requirements are lucidly stated, and the conditions are clear and satisfactory.

NEW BOARD OF TRADE OFFICES.—Following the particulars we gave last week, we may further state that in the second competition the selected competitors will be allowed four months in which to complete their designs. The latest date for questions regarding the first competition is September 27. Sketch designs for the first competition must be sent in by December 29, or on one of the three days following. Any design received after 4 p.m. on January 4, 1914, will be excluded. The building will be erected in two parts, at times and intervals decided by Parliament. The first portion is estimated to cost £280,000, and the second £290,000. The floor areas are about 175,000ft. and 185,000ft. respectively. For the external elevations columnar treatment is to be avoided except in isolated features. The remuneration of the architect, including the sum of £300, paid to him as in the preliminary competition, will be at the rate of 5 per cent., payable as follows: £1,000 on appointment; £3,000 on acceptance of tender for the superstructure; £3,000 more when half the contract sum is paid to the builder; a further £3,000 on certificate of completion being given; and the balance on delivery of final certificate. The architect will then also get £1,000 on account of the second portion of the building, and further payment of similar fees when it is proceeded with. The commissioners will appoint a quantity surveyor, and the architect may, if he so desires, nominate another to co-operate in preparing the quantities. In the event of the death or incapacity of the architect before completion, he or his representatives will only be entitled to such equitable part of his unpaid remuneration as may be agreed on, arbitration by an arbitrator to be appointed by the Treasury being provided for in case of dispute. The form of agreement seems a fair one, and the conditions generally are informative and well drawn.

OWEN JONES.—In this Society of Arts competition, in which six prizes were offered, each prize consisting of a bound copy of "The Leading Principles in Composition of Ornament of Every Period," from the "Grammar of Ornament" by Owen Jones, and the society's bronze medal, the following were the successful candidates: Frank Brockle hurst, School of Art, Macclesfield, for a Design for a Silk Tapestry. Colin Davies, School of Art, Macclesfield, for a Design for a Tapestry Hanging. Edith Frances Harper, School of Art, Nottingham, for a Design for a Stencilled Hanging. Mary Alice Marsh, School of Art, Dudley, for a Design for a Coloured Embroidery Panel. Arthur Mottram, School of Art, Macclesfield, for a Design for a Woven Silk Fabric. William Edward Shearsmith, School of Art, Vernon-street, Leeds, for a Design for a Chiselled Iron Lock-plate. The examiners who judged the works submitted report: "The general level of merit shown last year has been maintained, and the best examples are found in the stencilled and woven fabrics. In embroidery, better designs have been submitted than was the case last year."

ROTTERDAM.—In the competition for the new Hotel de Ville for Rotterdam, to be built at an approximate cost of 5,500,000fr., the jury have selected the design submitted by Professor Evers, that by M. Jan Stuyt being placed second, and that by M. Kromhout being placed third. The choice has been endorsed by the town council of Rotterdam. The selected design is of a quiet type of French Renaissance.

At the Schoolroom, New Bilton, near Rugby, on Friday a Local Government Board inquiry was conducted by Mr. F. O. Stanford as the result of an application from the Bilton Parish Council for consent to borrow £4,000 for the purchase and laying out of a burial-ground at Croop Hill, Bilton.

The scheme for the construction of a good main road to Llandudno from Colwyn Bay, upon which a great deal of time has been spent by the Carnarvonshire and Denbighshire County Councils and the Colwyn Bay and Llandudno Urban District Councils, is once again blocked. The new obstacle is a change in the point of view of the Road Board, who decline henceforth to contribute to any but through roads.

The contract for the improvement of the harbour at Maidens, South Ayrshire, has been secured by Mr. M'Monagle, contractor, Ayr, and the work has been commenced. The scheme provides for the building of a new sea-wall outwards to meet the little rocky islands at the north end of the harbour known as the Maiden Ends. This will protect the harbour from north-west storms. The works will cost £3,000, and a grant of £1,500 has been contributed by the Fishery Board, while the Marquis of Ailsa has given the remaining £1,500 required.

The Local Government Board has requested the Corporation of Hull to reconsider their application to borrow £5,000 for the furnishing of the new Guildhall, with a view to the cost being considerably reduced. At the inquiry, the inspector commented severely upon the expensive nature of many of the proposed furnishings, and strong opposition was offered by several of the ratepayers to what they described as wanton extravagance. A contract had been entered into for the furnishings, subject to the sanction of the Local Government Board, but the whole matter will now be reconsidered.

An interesting memorial, inspired by the entente cordiale, is now being prepared for erection upon the Great North-road at Norman Cross, a few miles south of Peterborough. This monument is to the memory of 600 French and Belgian prisoners (hostages in the Napoleonic wars), who died in the Norman Cross depot for prisoners of war, and were buried on the spot. The site of the cemetery is now pasture land. The memorial will take the form of a pillar of Portland stone, surmounted by a gilded-bronze eagle with wings outstretched. The column will stand upon a square pedestal of Portland stone and will be approached by steps, the first of which will be shaped in accordance with the palisading formerly surrounding the prison.

The thirtieth annual report of the Inspector-General in Bankruptcy, that for 1912, states that there was a decrease in the liabilities owing by builders over the preceding year amounting to £396,799. In no other trade or occupation were the aggregate liabilities over half a million pounds, the largest amount being in the case of builders—£467,270. In addition to the prosecutions for offences under the Bankruptcy and Debtors' Acts, five bankrupts were prosecuted by the Director of Public Prosecutions for other offences, which were reported by the Official Receivers following on their investigation of the bankrupts' conduct and affairs. One of these bankrupts was a builder, who was convicted of perjury committed on an application to rescind the Receiving Order made against him, the sentence was twelve months' hard labour

Building Intelligence.

DUNFERMLINE. — On behalf of the Carnegie Trustees plans were submitted to Dunfermline Dean of Guild Court on Friday, showing an institute for the southern district of the ancient part of the city. Designed by Mr. George Lindsay, A.R.I.B.A., George-street, Glasgow (whose work was chosen in a competition), the building will have a frontage distinctly Scottish in character, to Nethertown Broad-street. The central-hall, lounge, and committee-room have been so designed that they may be hereafter convertible into a lending department. On the entrance floor there are to be a billiard-room, in which there is space for two tables, a smoking-room, a children's room, besides reading and other recreation rooms. The latter rooms will be divided by a sliding partition, and can be converted into a lecture-hall accommodating 500 listeners. For gentlemen eight slipper baths and one spray bath are to be installed; and for ladies there are to be four slipper baths and one spray bath. The estimated outlay is about £8,000.

THE HAGUE.—The Palace of Peace at the Hague was formally opened yesterday (Thursday). It has been built on a site acquired by the States General of Holland for the purpose in the wooded park known as Zorgvlied, on the north-west outskirts of the town. The design is that by M. L. M. Cordonnier, of Lille and Brussels, to which the first premium was awarded by an international jury from among 216 competitive plans submitted. There have, however, been many modifications of the original scheme. As executed, the Palace is of a mixed phase of Flemish and Dutch architecture, but resembling in general effect two Low-Country hotels de ville placed at right-angles to each other. The materials are brick and stone, with Welsh slates for roofing. The court-yard in the centre of the building is 144ft. by 111ft., and there are two towers at the extremities of the building, of which the loftier is 260ft. in height. In the basement are the restaurant, staff, telegraph, and Press offices, and heating and lighting plant. The great assembly-hall is 70ft. by 40ft., and 33ft. high, and has a gallery on three sides and a barrel-vaulted roof. The smaller hall has also a gallery on three sides, but the ceiling is flat. Adjoining these apartments are reading-rooms, consultation-rooms, and a main roof. On the upper floor, approached by a staircase projecting into the central courtyard, are the rooms of the administrative council and other officials of the Permanent Court of Arbitration, and a library with a book-lift to the reading-rooms below. Mr. Thomas H. Mawson has laid out the grounds. Queen Wilhemmina has conferred on M. Cordonnier a Commandership of the Order of Orange Nassau, while M. J. A. G. Van den Steur, of Haarlem, who was appointed by the committee as resident-architect, has been made a Knight of the Order of the Netherlands Lion.

KNIGHTSBRIDGE. Mr. James Charlton Humphreys has granted a lease for eighty years to Messrs. Harrods, Ltd., of about two acres of his Knightsbridge estate, on the area between Knightsbridge-road and Brompton-road, and including the houses facing Trevor-square. The *Times* states that when opportunity offers the area will be occupied by buildings of chambers and flats, which command high rentals in this district. By the acquisition of premises in Brompton-road, Messrs. Harrods, Ltd., will establish direct communication with their new area by means of an arcade, on the street level, opposite the western end of their premises in the main road, and a subway will also be provided to connect the properties. This subway is being made by Messrs. J. Mowlem and Co., Ltd.; the new buildings, the first portion of which is estimated to cost about £150,000, are to be erected by Mr. James Carmichael, of Wandsworth, and the foundations have been begun. Plans for the development of the remaining portion of the Trevor estate, as it was formerly called, are well advanced. The architect is a member of Messrs. Harrods' staff, and Mr. H. H. Dalrymple Hay, M.Inst.C.E., of Victoria Embankment, is the engineer.

MONKSEATON.—The directors of the North-Eastern Railway Company have placed the contract for the new railway station at Monkseaton with Messrs. Noble and Son, contractors, Dunston-on-Tyne. The work has been commenced, and is to be completed within twelve months. The main station building is to be in red pressed bricks, with terracotta facings, and will be 250ft. long. The length of platforms is about 600ft., and a space 250ft. by 45ft. is to be covered in by a half-circular span roof. Another platform which is of the island type, will be covered with an umbrella roof, 250ft. long, with waiting-rooms underneath. The whole of the work will be executed from plans, elevations, sections, and details designed by the company's architect, Mr. William Bell, of York, and carried out under the supervision of Mr. James Knaggs, clerk of works.

PETERBOROUGH.—The alterations to the Magisterial Court-house in Thorpe-road, which are being executed by Mr. James Lucas to the plans of Messrs. Townsend and Fordham, also of Peterborough, are progressing rapidly. The public entrance will be through a new hall which has been built behind the court. This will give access to separate waiting-rooms for male and female witnesses, a staircase and gallery leading to the grand jury-room above, and to the well of the court. The public gallery is gained by an external staircase. At right-angles to this gallery, overhanging the dock, is another for the grand jury, in direct communication with the grand jury-room. The prisoners will enter the dock by a subterranean passage communicating with the cells. The heating apparatus has been installed in a chamber beneath the new entrance-hall. A barristers' consulting and robing room is being provided.

The death took place at his residence, Hilminster Farm, near Stroud, on Tuesday, of Mr. Charles Ratcliffe, surveyor of main roads in the Stroud district, under the Gloucester County Council. Deceased, who was 56 years of age, had been ill about a month. He had served the county council since its formation.

The autumn meeting of the Bristol and Gloucestershire Archæological Society is to be held next Tuesday at Gloucester, the programme including visits to the Cathedral and other places of interest in the city, and to a few of the adjacent villages. The Bishop of Gloucester, who is president of the society, will accompany the members to the Cathedral, and the Sub-Dean, Canon Bazeley, and Mr. Waller, architect to the Dean and Chapter, will act as guides.

The Engineers' Standard Committee have issued a standard specification for sizes of broken stone and chippings. The gauges of broken stone are fixed at 3in., 2½in., 2in., and 1½in., and gauges of chippings at 1in., ¾in., ½in., ⅜in., ¼in., and ⅛in. At least 65 per cent. by weight of the material must comply with this stipulation. The maximum amount of smaller material is limited to 15 per cent. of the bulk, and the maximum amount of material having a greater length than that contained in the 65 per cent. is limited to 20 per cent.

The Bishop of Truro officiated on Friday at the re-opening, after thorough restoration, of the parish church at Ludgvan, near Penzance, at a cost of £2,500. The work was carried out by Mr. George Miners, of Marazion. An entirely new roof takes the place of a worn-out and leaky covering; the walls, instead of being plastered, are now clean and pointed; thirteen of the windows are new; the chancel floor is laid with glazed tiles; brick and plaster pillars have substitutes in granite columns for the support of the roof, and a vestry is provided.

The Local Government Board have given authority for the preparation of two further town-planning schemes under the Housing Town-Planning Act 1909. The schemes are authorised to be prepared by the urban district council of Hazel Grove and Bramall (near Stockport) and the rural district council of Hunslet. In the case of Hazel Grove and Bramhall the scheme is to apply to an area of about 1,728 acres, situate entirely in the urban district, and in the case of Hunslet the scheme is to relate to an area of about 410 acres, situate partly within the parish of Templenewsam in the rural district, and partly within the city of Leeds.

Correspondence.

WOMEN ARCHITECTS.

To the Editor of the BUILDING NEWS.

SIR,—Being a regular subscriber to your BUILDING NEWS, I read Mrs. Elspeth Spencer's interesting article on "Women Architects."

As a favour, I ask you to please forward the enclosed letter to her address, and oblige, yours, etc., DORIS STANTON COOK.

Hoskins Buildings, 3, Spring-street,
Sydney, N.S.W., July 20.

[The lady mentioned has not written any articles in the BUILDING NEWS, and we have not the honour of her co-operation or acquaintance. Nor do we know her address. But if she should see this and send it we shall be glad to forward the letter.—ED. "B.N."]

A WORKMAN'S COTTAGE FOR £150.

SIR,—Referring to the illustrated article under the above heading, by Mr. Frank H. Heaven, published in your issue of July 18 ult, it would have been more satisfactory to your readers if your correspondent had shown in detail, instead of making the bare assertion, that such a cottage as the one illustrated could be built for £147, how he arrived at the estimate of cost.

Possibly some of your lay readers may be inclined to accept this statement of cost without careful consideration of the plans and elevations, etc; but if the trouble is taken to work out the cubical contents of the design, the total of which is 11,419cu.ft., which, to give a cost of £147, would mean that the cost per cubic foot would have to be at the rate of .3 1-9d.

To erect a single cottage in accordance with the design illustrated and with such details as are shown, even under the most favourable conditions with regard to cost of labour, materials, and locality, it could not be properly built for less than 4½d. per cubic foot, which gives a total of £214.

With reference to the illustration of a design for a group of four cottages to cost £450, the cubic contents of which works out at 41,098, which, to give the cost at £450, would mean that the cost per cubic foot would have to be at the rate of a fraction less than 2 2-3d. This design, as in the case of the former, could not be satisfactorily executed at a less rate than 4½d. per cubic foot, which gives a total of £747.—I am, etc.,

ALFRED J. DUNN, F.R.I.B.A.

Clarendon Chambers, Waterloo-street,
Birmingham.

At Totnes Town Council meeting on Tuesday, it was stated that £143 had been saved in the half-year by the council's tendering for work on the roads.

After collecting rents, on Monday, Alfred James Waller, aged fifty-four, a builder, who lived in Fairthorne-road, Charlton, died suddenly in High-street, Plumstead.

A new organ, built at a cost of £1,115, by Messrs. Norman and Beard, has been placed in the parish church of North Walsham. It has been erected in the sixth bay on the north side, and has an outer case.

The provision of working-class dwellings by the Huddersfield Corporation is proceeding apace. On Friday the town council authorised the erection of 500 more houses in the following scattered districts: Moldgreen, Bradley, High Royd, Salendine Nook, Woodfield, and Royds Wood.

M. Rodin's "Burghers of Calais," which was acquired for the nation by the National Art Collections Fund, and is to be set up in the Victoria Tower Garden, Westminster, is not, as has been asserted, a copy of the much-criticised and much-belauded group at Calais, but is an original specimen of M. Rodin's work in bronze.

According to a Blue-book issued on Wednesday night, the Public Works Loan Commissioners made 1,712 advances to local authorities last year for sums amounting together to £4,554,683 as compared with 1,685 advances for £3,954,899 in 1911-12. Loans for the purpose of small holdings and allotments amounted to £1,012,200, against £897,313 in the previous year.

LEGAL INTELLIGENCE.

IN RE ERNEST COLLINS. At the London Bankruptcy Court on Tuesday, Mr. Ernest Collins, C.E. lately of the Gables, Wedderburn-road, Hampstead, was publicly examined. He said, in reply to the Official Receiver, that up to September, 1911, he was engaged as engineer to the Metropolitan Water Board, at a salary latterly of £1,750 a year. He then retired on a pension of £903 per annum. In 1904 he became a director of the British Columbia Development Association (Limited), and acted as such till the date of the winding-up order in July, 1912. The statement of affairs showed gross liabilities £29,100 while the assets were estimated to produce a surplus of £1,479. He attributed his failure, among other causes, to his having incurred liabilities on behalf of the company referred to. The examination was adjourned to September 16.

BUILDERS SWINDLED. TENDERS FOR REPAIRS to 5,000 SHOPS AND HOUSES.—When Henry Gower, 54, described as a carpenter, was charged on the 21st inst. at London Sessions with obtaining by false pretences from John Thomas Carney and Abram Clarke Chappell, builders, cheques for £3 3s. and £2 2s. respectively, Mr. Basil Watson, who prosecuted, alleged that the accused had defrauded people engaged in the building trade by sending to them a remarkable printed circular dealing with an imaginary estate. The document, which was a concoction from start to finish, referred to 4,995 non-existent properties. The document was headed "The Palmer Estates. Triennial Contracts," and began: "Tenders are invited for a term of three years for the general repairs and alterations required from time to time for the upkeep of about 5,000 shops, dwelling houses, and other properties in London and surrounding districts. Contractors wishing to tender must send in their applications not later than July 25, 1913, accompanied by a deposit of one guinea for each district for which they wish to tender. On receipt of a bona-fide tender the deposit will be returned." The circular ended "Applications must be addressed to J. C. Carter (Surveyor) 5 Central House, Aldgate." It was alleged that the "Palmer estate" was bogus, while the office in Aldgate was a room, 12ft. for 14ft., for which a rent of 10s. a week was paid. A second man was said to be implicated, but counsel stated that the prisoner was the chief offender. The prisoner, in the box, denied all knowledge of the circular, and put the blame on a man named Carter, by whom he was recently engaged at a salary of 10s. a day.—Mr. Basil Watson: You agree that the "Palmer Estate" is a colossal swindle?—I have no idea. It is Carter's affair. I was to be his foreman of works—presumably the works mentioned in the circular.—The jury found the prisoner guilty of conspiring with a person unknown to defraud, but on the direction of the acting deputy-chairman (Mr. A. H. Spokes) acquitted him of obtaining money by fraud. He was said to have undergone four years for forgery, in addition to four shorter terms for fraud and forgery. Detective-Sergeant Young stated that Carter, who could not be traced, was not capable of framing such a circular. He was a very illiterate man. The prisoner was formerly a manager and had had a printing business.—The Prisoner: I deny that I have used an illiterate man as my tool. Carter is not badly educated. Sentence of fifteen months' hard labour was passed.

LITIGATION ON SEVEN-YEARS-OLD VERBAL CONTRACT.—At Newcastle-on-Tyne County Court on Friday, before his Honour Judge Greenwell, Absolom Gladstone, miner, Stakeford, brought an action against Gordon Brothers, builders, Stakeford, for alleged breach of contract. Mr. Dix appeared for plaintiff, and Mr. H. Mundahl represented the defendants. Mr. Dix stated that plaintiff brought his action against Messrs. Gordon Brothers for damages for breach of a contract made between plaintiff and defendants in May, 1908, whereby defendants agreed, for the sum of £375, to build complete for plaintiff a dwelling-house, shop, and stable. Defendants, it was alleged, failed to complete them according to contract and plan; the materials used in the construction of the house were of inferior quality, and the work was defectively carried out. Plaintiff, who had been abroad, had saved a few hundred pounds. He was carrying on business as a fish and chip merchant, and approached defendants for the construction of suitable premises for that trade. At the commencement of the work, in 1908, plaintiff paid £210, and within a month of that had paid the full amount, £375. It was a verbal contract. Among defects alleged in the work were unsatisfactory plastering, leaky cellars, defective drainage, bad spouting, and inadequate stabling. His Honour: Yet you have occupied the house for five years. Mr. Mundahl said that plaintiff was present daily during the building of the premises, and raised no objection. No complaint was received until 1910, when plaintiff called attention to a smoky chimney and an insecurely fastened fireplace, which defendants remedied. In 1911, plaintiff wanted to give up the fish and chip business and let the place. Accordingly he proposed some alterations, and asked defendants for an estimate. Defendants made a proposal of about £70, but plaintiff raised difficulties, and the alterations were not gone on with. It was only then that plaintiff commenced to raise a catalogue of complaints about the house. Robert Gordon, of the defendant firm, denied the allegations that the work had been badly done. Any defects there were were only trivial, and, assuming defendants were liable—which he did not admit—he could put the house right for £5. His Honour gave judgment for plaintiff for five guineas, with costs.

WATER SUPPLY AND SANITARY MATTERS.

MIDDLESBROUGH. — The Middlesbrough Corporation are carrying out works for the prevention of the flooding in the Marshes district, which has an area of 260 acres of fully-built-up streets. This locality is practically level with high tides, and consequently the sewer outfalls during periods of heavy rainstorms are tide-locked and filled to their maximum capacity. New culverts, varying in size from 2ft. to 7ft. in diameter, with chambers, valves, and ventilators are to be provided. There will also be a new pumping station, having three electrical motors and centrifugal pumps, and provided with an automatic valve to prevent the water from backing into the culvert. The work was designed by Mr. S. E. Burgess, the borough engineer, and is estimated to cost £60,000. The contract for the first section has been taken by Messrs. J. B. Fowells and Sons, of Middlesbrough, at £30,000.

Mr. J. C. Lyons, B.E., has been appointed county surveyor by the Louth County Council.

Maury Diggs, a former State architect in San Francisco, who was charged with the abduction of a schoolgirl, has been convicted.

Mr. Baines, engineer-in-charge of the Jacobabad–Kushmore Feeder Railway, has died in Karachi from heat apoplexy.

In view of the closing of the Birkbeck School of Art, an effort is being made to induce the City Corporation to establish an art school, if possible, in the same buildings as the Guildhall School of Music.

The death is announced of Mr. William Latimer Collyer, builder, of Leicester, aged 51 years. He was the eldest son of Mr. William Collyer, of Messrs. Collyer and Scott, formerly builders in Lichfield.

The Llandudno and Colwyn Bay Tramways Co. have decided to continue their lines westward through the village of Old Colwyn for a distance of nearly two miles. The construction will begin in October.

Mr. Arthur Hacker, R.A., and Mr. E. Borough Johnson have joined the staff of the London School of Art, at Stratford Studios, which is directed by Mr. John Hassall, R.I., and Mr. C. M. Q. Orchardson, R.O.I.

Messrs. Magoon and Macdonald, architects, Edmonton, Alberta, have been awarded the first premium of 2,000dol. for the plans submitted by them for the proposed new masonic temple in that city. The building will be a six-story one, and is estimated to cost 500,000dol.

Mr. Samuel Joshua Cooper, of Mount Vernon, near Barnsley, colliery proprietor, left net personalty £706,627. Testator bequeathed to the trustees of the National Gallery "Hurricane Before St. Malo," by Eugene Isabey, and "Bras Breau in the Forest of Fontainbleu," by N. Diaz.

The memorial in Lichfield to the late Bishop, Dr. Legge, will take the form of an episcopal seat, with seats on each side for chaplains on the south side of the sacrarium. A 15th-century canopy from the former reredos (portions of which are already incorporated in sedilia) will be placed above it.

A factory, 90ft. by 80ft., two floors in height, is being built in Mount Pottinger-road, Belfast, from plans by Mr. R. Sharpe Hill, of Wellington-place, Belfast. The building is of reinforced concrete, except the upper story, which is of timber. Messrs. McIntyre Brothers, Carrington-street, Belfast, are the contractors, and the cost will be about £4,000.

Our Office Table.

The Dublin Corporation once more discussed on Friday the question of the site for the Municipal Art Gallery to house the Lane collection of pictures, and we fear finally gave a quietus to the scheme. The Lord Mayor moved the adoption of the report of the special committee, which recommended the selection of the Metal Bridge site, and of the design of Mr. E. L. Lutyens, A.R.A., as requested by Sir Hugh Lane, who had himself guaranteed to pay whatever the bridge would cost over £5,000. Various memorials for and against the bridge site were referred to. Alderman Ireland proposed as an amendment that the corporation be free to select its own site, but this, in view especially of Sir Hugh Lane's threat to take away the collection if the requirements were not met, was defeated. Mr. Cosgrave next proposed that Irish architects be at liberty to submit designs for the new gallery. When put, the amendment was declared carried, but when put as a substantive resolution it was defeated. The Lord Mayor, who has throughout supported the Metal Bridge site, and Sir Hugh's nomination of Mr. Lutyens, bluntly told the members that the voting did not reflect any credit on the corporation, as they had not yet come to any decision. The Lord Mayor has since expressed his determination to convene no further meetings to discuss the matter, and it seems that nothing remains for Sir Hugh Lane but to withdraw his generous proposals. It is to be regretted that jealousy of an English architect has led to this fiasco and deprived Dublin of art treasures which would have attracted visitors and have been a magnet to draw to the gallery many like gifts of pictures in the future.

Earl Ferrers, L.R.I.B.A., the hon. secretary of the Society for the Protection of Ancient Buildings, points out that the beautiful Lady-chapel of Christ Church Priory church is in danger of being killed by kindness. The vicar and churchwardens have accepted a bequest of the value of £5,600 to "restore" the chapel, which is structurally sound, and only measures about 36ft. by 21ft. The interest on a tithe of the legacy, says Lord Ferrers, should keep the building in repair to all time. And there is no practical use to which all this money can be put. It can only be spent to import ornamental modernisms. Unfortunately, the only way to prevent mischief is to keep a vigilant watch when application is made for a faculty to deal with the chapel, and we all know what happens when such a permit is granted to a Lord Grimthorpe.

A well-attended meeting of the ratepayers of Dursley was held at the town-hall on Thursday night in last week, to consider the parish council's report on the tenders received for erecting thirty-eight workmen's cottages in the town prior to a recommendation being sent to the Local Government Board. The chairman of the parish council (Mr. Sidney Bloodworth) said it was originally estimated that the houses could be built to let at a weekly rental of 4s. 6d.; but the lowest tender, based on a modified plan and specification, £8,150, submitted by Mr. W. J. Halls, of Gloucester, would not allow of the houses being let at rents of less than 5s. 3d. or 5s. 6d. There was no doubt that the houses would let readily at this rent, but the poorer working-men for whom the council wished to cater could not afford to pay it. A long, and at times animated, discussion followed, and eventually a proposition that the scheme should be referred back to the council, with a recommendation to try and build houses to let 4s. 6d., was carried, with one dissentient.

To the Llandudno Urban District Council on Friday, the works committee recommended a scheme prepared by the deputy engineer (Mr. W. T. Ward) for an alteration of the promenade at Craig-y-don in order to straighten the road in the direction of Craig-side and Colwyn Bay, which at present, at the end of Carmen Sylva-road, has an awk-

ward and dangerous curve in it. The scheme proposed to curve the promenade slightly seawards, and so avoiding any necessity to acquire land of adjoining property owners. It was recommended the work be carried out in October, at an estimated cost of £1,080. Mr. Thomas (chairman of the committee) said Mr. E. P. Stephenson, consulting engineer to the council, advised that the scheme be not proceeded with, as it would spoil the crescent shape of the bay, and might cause erosion, while the cost of construction would be greatly increased. A discussion ensued, in which it was stated that the scheme was proposed in consequence of the extravagant prices asked by owners for the properties required for the straightening of the road. It was at length decided to refer the proposal to the committee, who will also consider a scheme for the extension of the promenade to the Little Ormford prepared a number of years ago by Mr. Stephenson.

At Bristol representatives of employers and of trades unions were invited to meet the special committee on corporation contract clauses on Wednesday in last week. The committee consists of the chairman of the principal standing committees, with the addition of Alderman Hayes and Mr. Neale, representing the Master Builders, and Ald. Sheppard and Mr. Senington, representing the Labour interest. The communications received from the Master Builders' Association objecting to the clauses sanctioned by the council a few months ago have been referred to the committee, also the resolutions passed by various labour organisations protesting against any alteration being made in them. It was pointed out at the council meeting that the building trade is not the only one affected, and representatives of other trades offered criticisms of the clauses at the conference. Among those who attended were Mr. Audley Perkins (president) and Mr. F. N. Cowlin (representing the Builders), Mr. J. M. Gladwell (Clothing Trade), Mr. W. N. Llewellyn (Bristol and District Association of Employers in the Engineering and Allied Trades), and Mr. A. Jefferies (Bristol, Avonmouth, and Portishead Association of Shipbuilding, Ship Repairing, and Marine Engineering Employers).

The value of concrete in coal mines as a substitute for timber was emphasised at a meeting of the North Staffordshire Mining Institute, held at Stoke-on-Trent last Monday night, when a paper on the subject was read by Mr. John Gregory, of Sneyd Colliery, Burslem. He said he was convinced that colliery engineers would find that a reduction in maintenance charges and increased safety to life and limb would soon repay the capital expenditure. Mr. E. B. Wain instanced a case which had come under his notice at Chatterley-Whitfield Colliery, where an arched concrete roof thinly lined with brick was made as a road through a faulty piece of ground twenty-three years ago, during which period not a brick had fractured. The first cost appeared enormous, but when heavy expenditure was incurred year by year in the renewal of timber, concreting was true economy.

A Summary of Progress of the Geological Survey of Great Britain has just been published for 1912. In England and Wales work has been continued in the Denbighshire district, in the Warwickshire and South Staffordshire district, and in the London and S.E. district. In the Denbighshire district progress has been made with the surveying of the coal measures and the older and newer rocks, while in the Warwickshire and South Staffordshire district the northern portions of the visible coalfield have been completed, as well as the intervening area occupied by the New Red Sandstone formation. The original survey of Scotland has been continued in the West Highland district (the area surveyed lies entirely in the island of Mull), and in the north and central Highland district, comprising parts of the counties of Sutherland, Ross, Perth, Inverness, and Argyll. Revision of the carboniferous areas was carried on in the Kilmarnock and South Lanarkshire districts. In addition to a summary of the results obtained during this work there are appendices dealing with (1) palæolithic gravels near Swanscombe, Kent; (2) analysis of water at "The Mount," Fareham; (3) a boring at the East Anglian Ice Company's Works, Lowestoft; (4) a boring near Henlow Station, Bedfordshire; (5) a boring at Batsford, near Moreton-in-Marsh; and (6) the copper lodes of Inveryne and Kilfinan, Argyllshire.

A message of great interest to the granite trade was received in Aberdeen on Friday to the effect that the tariff on granite imported to America had been reduced from 50 to 25 per cent. of the value of the material. The change on iron sand is from 1 per cent. per pound to 25 per cent. ad valorem. Since the year 1896 the granite trade between Aberdeen and the United States has been steadily dwindling; but Mr. William Edwards, president of the Granite Association, expresses the view that the change will bring the Western trade to a higher level than it has ever been previously. Before the 50 per cent. tariff was imposed in 1897, the value of the export of granite from Aberdeen to the United States was £85,000, but in succeeding years the tax brought about a decrease of £60,000. Last year the value of the granite exported from Aberdeen was £21,500.

The Calendar for the 118th session of the Royal Technical College, Glasgow, has just been published as a substantial cloth-bound volume of 490 pages. It gives particulars of the day and evening classes of the courses of study and composition fees, and the scheme of affiliation with the University of Glasgow. The director is Mr. Herbert F. Stockdale, F.R.S.E., and in the department of Architecture and Building the Professor is Mr. Charles Gourlay, B.Ss., A.R.I.B.A., Mr. James S. Boyd, L.R.I.B.A., being his chief assistant and lecturer. The session opens on Monday, September 22.

MEETINGS FOR THE ENSUING WEEK.

SATURDAY (To-Morrow).—Association of Managers of Sewage Disposal Works, Midland District Meeting at Cheltenham.

TUESDAY.—Royal Photographic Society. "Fair Lusitania," by the Rev. H. O. Fenton. Suffolk-street Gallery. 8.30 p.m.

WEDNESDAY. Association of Engineers-in-Charge. Annual Meeting. St. Bride's Institute, Fleet-street, E.C.

THURSDAY. Royal Photographic Society. "Among the Pyrenees," by R. Gorbold. Suffolk-street Gallery. 8.30 p.m.

TRADE NOTES.

The "Boyle" system of ventilation (Naturalh, embracing Boyle's latest patent "Air-pump" ventilators and air-inlets, has been applied to the Hall, Aghada, Co. Cork.

CHIPS.

New halls in connection with the parish church have just been erected in Callander and will be opened early in October by the Very Rev. Dr. Wallace Williamson, Moderator of the Church of Scotland. They are situated behind the church, and consist of a hall seated for 260 and a small hall with accommodation for 80 persons. There are also a session-house, general room, kitchen, and cloak-rooms. The cost has been £2,000.

A new Government armoury, to cost 1,750,000dol., is outlined in a Bill introduced in the U.S. House of Representatives. The Bill authorises the construction, in Washington, D.C., of an armoury for the National Guard upon a site bounded by B-street, N.W., B-street, S.W., Twelfth-street, and Fourteenth-street, in accordance with the plans of the commission appointed under an act of May 30, 1908.

Actual work has been undertaken on the Prince Rupert drydock buildings by the Wineland Construction Company, Vancouver, general contractors. The work includes the power house, 104ft. by 108ft., with steel frame chimney of fireproof construction, 11ft. in diameter, and 200ft. in height. A shipbuilding shed, 160ft. by 300ft., with 10-ton travelling crane; boiler and blacksmith shop, 76ft. by 150ft., with concrete flooring; 15-ton travelling crane; six 400H.P. water tube-boilers; a machine shop 76ft. by 150ft. with equipment of tools. The architects are Messrs. F. E. Kirby and W. J. Donnelly, of New York.

LATEST PRICES.

IRON.

Steel Joists, Belgian and German (ex steamer, London)	per ton	£6	2	6	to £6	5	0
Steel Joists, English		7	10	0	,, 7	13	6
Wrought-Iron Girder Plates		7	0	0	,, 7	5	0
Steel Girder Plates		7	2	6	,, 8	2	6
Bar Iron, good Staffs		6	5	0	,, 8	10	0
Do., Lowmoor, Flat, Round, or Square		20	0	0	,, 0	0	0
Do., Welsh		5	15	0	,, 5	17	0
Boiler Plates, Iron—							
South Staffs		8	0	0	,, 8	15	0
Best Snedshill		9	0	0	,, 9	10	0

Angles 10s., Tees 20s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £8 15s to £9.
Ditto galvanised, £14 to £15 10s. per ton.

Galvanised Corrugated Sheet Iron—

	No. 18 to 20.	No. 22 to 24
6ft. to 8ft. long, inclusive	Per ton.	Per ton.
gauge	£13 0 0	£13 10 0
Best ditto	13 0 0	14 0 0

Wire Nails (Points de Paris)—

3 to 7	8	9	10	11	12	13	14	15	B.W.G.
8/3	8 9	9/3	9/9	10/3	11/-	11/9	12/6	13/6	per cwt.

	Per ton.				Per ton.	
Cast-Iron Columns	£7	10	0	to	£9	0 0
Cast-Iron Stanchions	7	10	0	,,	9	0 0
Rolled-Iron Fencing Wire	8	5	0	,,	8	10 0
Rolled-Steel Fencing Wire	7	5	0	,,	7	10 0
,, ,, ,, Galvanised	8	15	0	,,	9	5 0
Cast-Iron Sash Weights	5	0	0	,,	5	5 0
Cut Floor Brads	9	15	0	,,	—	
Corrugated Iron, 24 gauge	16	0	0	,,	—	
Galvanised Wire Strand, 7 ply, 14 B.W.G.	14	5	0	,,	—	

B.B. Drawn Telegraph Wire, Galvanised—

0 to 8	9	10	11	12	B.W.G.
£10 10s.	£10 15s.	£11 0s.	£11 5s.	£11 15s.	per ton.

Cast-Iron Socket Pipes—

3in. diameter	£6	2	6	to	£6	7 0
4in. to 6in.	6	0	0	,,	6	5 0
7in. to 24in. (all sizes)	5	7	6	,,	6	0 0

[Coated with composition, 5s. 0d. per ton extra, turned and bored joints, 5s. 0d. per ton extra.]

Pig Iron—	Per ton.		
Cold Blast, Lilleshall	110s. 0d.	to	117s. 6d.
Hot Blast, ditto	70s. 0d.	,,	75s. 0d.

Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—

Gas-Tubes	75 p.c.
Water-Tubes	72½ ,,
Steam-Tubes	67½ ,,
Galvanised Gas-Tubes	65 ,,
Galvanised Water-Tubes	62½ ,,
Galvanised Steam-Tubes	57½ ,,

OTHER METALS.

Spelter, Silesian	Per ton	£20	10	0	to £20	12	6
Lead Water Pipe, Town		24	15	0	,,	—	
,, ,, ,, Country		25	10	0	,,	—	
Lead Barrel Pipe, Town		25	15	0	,,	—	
,, ,, ,, Country		26	10	0	,,	—	
Lead Pipe, Tinned inside, Town		26	15	0	,,	—	
,, ,, ,, Country		27	10	0	,,	—	
Lead Pipe, Tinned inside and outside Town		29	5	0	,,	—	
,, ,, ,, ,, Country		30	0	0	,,	—	
Composition Gas-Pipe, Town		27	15	0	,,	—	
,, ,, Country		28	10	0	,,	—	
Lead Soil-pipe (up to 4½in.) Town		27	15	0	,,	—	
,, ,, ,, Country		28	10	0	,,	—	
[Over 4½in. £1 per ton extra.]							
Lead Shot, in 28lb. bags		24	15	0	,,	—	
Copper Sheets, sheathing & rods		85	0	0	,, 85	10	0
Copper, British Cake and Ingot		73	10	0	,, 74	0	0
Tin, English Ingots		192	0	0	,, 194	0	0
Do., Bars		193	0	0	,, 195	0	0
Pig Lead, in 1cwt. pigs (Town)		21	15	0	,,	—	
Sheet Lead, Town		24	5	0	,,	—	
,, ,, Country		25	0	0	,,	—	
Genuine White Lead		30	15	0	,,	—	
Refined Red Lead		25	10	0	,,	—	
Sheet Zinc		30	0	0	,,	—	
Old Lead, against account		19	5	0	,,	—	
Tin	per cwt.	11	0	0	,,	—	
Cut nails (per cwt. basis, ordinary brand		0	11	6	,,	—	

TIMBER.

CONSTRUCTIONAL.

Yellow Pine Deals, Quebec, per standard:—							
1st quality		£38	0	0	to £45	0	0
,, ,, ,, 2nd ,,		26	0	0	,, 32	0	0
,, ,, ,, 3rd ,,		16	0	0	,, 18	10	0
Spruce Deals: St. Johns		10	0	0	,, 11	10	0
,, ,, Miramichi		9	10	0	,, 10	10	0
,, Boards: Swag		11	0	0	,, 12	0	0
Red Deals: rchangel 1st quality		21	0	0	,, 24	0	0
,, ,, ,, 2nd ,,		16	0	0	,, 19	0	0
,, ,, ,, 3rd ,,		12	0	0	,, 14	0	0
,, ,, St. Petersburg—							
,, ,, ,, 1st quality		16	10	0	,, 18	0	0
,, ,, ,, 2nd ,,		14	10	0	,, 15	10	0
,, ,, Wyburg & Uleaborg		12	10	0	,, 15	0	0
,, Gefle, Gothenburg, and Stockholm		12	10	0	,, 17	0	0
White Deals: Crown		14	0	0	,, 15	10	0
,, ,, Seconds		11	10	0	,, 13	0	0
Flooring: White and Planed—							
1st and 2nd quality mixed		10	15	0	,, 11	15	0
1st, 2nd, & 3rd quality mixed		10	5	0	,, 11	0	0
Red Planed, 1st quality		14	10	0	,, 17	0	0
Pitch Pine: Prime Deals and Boards		18	0	0	,, 23	0	0
Lignum Vitæ	Per ton	7	0	0	,, 14	0	0

	Per cubic foot.					
Yellow Pine Logs (waney board)	0	5	0	,, 0	5	6
Pitch Pine Logs	0	2	0	,, 0	2	6
Birch: Quebec Logs	0	3	3	,, 0	3	9
Oak: Austrian Wainscot	0	7	0	,, 0	8	0
Mahogany: Gaboon	0	2	0	,, 0	2	3

FURNITURE AND HARDWOODS.

Teak: Burmese, per load, 50ft.	£30	0	0	to	£25	0	0
Teak: Java, per load, 50ft.	16	0	0	,,	21	0	0
	Per cubic foot.						
Oak Planks: U.S.A., imported	0	1	9	to	0	3	6
,, Boards ,, ,, Prm.	0	3	0	,,	0	3	6
,, ,, ,, ,, Mdm.	0	3	6	,,	0	2	9
Sequoia (Californian Redwood)	0	2	4	,,	0	3	6
Birch: Quebec logs	0	2	3	,,	0	2	9
,, ,, sawn planks	0	1	3	,,	0	2	0
Oak: Austrian Wainscot	0	7	0	,,	0	8	0
Walnut: Prime boards and planks	0	6	0	,,	0	6	6
Walnut: Mdm. ,, ,,	0	3	6	,,	0	4	6
Greenheart: Hewn logs	0	3	3	,,	0	4	0
Cedar: Cigar box	0	4	9	,,	0	5	6
Satin Walnut: Imp. sawn boards, prime	0	2	4	,,	0	2	9
Orham: Imp. sawn boards, prime	0	2	0	,,	0	2	3
Mahogany: St. Domingo, Cuba, and Honduras	0	6	0	,,	0	9	0
,, African, Assinee, &c.	0	5	0	,,	0	6	6
,, Lagos and Benin	0	4	6	,,	0	6	0
,, Sekondi and Cape Lopez	0	3	0	,,	0	4	0
,, Gaboon	0	2	0	,,	0	2	3
Satinwood: West Indian	0	10	0	,,	0	14	0
Rosewood Per ton	8	0	0	,,	12	0	0
Lignum Vitæ ,,	7	0	0	,,	14	0	0

STONE.*

Red Mansfield, in blocks per foot cube	£0	2	4
Darley Dale, ditto ,,	0	2	3
Red Corsehill, ditto ,,	0	2	2
Closeburn Red Freestone, ditto ,,	0	2	0
Ancaster, ditto ,,	0	1	10
Greenshill, ditto ,,	0	1	10
Chilmark, ditto (in truck at Nine Elms) ,,	0	1	10½
Hard York, ditto ,,	0	2	10
Ditto ditto 6in. sawn both sides, landings, random sizes per foot sup.	0	2	8
Ditto ditto 3in. slab sawn two sides, random sizes ,,		1	3

* All F.O.R. London.

Bath Stone, delivered on road waggons, Paddington Depot per foot cube	0	1	7½
Ditto, ditto, Nine Elms Depot ,,	0	1	9½
Beer Stone, delivered on rail at Seaton Station ,,	0	1	0
Ditto, delivered at Nine Elms Station ,,	0	1	6

Portland Stone, in random blocks of 20ft. average:—

	Brown Whit Bed.	White Base Bed
	Per foot cube.	
Delivered on road waggons at Paddington Depot, Nine Elms Depot, or Pimlico Wharf	£0 2 3	£0 2

SLATES.

	in.	in.	£	s.	d.	per 1,000 of 1,300 at r.stn.
Blue Portmadoc	20×10		12	12	6	
,, ,,	16× 8		6	12	6	,, ,,
Blue Bangor	20×10		13	2	6	,, ,,
,, ,,	20×12		13	17	6	,, ,,
First quality	20×10		13	0	0	,, ,,
,, ,,	20×12		13	15	0	,, ,,
,, ,,	16× 8		7	5	0	,, ,,
Eureka unfading green	20×10		15	17	6	,, ,,
,, ,,	20×12		18	7	6	,, ,,
,, ,,	18×10		13	5	0	,, ,,
,, ,,	16× 8		10	5	0	,, ,,
Permanent green	20×10		11	12	6	,, ,,
,, ,,	18×10		9	12	6	,, ,,
,, ,,	16× 8		6	12	6	,,

BRICKS.

(All prices net.)

First Hard Stocks	£1	15	0	per 1,000 alongside, in	
Second Hard Stocks	1	11	0	,, ,,	river.
Mild Stocks	1	9	0	,, ,,	,,
Picked Stocks for Facings	2	5	0	,,	livered at rly. stn.
Flettons	1	10	0	,, ,,	,,
Pressed Wire Cuts	1	18	0	,, ,,	,,
Red Wire Cuts	1	14	0	,, ,,	,,
Best Fareham Red	3	12	0	,, ,,	,,
Best Red Pressed Ruabon Facing	5	0	0	,, ,,	,,
Best Blue Pressed Staffordshire	3	15	0	,, ,,	,,
Ditto Bullnose	4	0	0	,, ,,	,,
Best Stourbridge Firebricks	3	14	0	,, ,,	,,
2½in. Best Red Accrington Plastic Facing Bricks	4	10	6	,,	Net, delivered in full truck loads in London.
"Accrington Best Red Plastic Facing Bricks per 1,000					£2 10 0
3½" ditto Second Best Plastic ditto					2 2 6
Ditto Ordinary Second Bricks					1 11 3
Ditto Plastic Engineering Bricks					1 17 6
Sewer Arch Brick not more than 3½" in thickest part					2 0 0
3½" Chimney Bricks fit for outside work					2 6 0
3½" ditto ditto through and through					2 0 0
3½" Beaded, Ovolo and Bevel Jambs; Octagons; 2¼" and 4½" radius Bullnoses; Stock patterns					3 7 6
Accrington Air Bricks, 9"×2 course deep, each					0 0 6
Ditto ditto 9"×1 course					0 0 3

Accrington Camber Arches:—

3 course deep, 4½" soffit, per foot opening							0	1 3
4	ditto	4½"	ditto	ditto	ditto		0	1 8
5	ditto	4½"	ditto	ditto	ditto		0	2 1
6	ditto	4½"	ditto	ditto	ditto		0	2 6
3	ditto	9"	ditto	ditto	ditto		0	2 1
4	ditto	9"	ditto	ditto	ditto		0	2 11
5	ditto	9"	ditto	ditto	ditto		0	3 9
6	ditto	9"	ditto	ditto	ditto		0	4 6

Net free on rail or free on boat at works.

GLAZED BRICKS.

HARD GLAZES, (PER 1,000.)

White, Ivory, and Salt Glazed. Best.	Best. Buff, Cream, & Bronze.	Other Colours.	Second Colours.
Stretchers—			
£12 7 6 £10 17 6	£13 17 6	£17 17 6	£13 7 6
Headers—			
11 17 6 10 7 6	13 7 6	17 7 6	11 17 6
Quoins, Bullnose, and 4½in. Flats—			
15 17 6 14 17 6	17 17 6	21 7 6	15 17 6
Double Stretchers—			
17 17 6 16 7 6	20 17 6	24 7 6	17 17 6
Double Headers—			
14 17 6 13 7 6	17 17 6	21 7 6	14 17 6
One side and two ends, square—			
18 17 6 17 7 6	21 17 6	26 7 6	18 17 6
Two sides and one end, square—			
19 17 6 18 7 6	22 17 6	26 17 6	19 17 6
Splays and Squints—			
17 7 6 15 17 6	21 17 6	24 17 6	17 7

Plinth and Hollow Bricks. Stretchers and Headers—
5d. each 4d. each 6d. each 6d. each 5d. each

Double Bullnose, Round Ends, Bullnose Stops—
5d. each 4d. each 6d. each 6d. each 5d. each

Rounded Internal Angles—
4d. each 3d. each 5d. each 5d. each 4d. each

MOULDED BRICKS.

Stretchers and Headers—
8d. each 8d. each 8d. each 8d. each 8d. each

Internal and External Angles—
1/2 each 1/2 each 1/2 each 1/2 each

Cill Bullnose, Stretchers and Headers—
5d. each 4d. each 6d. each 6d. each 5d. each

Majolica or Soft Glazed Stretchers and Headers	Per 1,000	£22 17 6
,, ,, Quoins and Bullnose		27 17 6
Compass bricks, circular and arch bricks of single radius £6 per 1,000 over above list for their respective kinds and colours	Not exceeding 9in.	
Camber arch bricks, any kind or colour, 1s. 2d. each	by 4½in. by 2½in.	

Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.

* These prices are carriage paid in full truck loads to London Stations.

	s.	d.	
Thames Sand	7	6	per yard, delivered
Pit Sand	7	0	,, ,,
Thames Ballast	6	0	,, ,,

	s.	d.		Per ton,
Best Portland Cement	36	0	to 41	0 delivered
Ground Blue Lias Lime	21	0	per ton delivered.	

Exclusive of charge for sacks.

	s.	d.	s.	d.	Per yard,
Grey Stone Lime	13	6	to 14	0	delivered

Stourbridge Fireclay in sacks 27s. 0d. per ton at railway station.

TILES.

	s.	d.	Dlvrd. at
Plain red roofing tiles	42	0	per 1000 ry. stn.
Hip and Valley tiles	3	7	per doz. ,, ,,
Broseley tiles	50	0	per 1000 ,, ,,
Ornamental tiles	52	6	,, ,, ,,
Hip and Valley tiles	4	0	per doz. ,, ,,
Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000 ,, ,,
Ornamental do.	60	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	0	,, ,, ,,
Selected "Perfecta" roofing tiles:—Plain tiles (Peake's)	46	0	per 1000 ,, ,,
Ornamental do.	48	6	,, ,, ,,
Hip tiles	3	10½	per doz. ,, ,,
Valley tiles	3	4½	,, ,, ,,
"Rosemary" brand plain tiles	48	0	per 1000 ,, ,,
Ornamental tiles	50	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	8	,, ,, ,,
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 ,, ,,
Hand-made sand-faced	45	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	6	,, ,, ,,
Hartshill" brand plain tiles, sand-faced	50	0	per 1000 ,, ,,
Pressed	47	6	,, ,, ,,
Ornamental do.	50	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
alley tiles	3	6	,, ,,

OILS.

Rapeseed, English pale, per tun	£28	15	0	to	£29	5 0
Do., brown ,, ,,	26	15	0	,,	27	5 0
Cottonseed, refined ,, ,,	29	0	0	,,	30	0 0
Olive, Spanish ,, ,,	39	10	0	,,	40	0 0
Seal, pale ,, ,,	21	0	0	,,	21	10 0
Cocoanut, Cochin ,, ,,	46	0	0	,,	46	10 0
Do., Ceylon ,, ,,	42	10	0	,,	43	0 0
Do., Mauritius ,, ,,	42	10	0	,,	43	0 0
Palm, Lagos ,, ,,	32	5	0	,,	33	5 0
Do. Nut Kernel ,, ,,	35	0	0	,,	35	10 0
Oleine ,, ,,	17	5	0	,,	19	5 0
Sperm ,, ,,	30	0	0	,,	31	0 0
Lubricating U.S. per gal	0	7	0	,,	0	8 0
Petroleum refined ,, ,,	0	0	6½	,,	0	0 6½
Tar, Stockholm per barrel	1	6	0	,,	1	10 0
Do., Archangel ,, ,,	0	19	6	,,	1	0 0
Linseed Oil per gal.	0	2	5½	,,	—	
Baltic Oil ,, ,,	0	2	8	,,	—	
Turpentine ,, ,,	0	2	6½	,,	—	
Putty (Genuine Linseed Oil) per cwt.	0	9	0	,,	—	
Pure Linseed Oil "Stority" Brand ,,	0	10	0	,,	—	

GLASS (IN CRATES).

	15oz.	21oz.	26oz.	32oz
English Sheet Glass: Fourths	2d.	3d.	3½d.	4½d.
Thirds	2½d.	3½d.	4½d.	5½d.
Fluted Sheet	2½d.	3½d.	6½d.	7d.
Hartley's English Rolled Plate:	⅛in.	3/16in.	¼in.	
	2½d.	2½d.	3d.	

	White.	Tinted
Figured Rolled and Repoussine	3½d.	5d.

VARNISHES, &c.

	Per gallon.		
Fine Pale Oak Varnish	£0	8	0
Pale Copal Oak	0	10	0
Superfine Pale Elastic Oak	0	12	6
Fine Extra Hard Church Oak	0	10	0
Superfine Hard-drying Oak, for seats of churches	0	14	0
Fine Elastic Carriage	0	12	0
Superfine Pale Elastic Carriage	0	16	0
Fine Pale Maple	0	16	0
Finest Pale Durable Copal	0	18	0
Extra Pale French Oil	1	1	0
Eggshell Flatting Varnish	0	18	9
White Copal Enamel	1	4	0
Extra Pale Paper	0	12	9
Best Japan Gold Size	0	10	9
Best Black Japan	0	16	0
Oak and Mahogany Stain	0	9	0
Brunswick Black	0	8	0
Berlin Black	0	16	0
Knotting	0	10	0
French and Brush Polish	0	10	0

Trade News.

WAGES MOVEMENTS.

LONDON.—The exaggerated statements in the daily papers with regard to the painters' and labourers' strikes and the wild talk about "possible developments" are ludicrous. More painters have come out during the week, but many unionists and non-unionists have returned to work with increases previously offered by the masters. In some instances, it is obvious enough that the real objective is to coerce the non-unionists into the union. For instance, the dispute at the Athenæum Club was announced as settled on Tuesday. But when the men returned to work on Wednesday morning, they found that the non-union men with whom they had worked up to the beginning of the week had returned also. They communicated with their officials, and about eleven o'clock all the union men, fifty-eight in number, were called off, and a meeting was held in the kitchen for the purpose of compelling non-unionists to join the society. After a discussion lasting nearly an hour, the non-unionists gave in. Each of them took up a society card on the spot and paid the full entrance-fee, 3s. It was agreed that none but union men should be employed on any part of the job, and the men were then ordered by their officials to return to work. At Bermondsey on Wednesday, the "peaceful persuaders" smashed up painters' ladders, and upset the paint-pots. The non-unionist painters took refuge in the house where they were employed. Yesterday there was a conference at the Office of Works between Earl Beauchamp and a deputation of the London Building Trades Federation with regard to the continuance of non-union painters in the employ of the Office of Works contractors. Earl Beauchamp, after the interview, said he must reserve his decision, which should be made known as soon as possible. The London Master Builders and Decorators met last (Thursday) evening at the Queen's Hall, Holborn Restaurant, and some of the labour federations were to demonstrate in Hyde Park later with the aid of Mr. Ben Tillett, who seems to have had a lively time with Mr Havelock Wilson on Wednesday!

BARROW-IN-FURNESS.—The refusal of the Barrow plumbers to go to arbitration with the employers on the wages question has resulted in an entire lock-out of all the men engaged in the building trade at Barrow. The Barrow Master Builders' Association have taken this lock-out step with a view to forcing the plumbers either to go back or to arbitrate. The plumbers are firm, and have much trade-union sympathy. Many hundred houses are in course of erection at Barrow, to meet the unprecedented demand for them.

GLASGOW PLUMBERS' WAGES.—Mr Robert Crawford, LL.D., who acted as arbiter in the dispute between the plumbers of Glasgow and district and the employers, has issued his award, increasing the rate of pay from 10d. to 10½d. per hour, the increase to date from September 1. The men asked an advance of 1d., while the employers refused to concede any increase.

LIVERPOOL.—It is reported that 5,000 men are idle in Liverpool as a result of the dispute between the bricklayers and the plasterers as to the demarcation of work in the building trade.

GOOLE.—The bricklayers' strike at Goole ended on Friday, the masters conceding their demand that the rate of pay should be immediately advanced from 8½d. to 9d. an hour. The bricklayers' labourers have sent in an application for a halfpenny an hour advance, which the masters decline to give.

The urban district council of Scunthorpe, have raised the salary of their surveyor from £250 to £280 a year.

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Seasoned

Hardwoods,

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120, Bunhill Row, London, E.C.

TENDERS.

*** Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

Acton.—For the construction of a sorting room, 74, Avenue-road, Acton, W. Mr. Percy Pratt, A.R.I.B.A., architect:—

Poore and Son	£333 9 0
Ferris	320 0 0
Gaze	313 0 0
Bollom	310 0 0
Bolton	299 0 0
Perry	291 0 0
Mitchell	279 0 0
Leeder and Co. (accepted)	275 17 0

Atherstone.—For repairs and painting at the grammar school, for the governors. Mr. J. W. Simpson, Berridge-street, Leicester, architect:—

Blower, T., and Son, Atherstone	£483 5 3
Hirons and Hatton, Atherstone	432 8 0
Bowles and Son, Leicester*	352 0 0

* Accepted.

Barham.—For the erection of a bridge at Barham, for the Bridge rural district council:—

Mount, C., Canterbury (accepted)	£150 0 0

Bromsgrove.—For fixing baths in the infirmary and master's quarters, for the guardians:—

Jennings, H. (accepted)	£129 1 0

Buckingham.—For the supply of engines at sewage works, for the town council:—

Tangye (accepted)	£436 0 0

Burnley.—For painting at the workhouse, for the guardians:—

Aspinall, W., St. James'-row, Burnley (accepted)	£185 0 0

Buxhall.—For erecting mistress's house at Buxhall Council School, for the East Suffolk Education Committee:—

Gibbons, A. J., Crowfield (accepted)	£365 0 0

Chedision.—For building additions to the council school, for the East Suffolk Education Committee:—

Kenny, J. A., Ipswich (accepted)	£788 0 0

Colehill.—For the erection of a Primitive Methodist chapel, for Little Lonen Society, in the Poole Circuit. Rev. A. W. Welford, minister. Messrs. Corbin Harris and Son, King's Park-drive, Bournemouth, architects:—

Hayward, J. and W.	£650 0 0
Burden, A. B. and S. A.	425 0 0
Mills and Sons	395 0 0
Habgood, N. J., Colehill*	325 0 0

* Accepted.

Colwall.—For the construction of new sewers, for the parish council:—

Law, Kidderminster	£2,931 15 4
Child and Withers, Worcester	2,739 4 6
Broad, Malvern	2,473 1 2
Trentham, Birmingham	2,217 16 0
James, Colwall	2,139 17 9
McCann, Malvern	2,080 4 7

Duesley.—For the erection of 38 workmen's houses, for the Rural District Council. Mr. A. W. Probyn, Gloucester, architect:—

Simmonds, J.	£9,865 0 0
Lovell, S.	9,187 0 0
Field, G.	8,900 0 0
Lister, R. A., and Co.	8,415 0 0
Heard, A. G.	8,145 6 6
Halls, W. J. B. (accepted)	8,050 0 0
Williams, S., and Son	7,039 0 0

* Exclusive of roads and drains.

Duesley.—For erecting 38 workmen's cottages, for the parish council:—

Halls, W. J., Gloucester*	£8,150 0 0

This, the lowest, being considerably above the estimated cost, the scheme has been referred back so that less expensive houses may be planned.

* Recommended for acceptance.

East Preston.—For relaying drain in Sea-lane, East Preston, for the guardians:—

Drake and Co.	£402 0 0

(Recommended for acceptance.)

Frodingham.—For carrying out waterworks, for the urban district council, Mr. J. Green, Council Offices, Frodingham, engineer:—

Kettle Bros., Peterboro'	£835 17 6
Lane Bros., Mansfield	804 0 9
Edwards and Co., Doncaster	716 5 0
Porter, S. Barnbydeen	708 3 0
Yewdale, Y., Winteringham	677 16 2
Swift, S., Selby	553 16 11
Buckley, H., Bradford (accepted)	540 0 0

Holbrook.—For building a special subjects centre, for the East Suffolk Education Committee:—

Gibbons, A. J., Crowfield (accepted)	£499 0 0

Leicester.—For additions to the Aylestone Park Working Men's Club. Mr. J. W. Simpson, Berridge-street, Leicester, architect:—

Herbert, H., and Sons	£2,397 0 0
Bowles and Son	2,354 15 0
Sharp, W. M., and Son	2,328 0 0
Haskard, Rudkin, and Beck	2,296 0 0
Chitham and Co.	2,234 0 0
Chapman, J., and Sons, Ltd.*	2,187 2 0

* Accepted. (All of Leicester.)

London, W.—For wood-pavement works in King-street and Goldhawk-road, for the Hammersmith Borough Council:—

Goldhawk-road:—

Trentham, G. P., Walthamstow	£8,459 0 0
Acme Flooring and Paving Co., Ltd., Victoria Park	7,095 14 7
Wimpey, G., and Co., Hammersmith	7,093 9 2
Griffiths, W., and Co., Bishopsgate-street	7,170 10 0
Mowlem, J., and Co., Westminster	6,998 8 6
Improved Wood Paving Co., Queen Victoria-street, E.C.*	6,837 18 0
Smith, P., Kilburn	5,725 0 4

King-street:—

Trentham, G. P., Ltd.	5,260 0 0
Griffiths, W., and Co.	4,887 12 8
Acme Flooring & Paving Co., Ltd.	4,755 13 6
Mowlem, J., and Co.	4,740 12 8
Improved Wood Pavement Co.	4,584 13 0
Wimpey, G., and Co.*	4,349 4 3
Smith, P.	2,537 12 11

* Recommended for acceptance.

Louth.—For repairing the front of the town hall, for the corporation:—

Clarke, G. H. (accepted)	£115 0 0

Maesteg.—For private street works at the rear of St. Michael's-road, for the Urban District Council:—

Rogers, P., Maesteg	£1,241 13 2
Treharne, E., Maesteg	597 5 3
Hill Bros., Swansea	584 6 0
Morgan, J. L., Pontypridd	571 2 8
Smith, J., Bridgend	498 9 8

Surveyor's estimate, £383 14s. 9d.
Work to be carried out by surveyor.

Maidens, South Ayreshire.—For building a new sea wall from the shore to the Maiden Ends Islets:—

M'Monagle, J., Ayr (accepted)	£3,000 0 0

Martlesham.—For enlarging the council school at Martlesham, near Woodbridge, for the East Suffolk Education Committee:—

Bilby Brothers, Melton, Woodbridge (accepted)	£470 0 0

Monkseaton.—For building the new railway station, for the directors of the North-Eastern Railway Co. Mr. W. Bell, of York, architect:—

Noble and Son, Dunston-on-Tyne (accepted).

Roffey.—For erecting new infants' school and additions to the existing All Saints Council School at Roffey, Horsham, for the West Sussex and Chichester Joint Education Committee. Mr. H. P. Roberts, F.B.I.B.A., Thurloe House, High-street, Worthing, county education architect:—

Ockendon, T., and Son, Crawley	£3,096 0 0
Baker, H., and Son	3,000 0 0
Crosby and Co., Ltd., Farnham	2,990 0 0
Cook, R., and Son, Crawley	2,987 0 0
Peskett, A., and Co., Crawley	2,884 0 0
Potter, G.	2,880 0 0
Lindfield, H., and Son	2,880 0 0
Sandell, E. and Sons, Worthing	2,875 0 0
Murrell Bros.	2,844 0 0
Mitchell Bros., Shalford	2,790 0 0
Rowland Bros. (accepted)	2,749 0 0

(Rest of Horsham.)

Rotherham.—For supplying gates and railings to the Kimberworth new schools, for the town council:—

Nicholson, W., & Son, Ltd., Leeds	£156 15 0

(Recommended for acceptance.)

Rudgwick.—For additions and improvements to the Rudgwick Council School, for the West Sussex and Chichester Joint Education Committee. Mr. H. P. Roberts, F.R.I.B.A., Thurloe House, High-street, Worthing, county education architect:—

Mitchell Bros., Shalford, Guildford	£489 0 0
Thorpe, H. F., Cranleigh	475 0 0
Hammond, A. B., Loxwood, Billingshurst	450 0 0
Wadey, J., Billingshurst	446 0 0
Crosby and Co., Ltd., Farnham, Surrey	434 0 0
Peskett, A., and Co., Crawley, Sussex	428 0 0
Spooner, H., Loxwood	417 10 0
Baker, H., and Son, Horsham	410 0 0
Reeves and Port, Rudgwick, Horsham (accepted)	405 10 0

Sheffield.—For the supply and erection of one combined indicating and recording water meter, including steel notch tank and float-chamber, for the corporation:

Lea Recorder Co., Ltd. (accepted)	£818 0 0

Smeeth.—For the execution of repairs at the Smeeth Council School, for the Kent Education Committee:—

Howland, J., and Sons, Mersham	£157 10 0
Shippam, W., Ashford	148 0 0
Erridge, R., Willesborough*	141 0 0

* Accepted.

Southall-Norwood.—For the provision of a public convenience, for the urban district council:—

Foster, F. and G., Norwood Junction (accepted)	£1,364 0 0

Southend.—For furnishing the nurses' home at the sanatorium, for the town council:—

Baxter, F. J. (accepted)	£256 14 0

Southend.—For the supply of dampers and access doors at the sewerage works, for the town council:—

Green and Son, Wakefield	£169 14 6

Southend.—For supply of a combustion boiler setting for use at the sewerage works, for the town council:—

Poulton & Timmis, Ltd., Reading	£1,231 3 6

(Recommended for acceptance.)

Stanley.—For levelling, paving, metalling, &c., Spen-street and other eight adjoining streets on the South Stanley estate, for the urban district council. Mr. A. Routledge, surveyor:—

Wears, J., and Sons, Pelton	£4,292 12 0
Simpson, G. E., Newcastle-on-Tyne	4,022 8 8
Armstrong, G., Whitley Bay	3,830 17 6
Meredith, H., Durham	3,486 12 2
Dyson, E., Pelton	3,463 17 1
Dyson, G., Pelton	3,312 19 6
Heel, P., Stanley	3,087 10 0
Birtley, R. C., Stanley	3,081 19 10
Johnson and Strong, Stanley*	2,992 17 4

* Accepted.

St. Austell.—For laying sewers on the Poltair estate, St. Austell, for the rural district council:—

Bodmin, W. E.	£372 0 0
Shaddock, W. H., Plymouth	359 17 0

(Referred back to committee for consideration.)

St. Marychurch.—For installing the electric light at the parish Church:—

Drury and Chaffe (accepted) about £150.

Wells-next-the-Sea, Norfolk.—For building church rooms. Messrs. Eagleton, of Lynn, architects:—

Needs, J.	£699 0 0
Shanks, R.	678 19 6
Hinson, T. (accepted)	659 0 0

Whittlesey.—For the restoration of St. Mary's tower and spire. Mr. H. F. Traylen, A.R.I.B.A., Stamford, architect:—

Bowman & Son, Stamford, about (Accepted).	£100 0 0

TO CORRESPONDENTS.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

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September 5, 1913. Volume CV.—No. 3061.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House, Strand, W.C.

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OUR ILLUSTRATIONS.

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Yorkshire Institution for the Deaf, Doncaster. New Preparatory Department and Baths. Views and plan. Mr. Morris Thompson, A.R.I.B.A., Architect.

Warehouse, Kingly-street and Ganton-street, W. View and plans. Messrs. Banister Fletcher and Sons, Architects.

University Hall, Cape Town, South Africa. Views of the Assembly Hall and Students' Gallery. Messrs. W. Hawke, F.R.I.B.A., and W. N. McKinlay, Architects.

Eyford Park, Gloucestershire: Details. Mr. E. Guy Dawber, F.R.I.B.A., Architect.

The New Physical Laboratory, Teddington. Mr. W. D. Caröe, M.A., Cantab., F.R.S., F.R.I.B.A., Architect.

Reinforced Concrete Buildings.

PRÆMONITUS, PRÆMUNITUS.

The days of labour and counsel are returning; may renewed strength for the first help all of us to seize fair opportunity, and courage and calm consideration inspire and guide those of us who are called to the work of guarding and broadening the common interest. Probably, some of us during the brief spell of leisure which is ending, have found the time and inclination, which the busy days of the rest of the year deny, to ruminate on some of the unsettled problems of the time which more immediately concern ourselves. They abound in all directions, and, perhaps, in far greater degree than some of us fancy, their solution depends more on influences to which we are blind than we recognise. With some of us, the "want to see the wheels go round" of the watch of Time is as eager as that of Helen's babies. The true perception of the hidden springs of change and action is given to few of us. In most of us the impulses of rash self-confidence or stubborn reaction simply tempt us to move the regulator fast or slow, and the watch gains or loses far in advance, or behind, the real time, and lands us in confusion and difficulty. Once or twice in an epoch only it seems granted to the true Statesman to understand that his chance of true service to the commonwealth comes only with the translation of the energies of the Time Spirit into common effort to avoid the crisis of the hour, or to seize the possibilities of the new development of circumstance.

There are three matters at present under consideration by those charged with the administration of the affairs of the leading representative organisation of the architectural profession, which, by common consent, demand attention. Of two, we shall say nothing to-day. Of the third, which is by far the most important, we can only say we wish it were likelier to come to the forefront again than is probable. Two years ago, Registration seemed in sight, and the amalgamation of the two leading architectural societies almost an accomplished fact. We all know that failure followed, as disappointingly as unexpectedly. To whomsoever we attribute the blame, according to our sympathies or prejudices, we ought all to take it for granted that they who moved the regulator too fast, and they who set it back to "slow," were equally loyal and sincere. What stopped the watch? Surely the lack of energy of the little wheels! Is that likely to be evoked by the report on Registration we are awaiting? Is it more likely that the coming session of the R.I.B.A. will pass without the presentation of any such report, and that Mr. Reginald Blomfield's presidency will expire in peace as fruitless as the more active propaganda of Mr. Leonard Stokes?

One last question: Has another influence perhaps a disturbing one embodied itself in doubts during the last twelve months which must have afflicted some of us? Those of us who have urged Registration during the last thirty years have rejoiced to point to the results achieved by organisation in other professions—notably in that of Medicine. And we had reason. The loyalty of medical men to their representative organisation was as patent as the status and benefits it had secured them. A crisis supervened in connection with the Insurance Act, and the loyalty of the majority of medical men concerned broke down. We have no right to sit as judges, and say why. But as surely as it was so, in the not distant future a State Medical Service is certain—for good or evil, who knows? And if Registration equally fails to bind architects, so it is quite conceivable that the "panel architect" may hasten to secure the wages he cannot to-day earn. Only the other day it was flung in our teeth, in connection with a competition which we had condemned, and the Institute had tabooed, that we were as big fools as the Honourable Society of Tooley-street Tailors, who, before one of its members made a suit of clothes, insisted that his customer should pay a premium for the pattern and cut! So idiotically do the ordinary guides of public opinion fail to understand why we seek to protect the public from incompetence and charlatanism.

More imperatively at the moment, perhaps, are wisdom and courage necessary in the councils of the organisations that seek to promote the interests of the Building Trades. For fifty years, here and elsewhere, we have consistently advocated the rights of the trade-unionist workman. We have never employed non-union labour, because it did not pay. We have never had a dispute with a Union that was not amicably settled. In disputes between other employers and their workmen we have never taken sides where questions of wages and the like were being fought out. But, to-day and always, we have doubted the wisdom of the trade-unionist who demands the exclusion from work of the non-unionist, and wants to coerce him into the union. "Why?" Trade-unionists have said to us, "Are you not seeking to set up an architectural union, and to coerce all architects into Registration?" And our reply, of course, has been: "Nothing of the kind. We are asking the State simply to test and license the competent architect, and so to enable the public to distinguish him from the chimney-sweep or undertaker, who desires to add 'architect' to his other designations on his doorplate." We seek, as it is, to exclude the blackleg architect from a competition in which he seeks to win by underbidding our recognised scale of remuneration; but if a committee or local authority is fool enough to employ him, we have no right to proclaim a strike when the building is begun. In most cases, the trade-unionists have done little or nothing to insist on the competence of their admitted members; and that is why, especially in some of the less skilled trades, people will employ the blackleg. That is why, among the painters, many workmen who are as good as any union painter, and better than some, will not join the union because it gives them no protection against the blackleg who takes a lower wage because he can only do bad work. That is why stupid and fruitless strikes are multiplying. That is why, while during the five years 1902-6 about 11,000,000 working days were lost by strikes in the United Kingdom, and during the five years 1907-11 about 33,000,000; in the single year 1912 it was over 40,000,000! That is why men drop out of the unions, such as the South Wales Miners' Federation, by thousands, in spite of the intimidation of their fellows.

These words of friendly warning are scrappy and vague enough, Heaven knows! We ourselves, doubtless, are among the blindest of those who "want to see the wheels go round." But we think we know this much: Our art and its many kindred pleasant crafts have, even as things are, the possibility of pleasure in toil which human beings of blood and brain and muscle are entitled to demand. And, in the days to come, the promise of better things, when the canker of commercialism, and the drudgery of the factory slave, and the despair of the husbandman, shall be mere memories of an evil past. But if Art, and the beauty of the earth alone can redeem men from savagery of life, and give them employment which shall guarantee self-respect and reasonable rest, then it is as true as when Morris said it, thirty years ago: "It means the *properly* organised labour of all men who make anything."

PHOTOGRAPHS AT THE LONDON SALON.

The fourth annual exhibition of the London Salon of Photography, which opens to-morrow at the galleries of the Royal Society of Painters in Water Colours, 5a, Pall Mall East, shows a further increase in the number of works hung—348, against 295 last year, and a steady advance in the technical quality of

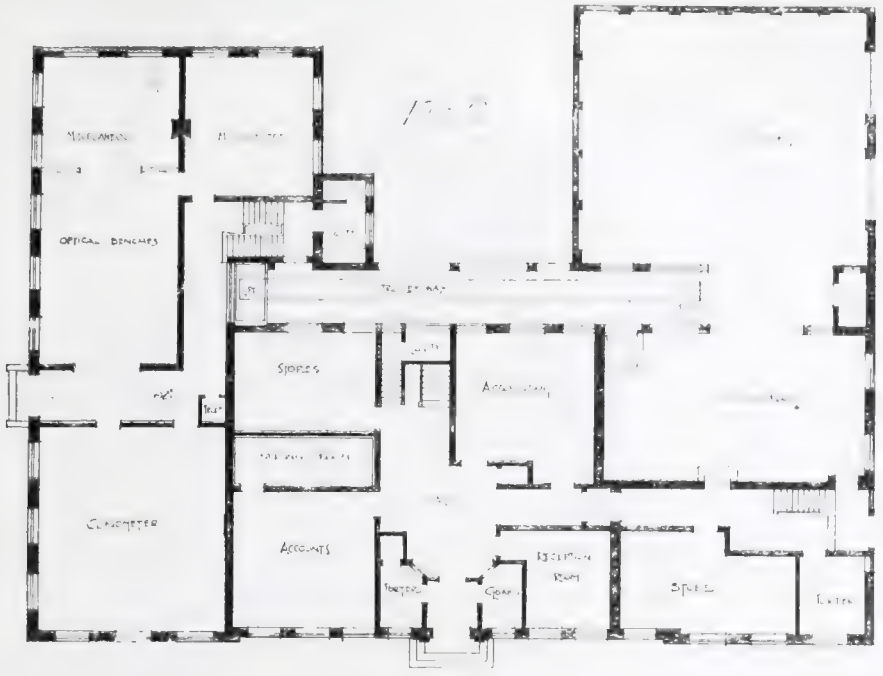
the exhibits. The names of Continental artists predominate, although some of the very best work is shown by Mr. F. H. Evans, Mr. John H. Anderson, Mr. Muir Ward, and Mr. James McKissack, all residents in Great Britain. The feature of this season's exhibition is the development of several new processes of bromoils, both in monochrome and in colours, and from several of these, in the skilled hands of those working hard at the problems involved, very interesting and highly artistic results may be confidently anticipated in the near future. The hanging of the pictures has been well managed, and the admirable lighting gives facilities for comfortable inspection.

On entering the large gallery, which is alone utilised for the exhibition, attention is at once drawn to No. 2, "Licht and Schatten," by Rudolf Balogh, of Buda Pesth, showing a maiden in white frock standing before an easel in the open air, her figure silhouetted in sharp definition on the sunlit, whitewashed wall behind. No. 7, "Rhythm," by A. Romano, of New York, is a study of piles and scaffolding beneath a pier, with ripples and reflections on the wavelets of an ebbing tide. "The Sphinx," by Alex Keighley, of Steeton High Hall, Keighley, (8), depicts in deep shadow that mysterious monument and the three huge pyramids across the sands beyond. John M. Whitehead's "The Haunted Mill" is a scene by dim moonlight, shining through storm-driven clouds, of a windmill on the highest ground of a wide expanse of heath—evidently a clever combination of two good negatives, as the horizon reveals. For Nos. 17, 18, 19, and 20, John H. Anderson has apparently gone to Lowestoft harbour for subjects—closely packed steam trawlers, busy quays strewn with boxes of fish, and over the water the long, unbroken lines of railway sheds, all exemplified in direct photogravures of the highest quality, and of considerable dimensions. In No. 58 J. H. Anderson migrates to the canal in Amsterdam, and in 59 gives us a view along Lower Thames-street with St. Magnus's cupola as the central feature. An Australian scene is depicted by Harold Cazneaux, "An Historic Cottage at Berry's Bay," near Sydney, N.S.W. (28), a one-story straggling but-and-ben of loose stones and weather-boarding on a dune. "Study," (35), by Oscar Hardee, shows the draped head, bare shoulders, and outspread hands of a young girl who leans forward on her forearms in the attitude of the Sphinx. Near by is a series of half a dozen platinum paper en plein air studies by Guido Rey, of Turin (Nos. 20 to 25) of women in Piedmontese costumes. Close by on the same wall are a series of admirable chamber portraits by Rudolf and Minya Duhrkoop, of Hamburg (49-54). "The Shiek's Tomb," (44), by Alex Keighley, is from Lower Egypt; a domed structure enframed in palms and olives has against its white walls on the sands a number of Arab men, women, and children, and all are reflected in a shallow pool in the foreground. R. Macfarlane Cocks, in 71, 72, and 73, gives us three bromoils in colour; the first is a haze at Chartres, and the last, "The Opal Sea," shows, purposefully out of focus, an old woman gathering kelp on the rocks. One of the best of these bromoil studies in colour is skied over these—76, "Edinburgh Castle," seen from so close below in the Grassmarket as to exaggerate the precipitous character of the rocks; this very effective picture is the work of Cavendish Morton and Hector Murchison. "Among the Clouds," (97), shows in profile and in deep shadow a girl seated on the edge of a broken hillside against a background of sunlit cumuli Anna Pavlova, in ballet costume, figures as "Bacchanalia" (100) in a work by Saul Bransburg, and also in No. 194, by Madame d'Ora, of Vienna. Of the excellent exhibits by Bertram Park, honorary secretary of the Salon, the best is 105, "The Japanese Sunshade," a well-balanced composition. An effect as of a painting on canvas is given by J. L. Tucker's "Study of Birch Trees in Winter," a beautiful bromoil in colour (111). No. 136, by the same artist, "Quimperlé," shows in bright hues the river in that Brittany town, bordered by lofty ochre-hued houses on either side, the view closing in a stone bridge. Another colour bromoil is "A Winter Evening" (116), by Fred Judge. One looks over the bend of a shallow river running amid sand-dunes under a wintry sky. Just beyond are eight platinotype portraits by Karl Schenker, Nos. 120-7, in which a very smooth effect is achieved. A much more simple treatment is "Cromer Lighthouse" (165), as viewed from the barren sandhills inland, by Thomas H. B. Scott. Very crude harmonies in orange and brown are shown in the bromoil studies of women's heads, Nos. 172 and 173, by Major Haig. No. 179 is a bromoil of "Boulogne Harbour," with the church of S. Pierre seen on the high ground over the shipping; this and No. 180, a delicate bromide of the apse and fleche of "Notre Dame, Paris," faintly seen through the interlaced boughs of a holly bush, are by James McKissack, of Glasgow. Three studies of pierrots (Nos. 201-3), by Madame d'Ora, are very effective; we like best No. 203, in which the performer contrives with his hands, in shadowgraph, the head of a barking dog; the pose and treatment of light and shade are admirable. Half a dozen experiments in colour bromoils are shown by Dr. Erwin Quedenfeldt, of Dusseldorf; of these No. 217 represents a woman as in an early Egyptian bitumen painting in bold and harsh contrasts of high colour; we shall look for further results from these tentative chromatic efforts. One of the approaches to the "Tower Bridge" (220), as seen from the foreshore, is made by F. Seyton Scott quite a harmonious composition. An eccentric effort is No. 230, in which Pierre Dubreuil gives us a view of the Arc de l'Etoile as seen at the end of a long perspective along the Champs Elysées, looking between the fore and hind legs of a cab horse, whose body forms the head of the picture frame. Beneath this, in grim contrast, the harsh lines of Burton's "Arch at Constitution Hill," with the newly-added quadriga, stand out in Dr. A. R. F. Eversheds platinotype. The huge supports of the Eiffel Tower enframe a hazy view of the "Champ de Mars" (237), one of several gum exhibits sent in by C. Willé. The direct print portraits with coloured figures, Nos. 244-9, shown by Josef Pécsi, of Buda-Pesth, are of rich quality and great merit, and other fine examples of bromoils in colours are the two large landscapes of sedgy moorlands, Nos. 287 and 288, the work of Leonard Misonne, of Gilly, Belgium.

Far and away the finest architectural exhibit in the gallery is Frederick H. Evans's platinotype, "Across the Transepts, Westminster Abbey," a view looking down towards the statues of Chatham and the Cannings at the end of the north transept; the effect of the marble monuments with the arcading and rose window above, and the vertical lines of the piers and their shafts is that of a poetic composition recalling some of the late Sir Wyke Baylis's water-colours of French cathedral apses. F. H. Evans also shows in 214 an attractive "Sunny Glade in the New Forest," but the portrayal of architectural interiors as seen with a trained eye is his forte. Mention should be made in this connection of J. M. Sellors' "Wesleyan Memorial Hall, Westminster" (209), a peep at the little city of "Dol," in Brittany (199), by Charles Job, "Wren's Bridge," St. John's College, Cambridge" (308), by Bertram Cox, Harold Crawford's view across the quad through the "Gate of Honour, Caius College," in the same 'varsity (324), and "Fountains Abbey," as seen from the south (255), by J. Harold Liebreich. Of several attempts to reproduce that most picturesque of walled towns, Rothenburg, the best are those by Mr. James McKissack (178), and Hans Rudolphi (271). Robert Demachy, of Paris, shows some impressionist studies of women (345-8), in which colour is dexterously superposed by hand, and C. Puyo, of Paris, has also in Nos. 341-4 some excellent works. Admirable portrayals of absolutely antagonistic subjects, Niagara Falls and skyscrapers at New York, are given by Ward Muir in Nos. 331-4.



Fig. 1. THE NEW PHYSICAL LABORATORY, TEDDINGTON.
Mr. W. D. Caroe, M.A. Cantab., F.S.A., F.R.I.B.A., Architect.



REINFORCED CONCRETE BUILDINGS.

By WM. G. SHIPWRIGHT, Licentiate R.I.B.A., M.C.I., Chartered Surveyor (by Exam.)

THE NATIONAL PHYSICAL LABORATORY AT TEDDINGTON.

W. D. Caröe, M.A. (Cantab), F.S.A., F.R.I.B.A., Architect.

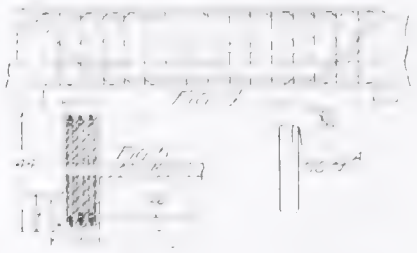
The administrative and optical wing of the National Physical Laboratory at Teddington, which was recently completed, constitutes a good example of reinforced concrete applied to buildings erected for educational purposes. The structure, which is three stories high, is shown in the photograph. (Fig. 1.)

The outer walls are built in brick to a very effective design, with deep purple facings and red-brick quoins and dressings; but the interior construction has been carried out chiefly in reinforced concrete. The special features in the latter work are the roof construction, which had to be specially designed to secure the required lighting arrangements.

The total frontage of block is 134ft., and area occupied is about 10,000 superficial feet. The ground floor shown on the plan (Fig. 2) is occupied by the clinometer, optical, microscopic, and accounts rooms, together with some packing and storage accommodation. The periscope, telescope, and binocular rooms, with the directors' and secretary's rooms, are placed on the first floors, whilst the second floor is allocated to the lecture rooms, joinery shop, library, and publishing rooms, with some spare accommodation for future development.

The floors throughout are constructed in reinforced-concrete slabs, 5½in. 6½in., and 7½in. in thickness, according to the spans and nature of the loading, the scheme being designed on the general lines shown in Fig. 3, which forms part of the ground-floor plan. The 7½in. slabs are used in the front portion, forming the clinometer-room floor, and are reinforced with ⅜in. Kahn "rib" bars, placed at 12in. centres, and carried continuously across the beams in alternate bent and straight rods. The average length of rods is 21ft. 3in., 6in. and 6½in. slabs are used in the optical room behind, with ⅝in. "rib" bar reinforcement at 17in. centres.

The beams follow the general type; that employed at A on the ground floor plan (Fig. 2), and illustrated in detail (Figs. 4 and 5), being a good example. It acts as a lintel, carrying the wall above, and also support the floor. The total depth is 18in., and it is designed as an upstand beam for about one-half of this depth. The reinforcement consists of three 1¾in. "Kahn" and



three ⅝in. "rib" bars in the compression boom, and three 1¾in. "Kahn," one 1in. and two ⅝in. "rib" bars in tension boom. Fig. 4 shows the bending of these rods to secure shear resistance in the elevation, and the bent and tied stirrups are seen in Fig. 4A, together with the application of this construction in Fig. 5.

The roof construction embodies the most interesting section of the reinforced work, and a part of the roof plan, taken in the centre of the block, is illustrated in Fig. 6. The arched trusses forming the principals in this section of the roof are shown in the detail (Fig. 7). The total span is 22ft. 6in., and the truss is constructed with one 1½in. "Kahn" bar carried from the supporting walls, kneed at the intersection of the collar beam, and lapped and bent round into the concrete of the counter-principal at the apex. An additional 1½in. "Kahn" bar 12ft. 3in. long, is added in the narrow section of the arch, and a ¾in. "rib" bar, turned upwards and bent across the supporting walls.

The collar beams are formed with two ¾in. "Kahn" "rib" bar reinforcement in the lower part of the section, and two ⅝in. "rib" bars in the upper, all of which are linked around the two upper 1⅛in. "rib" bars in the principals. The apex is braced with ⅝in. "rib" bars, bent at both ends into the principals, and 1in. by ⅛in. stirrups, placed at 6in. intervals, securely tie the whole of the reinforcement and secure homogeneity in an ingenious piece of reinforced construction.

The principal employed at the intersection of the hip is illustrated in Figs. 8, 8A, and 8B.

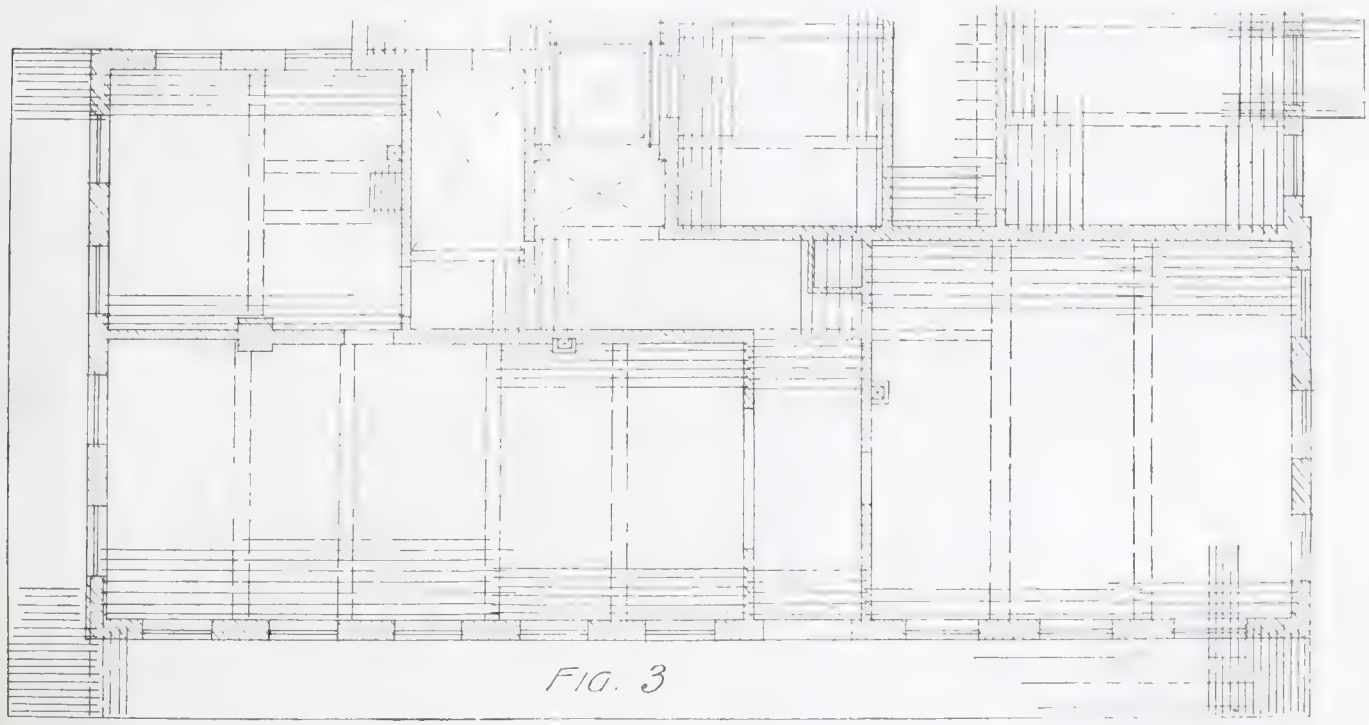
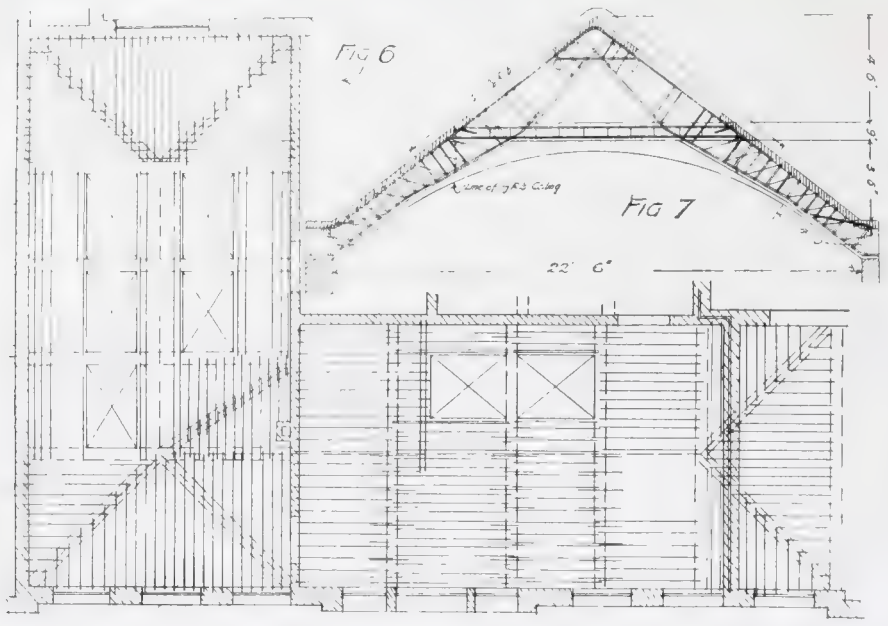
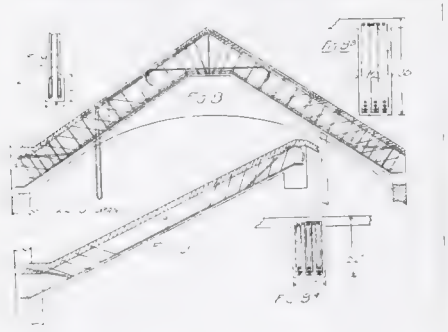


FIG. 3



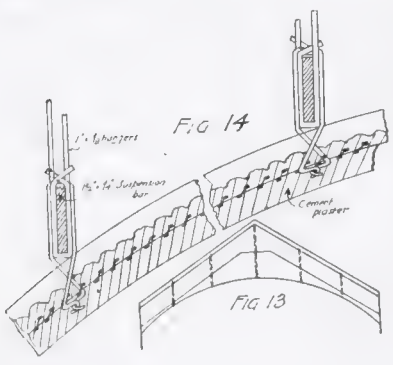
This beam is necessarily constructed with solid concrete above the arched portion, in order to accommodate the hips, and the construction has, accordingly, been modified by employing three 1¼in. "Kahn" bars for the tension stresses, with an extra tie of three ¾in. "rib" bars at the apex. These arch beams also support the 4in. square hangers for the galleries, each of which latter have



four ¾in. rib bar reinforcement. This method of construction entirely obviates the obstruction of the library floor by piers or columns or the adoption of expensive cantilever construction. The section of the gallery beams at the foot of the hangers is shown in detail (Fig. 9).

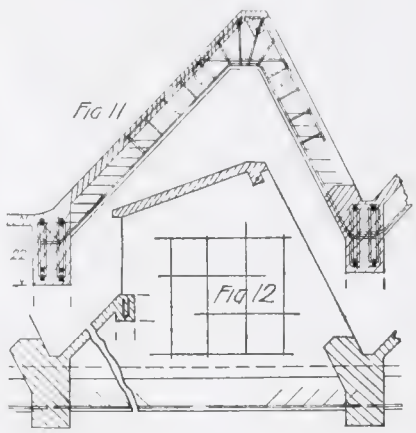
The hip construction is shown in Fig. 10. Two 1¼in. "Kahn" bars and two ⅝in. "rib" bars are used as tension reinforcement, the latter being bent up and hooked over the rods of the principal.

Fig. 11 illustrates a section through the

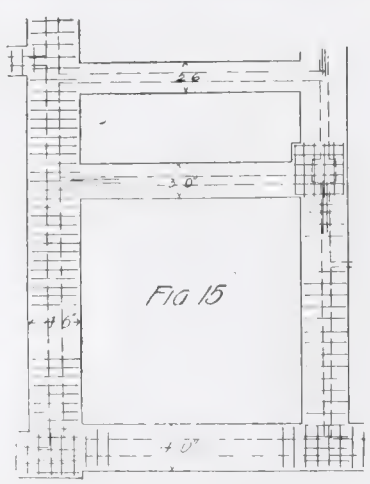


workshop skylights and the supporting beams. The lights are open on the right hand side, with 3in. concrete raking risers on the left. The beams used to support these skylights are 12in. deep, with one ½in. "Kahn" bar on the lower side and two ½in. "Kahn" bars on upper, alternately bent at the upper end into the concrete of opposite slope. Fig. 12 shows the walls at the ends of the skylights, which are constructed with a lattice of ⅜in. bars laid horizontally and vertically at 12in. intervals.

The suspended ceiling beneath the arched beams is shown in the outline cross-section



(Fig. 13). This ceiling, which is alcove in form, is constructed throughout in "Hy-rib" steel lathing and cement plaster. A detail, showing the method of fixing, is given in Fig. 14. One inch by ⅛in. strap iron hangers are attached to the principals at the upper end and linked at the lower end around 1½in. by ¼in. longitudinal suspension bars, from



which 12-gauge wire is taken through the "Hy-rib" sheeting. The metal sheeting, which is shown in section in the detail (Fig. 14) constitutes, in conjunction with cement plaster, a very strong ceiling.

The foundations are reinforced beneath the walls throughout in the manner shown in Fig. 15. One ½in. "rib" rod is usually employed at 9in. intervals transversely across the trenches, with lattice formation beneath the piers.

The reinforced concrete in this building indicates another of the uses to which this material may advantageously be put, and illustrates some excellent detail in roof construction designed in the Kahn System by the Trussed Concrete Steel Co., of 82, Caxton House, Westminster, S.W.

BOARD OF EDUCATION: EXAMINATIONS IN ART, 1913.

With the lists of candidates who passed the examinations in 1913, the reports of the examining committees are given. We reprint them because the "regrets," which agree with some of our recent criticisms, should be heeded by future candidates.

The Board regret to find that their examiners, amongst whom were experienced teachers in schools of art, are not able to report more favourably on the general standard of merit reached by the candidates, especially in the subject of drawing. They have reason, however, to believe that many of the best students have been judiciously advised by their teachers to defer entering for the new examinations until 1914, and they look forward with some confidence to better results in that year. In the meantime, they do not doubt that teachers in schools of art will carefully study the reports of the examiners, and take such steps as are indicated by the criticisms and suggestions made by them, as regards the organisation of the schools and the methods of instruction.

The members of the Art Examining Committees were: For the examination in Drawing: Mr. S. J. Solomon, R.A. (chairman); Mr. H. A. Bowler, H.M.I.; Mr. G. P. Gaskell, R.B.A., R.E., Principal of the Polytechnic Institute School of Art, St. Marylebone, London; Professor A. B. Pite, F.R.I.B.A., Professor of Architecture at the Royal College of Art; Professor E. S. Prior, M.A., F.R.I.B.A.; Mr. J. Byam Shaw, Mr. G. A. Storey, A.R.A.; Professor A. Thomson, M.A., M.B.

For the Examination in Painting: Mr. George Henry, A.R.A., R.S.A. (chairman); Mr. J. W. Allison, A.R.C.A., R.B.A., Principal of the Portsmouth School of Art; Mr. J. Seymour Lucas, R.A.; Prof. G. E. Moira, Professor of Painting at the Royal College of Art; Mr. F. Suddards, H.M.I.

For the Examination in Modelling: Mr. W. R. Colton, A.R.A., R.B.S. (chairman); Mr. C. J. Allen, R.B.S., Vice-Principal of the Liverpool City School of Art; Mr. Basil Gotto, R.B.S.; Professor E. Lantéri, R.B.S., Professor of Modelling at the Royal College of Art; Mr. J. Lattimer, H.M.I.; Mr. F. W. Pomeroy, A.R.A., R.B.S.; Mr. F. Derwent Wood, A.R.A., R.B.S.

For the Examinations in Pictorial Design and Industrial Design: Professor Selwyn Image, M.A. (chairman); Mr. H. Allport, H.M.I.; Mr. Anning Bell, R.W.S.; Mr. T. Erat Harrison; Mr. T. Stirling Lee, R.B.S.; Prof. W. R. Lethaby, F.S.A., F.R.I.B.A., Professor of Design at the Royal College of Art. Mr. S. J. Cartlidge, Chief Inspector of Schools of Art, and Mr. A. Spencer, Principal of the Royal College of Art, were also members of each of the committees.

EXAMINATION IN DRAWING.

The examination of candidates in grouped cognate tests, it was hoped, would tend to raise the standard of work above that reached in former years. It is true that there are fewer competitors; but the general level of attainment, in the life drawings particularly, is somewhat lower than in recent years.

Comparatively few of the life drawings could be considered sound. Those which the examiners regarded as moderately good ones, in common with a large majority of drawings that have not satisfied the examiners (being weaker in other respects, such as construction and evidences of a knowledge of form), left much to be desired as far as the attachment and drawing of the extremities is concerned. The antique drawings are perhaps a trifle better than the life drawings.

In some instances fair antique drawings are found in groups where the life drawings are quite immature. This would point to the fact that the students have had little or no practice in drawing from the living model, or insufficient opportunity of such practice, or that the master is not competent to teach that branch of his work, in the opinion of the examiners much the more important. Only a few of the memory drawings of the antique and of natural objects can be considered good.

On the whole the work of the candidates exhibits such an acquaintance with the details of anatomical structure as is likely to prove of service to them in their subsequent studies. At this stage of their career it is hardly to be expected that students will appreciate the refinements in the modelling of the figure dependent on the contrasting effects of action and repose. It is, however, highly creditable that most of the candidates attempted the question which involved the representation of a figure in violent action anatomised so as to display its structure. In answering this question, while the majority revealed a knowledge only of the general arrangement of the muscular masses, a considerable number succeeded in imparting to their drawings a feeling of life and "go" associated with the adaptation of the muscular details to the action represented. It was somewhat surprising to find that the question dealing with the sexual differences exhibited in the proportions and modelling of the "Torso" was not more frequently attempted. When an answer was offered, the drawings and explanations given were not very satisfactory. The students might with advantage have their attention more particularly directed to the structural details on which these differences depend.

As a whole the candidates' exercises are good. One or two are excellent; and, although there are several that are indifferent and a certain number that are bad, it may be concluded from the fact that the good and fair exercises are in excess of the poor and bad ones that the teaching generally is good. The drawings, with a few exceptions, are correct and carefully done, and show a knowledge of the working out of ordinary problems in perspective. The drawings in Exercise 1, Section A, are good in most cases. The drawings in Exercise 2, where a circle is inscribed in a square placed at an angle (through 16 points) fail in the drawing of the circle itself. Though the points are correctly found, the curve is not continuous and even. Several of the drawings in Exercise 3, the "Chess-board" problem, are quite good, and show interest. In Exercise 4 showing the cast shadows and reflections of a wedge shaped block and post, the drawings are generally satisfactory, although drawings in monochrome would have been preferred to drawings in varied colours. Exercise 5, Section B: Many of the drawings are careful and good; where failures occur it is through indifferent drawing of the archways and exaggerated angles. It requires a certain amount of practice to draw circles and other curves in perspective; it is not sufficient to find the guiding points only.

The test in Architectural Drawing is directed, in the first place, to architectural draughtsmanship—namely, the power of clean, decisive delineation in respect of building and its ornament, such as was practised, to take an obvious example, by J. M. W. Turner; secondly, to knowledge of dimensional architecture and of the relative connections that exist between plans, section, and elevation; the knowledge, for example, that conditions the art of the Dutch Masters, and that every decorative artist must have at his fingers' ends. As to the former, architectural draughtsmanship, a fair competency has been shown in the exercises sent in. The use of the pencil-point for the conventional rendering of the boundaries of architectural masses and the delineation of ornament has been usually understood; and, in the second half of the paper, the conventional relations that flat-plane drawing establishes between plans, sections, and elevations have been recognised. There are instances of slovenly line, and the faculty of a sharp, clean, decisive stroke has not been developed; but, in view of this being the first examination on the new system, preparation for it seems to have been made in the right direction. As to the knowledge of the Orders, less progress has been made. Generally, the proportions of the column have been grasped, and less certainly those of the entablature, but the facts of columnar and ornamental relief have most often not been recognised, and in the second part of the paper it is clear that in most cases the candidate has had no definite conception of solidity in his drawing of the architectural items; they have been to him simply patterns. In the preparation for the drawing of architecture it would be well for students to be set down before actual subjects—buildings that they can survey and measure and make drawings from. No candidate attempted to show technical construction. Knowledge of architectural construction is not asked for in this paper, and no credit is given on account of it.

EXAMINATION IN PAINTING.

The examiners are of opinion that, taken as a whole, the exercises worked in the tests are not altogether satisfactory, and they hope that next year much better work will be apparent in the tests in Drawing from Life, Painting from Life, and Figure Composition.

While in some cases drawings from the life are good, they are often feeble, not only in recording a correct statement of the outline, but in construction, character, knowledge of light and shade, and pose.

In the paintings executed in this test, with one exception, the same faults are apparent, with added defects in colour (in some cases quite bad). When to poor drawing is added bad colour, a work has nothing to redeem it. There was an imperfect perception of the delicate qualities of colour which prevail in the half-tones and shadow on flesh. This defect was frequently most conspicuous in the paintings in which the surface modelling had been carefully studied.

The exercises worked in Still Life Painting are much more satisfactory, and show in many examples good and just appreciation of drawing, colour, and tone. The outlook and executive skill shown by the work in this class are altogether on a higher plane than those exemplified in the tests in Drawing and Painting from Life.

There is room for great improvement in the work done for the test in Figure Composition. There was little seen that was really interesting in composition, refined in colour, and decorative in feeling; but much that was positively bad, vulgar, and trivial, not only in design, but in colour and outlook. Most of the compositions suffered from overcrowding and from monotony of tone. A failing most noticeable in all the works sent up is that the colour schemes are not treated with a sufficiently decorative outlook, so as to be in sympathy with their surroundings, and still form the dominating note. It is always better in compositions of a decorative nature, placed to be seen above the eye-level, that the figures, while filling the panel, should be as few as is compatible with the size of space that is to be filled. This, together with an appreciation of constructional qualities of light and shade, is a most important element in this form of art. The accidents of light and shade, as naturally seen, should not be emphasised; but the mother colour of each individual mass, whether it be flesh, drapery, or sky, should retain the local colour throughout, as is well exemplified in the works of Uccello and Hans Holbein. The examiners, while taking into consideration the severe and difficult nature of this test, which is largely experimental, were naturally prepared for some disappointment; but they look forward to better results after consideration by the students of the recommendations made in this report.

In History and Methods of Painting, while a good standard is the average, there are some outstanding papers showing careful study of the subject, excellently written, having clear exposition, consecutive ideas of thought, and felicity of expression. The pity is that some of these very excellently written papers are by students whose executive abilities in the other tests are of the poorest. Their abilities are evidently more of a literary than of a graphic character.

EXAMINATION IN MODELLING.

The examiners feel that in the first year of a new scheme it would be hardly fair to accept the works submitted as a criterion of what is to be expected in the future. Of the few candidates presenting themselves the examiners consider that only one reaches the standard that can be recommended for a pass. This candidate gained distinction. The examiners wish to emphasise the importance of the tests in Figure Composition and in Modelling the Figure from Life, and to point out that a high standard of attainment has been insisted on in both subjects. On the whole, the candidates' papers on the History and Methods of Sculpture were of a high standard. In one case, however, a candidate had obviously failed to realise that a certain standard of general education is essential in the career he had in view.

EXAMINATIONS IN PICTORIAL DESIGN AND INDUSTRIAL DESIGN.

The number of candidates this year, alike for the Examination in Pictorial Design and for that in Industrial Design, is but small. This, however, owing to the change in the conditions of examinations, is, perhaps, not surprising. The examiners have been struck by the fact that at both examinations the written answers to examination questions have been very much better, as a whole, than the executive work submitted to them. The examiners wish to call special attention to this fact, which they deplore; and to state that, while giving to written answers every credit, they have not allowed the goodness, or even the excellence, of these to qualify a candidate to pass the examination when his executed work has been generally bad.

The work submitted in the Examination in Pictorial Design is in many ways satisfactory. The knowledge of the figure shown is creditable, and some of the landscape sketches are excellent. The more ambitious designs for posters, however, are disappointing, both in idea and execution, and the lettering almost throughout is poor, or often, indeed, bad. In black-and-white designs, intended for reduction, in many cases sufficient thought has not been given to the value of what the lines would be when so reduced. The answers to the paper on "History and Methods of Engraving" are, speaking generally, excellent; there is a good deal of accurate knowledge shown in them, and it is intelligently expressed.

To pass to the Examination in Industrial Design, and, first, to those crafts which involve modelling. Here the work, as a whole, was disappointing both as to quantity and quality. Almost throughout there appeared no sufficient consideration of the material in which an object was finally to be executed. The modelling of the tiles, for instance, was in too high a relief; and the designs for vases and wood-carving were clumsy to a degree. It is difficult to understand why in this section, considering the number of good students in it to be found in the schools, there should be so few candidates, and the standard of work should be so poor. Those who did submit work would appear to have been in too elementary a stage to sit for the examination at all. Exception, however, must be made in favour of one design for an enamelled alms-dish, which, alike in its invention and in the knowledge shown in its working details, is excellent. The few drawings sent in for Stained Glass are extremely poor. Except possibly in one case, they give little evidence of any apprehension of the principles and resources of this art. The Illuminations are but few in number, but admirable in design and execution. In delicacy of fancy, drawing, and colour the best of them are quite charming. The Embroidery exercises divide themselves into two classes—that in which the figure is introduced and that in which it is not. In both classes the technique of the art is well understood and expressed, and the designs often dainty and pleasing, though the treatment of the figure, undoubtedly a matter of great difficulty, leaves much to be desired. Several

of the monograms also are poor and out of harmony with their surroundings. Still, the Embroidery designs, on the whole, are fairly satisfactory. As regards Iron Work, only two exercises were sent in. They are fair; but in each of them the design is appropriate rather for a large gate than the small one asked for; and, contrary to the specification, they both give the appearance of being meant to open in the middle. The four designs for Jewelry are disappointing. Two of them are wholly commonplace. One of the others shows some fancy, and one not a little originality; but the latter needs a good deal more consideration of detail to justify itself. Of Cabinet Work there are three designs. They are competent, and the working drawings are very creditably done. Of Wallpaper designs there are two; of Silk Weaving, two; of Damask, one. The Damask, except for its centre, is good; the Silk Weaving moderate; but in both cases the candidate has exceeded the number of colours allowed. In the Wallpapers, one is pleasing, but wholly imitative; the other is poor and ugly. The subject for the original design in Painting and Decorating was a frieze with shields. Here, again, but few exercises were sent in, and those ranged from poor to bad. The heraldry, an important feature, is in no case well understood. In Bookbinding there was only a single design. It is neither original nor very well done; but it has this merit, that it is good in scale, and based on a good, simple, old model, and so is free from the triviality which often disfigures current exercises in this art. Passing from the worked to the written exercises, the examiners, in respect of these latter, would make the following notes:—

(a) In giving the definition of "a sprig ornament" few candidates fix upon its smallness as an essential characteristic.

(b) Many seem to think that, because a border is mostly "a follow-on," therefore this term applies to borders only. The intention of the question is to test a student's knowledge of "a follow-on" as applied to repeating patterns in general.

(c) Few notice that the essence of a diaper is that, relatively to the surface ornamented, it should be small in scale; which, indeed, is its main point of distinction from other repeating patterns.

(d) Some candidates give diagrams only, which, though in themselves correct, are accompanied by no written explanation. Others give good diagrams accompanied by poor, confused, or even contradictory explanations.

In respect of the paper on "The History and Styles of Ornament" the examiners note:

(a) That little knowledge is shown of the meaning or purpose of the abacus;

(b) That only in rare cases is the bell shown as a feature of Corinthian capitals;

(c) That, as a rule, the general characteristic silhouette of the capitals as a whole is not so well understood and appreciated as are mere details of foliage, etc.;

(d) That many candidates take examples of several animals or flowers, instead of, as asked for, tracing one such through its architectural and other developments;

(e) That hardly any candidate gives a complete set of the constructional forms of the scroll.

In several sections no candidates offered themselves at all—e.g., in Lace Making, Tapestry, Inlay, and Mosaic.

The above report is in many ways, no doubt, not on the surface of it encouraging. The examiners, however, have good hope that too much need not be made of this. For it can hardly be questioned that a large number of students have, through a not unnatural timidity, refrained from offering themselves for examination this first year of the new order of things, but are likely to offer themselves next year, when they are better prepared to meet its more stringent requirements.

The Camelford Rural District Council have appointed Mr S. Ford, of St Columb surveyor to the council at a salary of £125 per annum.

THE INSTITUTE OF METALS.

The first foreign meeting of the Institute of Metals, held at Ghent on Thursday and Friday last week, under the presidency of Professor A. K. Huntingdon, was of an international character, visitors attending from the United States, France, Belgium, Holland, and Russia, but the British element strongly predominated.

Most of the opening meeting was devoted to discussing the second report of the Corrosion Committee. The council, in a preliminary statement, declared that the report "showed that the experimental work which the Institute had been conducting at Liverpool for the past two years had yielded very practical results, indicating clearly not only the causes of the corrosion of condenser tubes, but how such corrosion might be eliminated, representing a resultant saving to shipowners, engineers, and others of tens of thousands of pounds per annum."

Sir Gerard Muntz (chairman of the Corrosion Committee) opened the discussion. The result of the report, said Sir Gerard, was that they must revise the whole of their preconceived theories on the subject of corrosion of brass condenser tubes by seawater. The cause which in the past had been most usually ascribed as the reason for the pitting of the tubes—namely, the presence of deposits containing iron and other foreign ingredients, had now been shown to be of little consequence, and, in fact, almost negligible. Galvanic action was generally considered the cause of pitting, and the question of dezincification was little understood and had been very little studied by those interested in the life-wear of such tubes. Accurate information as to the conditions of surfaces of tubes and the relating localities of the points where corrosion took place had been hard to obtain. Referring to a series of causes suggested to the committee by firms, Sir Gerard said these were very amusing. In one case it was said that tubes were "not now made of the same clean alloy as formerly." That was diametrically opposed to the facts, the copper and zinc now used for making tubes being far purer and cleaner, for the simple reason that fifteen years ago it was difficult to obtain either copper or zinc which did not contain a very considerable admixture of materials. Failure of condenser tubes by total dissolution or thinning was rare. The cause of failure in 90 per cent. of the cases was pitting, which meant preferential dissolution.

The discussion was continued by Mr. Leonard Sumner, Dr. Roenhain, and the President, the latter describing a series of experiments by himself which confirmed the statement that lead healing of sea-water had a considerable effect in accelerating corrosion.

The remainder of the session was devoted to the discussion of the paper by Dr. W. Dosenhain and Mr. D. Ewen, M.Sc., on "The Inter-crystalline Cohesion of Metals," and to the paper by Dr. I. Kirke Rose on "The Annealing of Gold."

The final meeting on Friday took place in the Palais des Fêtes of the Exhibition, and the attendance included several ladies. Sir Cecil Hertslet, the British Consul-General stationed at Antwerp, delivered an interesting speech showing the excellent practical benefits to Britishers of the International Conferences already held.

Mr. J. H. Chamberlain read a paper on "A Study of Volume Changes in Alloys." The results of the research, he said, showed that volume changes obtained in alloys were of both theoretical and practical importance. Their relation to the crystallisation intervals as plotted from the equilibrium diagram was clearly depicted in the copper aluminium series. The force producing the expansions, obtained in castings during solidification, was in the case of a copper-tin alloy (90 per cent. copper), a copper zinc alloy (15 per cent. zinc), and pure aluminium, shown to be of considerable magnitude. On slow heating up bars of a copper-tin alloy (90 per cent. copper), a copper-zinc alloy (15 per cent. copper), and pure aluminium in the electric furnace, contractions in the length of the bar were obtained in each case. On allowing the bar of the copper-zinc alloy to cool slowly, a most extraordinary expansion was obtained, far larger than that yielded on casting, and on repeating the heating up and cooling down operations five times the bar was found to have grown in length from 10in. to 11½in., and also to have increased in sectional area.

"The Specific Volume and Constitution of Alloys" was the title of a paper by Dr. W. M. Guertler. It followed up a previous communication of his to the Institute of Metals, in which he discussed the connection between the electric conductivity of alloys and their constitution. Diagrams were given to demonstrate the dependence of the volume of alloys on concentration and temperature, and explanations were given of the influence of mechanical treatment on the volume. The latter effect was generally twofold where a normal alloy was hammered or rolled—(1) small hollows, pores, etc., closing up, and the process ceasing when all these hollows had closed up; (2) where the individual crystal grains of the aggregate were broken up the grain became finer, and the breaking up did not cease as long as mechanical work continued. The co-operation of those two factors caused the specific volume first to decrease, then to attain a minimum, and again to increase as soon as the first factor was removed by the closing up of all the cavities.

A word unusual in scientific nomenclature was used by Professor Samuel L. Hoyt in the title of his paper "On the Copper-rich Kalchoids." The last-quoted word is employed to designate the ternary alloys of copper, tin, and zinc, as was first suggested by Thurston. In the paper under discussion Professor Hoyt gave the results of a prolonged research into the constitution of certain kalchoids rich in copper, the percentage of zinc and of tin never exceeding 50 and 30 respectively. From his microscopical analyses, Prof. Hoyt drew the general conclusion that the ternary alloys of copper-tin-zinc, up to the above-mentioned percentages, behaved similarly to the binary alloys of copper-tin and copper-zinc.

"A Method of Improving the Quality of Arsenical Copper" was the subject of a paper by Mr. F. Johnson, hon. sec. of the Suffolk-street School, Birmingham. In it the author recorded the results of an investigation of the properties of specially alloyed arsenical copper, with a view to proving its suitability for use as locomotive stay-rods, wire for rivet manufacture, and any material required to have specially high malleability, ductility, and toughness, combined with tensile strength and resistance to reducing gases at high temperatures. An improvement in quality in these respects had been obtained by adding silicon and iron to the copper in various small proportions. It was shown that silicon was a more efficient deoxidiser than iron, but that iron had a greater strengthening effect than silicon. The experiments had been backed up by works' tests on a larger scale, and tensile tests at the temperature of high-pressure steam showed that the specially-alloyed bars were in no way inferior to "tough-pitch" copper of similar arsenical contents. The improvements had not been gained at the expense of any of the properties considered to be essential in commercial "tough" copper for locomotive stay-rods. Certain physical characteristics of the experimental bars were revealed and differences in behaviour explained by the aid of the microscope.

Striking differences of opinion were elicited during the discussion of Mr. Johnson's paper. Sir Gerard Muntz condemned arsenical copper altogether in the strongest terms, declaring that arsenic in copper was valueless; in fact, deleterious, except as a deoxidiser for the use of those who did not understand how to employ better and more intelligent methods. He said without hesitation a better, stronger, and more ductile copper could be prepared without arsenic than with it. He considered Mr. Johnson's paper was very much behind the time, because for thirty-five years his (Sir Gerard's) firm had carried out every desideratum named by Mr. Johnson without the use of arsenic.

This view was entirely controverted by Mr. Tomlinson, who said that engineers who had used arsenical copper were ready to speak of it as a good friend. Mr. Johnson, in his reply, maintained that his paper was not behind the time, because the facts given by Sir Gerard had not previously been made public.

Mr. H. Garland contributed a paper on "Metallographical Researches on Egyptian Metal Antiquities," in which he described his investigations into the crystal structure of Egyptian metal objects, all more than 2,000 years old, made either of bronze or copper. He gave the interesting case of a bronze knife 3,500 years old, in which the original cored structure has endured until the present day, and is still perfectly stable at atmospheric temperatures. The view was held that the knife was hammered cold, and so the best cutting edge was obtained. The crystal grains were very small, there having been apparently no crystal growth during the ages that had passed since the metal was first worked. This showed either that recrystallisation did not take place at ordinary temperatures, or, if it did, then many times 3,500 years was required to effect the change. Mr. Garland, in his paper, gave other cases of the persistence of the "cast cored" structure in antique alloys, illustrating his views by photomicrographs of a small bronze chisel, such as would be used by a jeweller in ancient Egypt, a copper arrow-tip, and a bronze spatula.

UNSATISFACTORY HOUSING, AND ITS PREVENTION.*

(*Concluded from page* 290.)

NEW HOUSES.

The subjects of town-planning and garden cities are often confused by the lay world, owing to the latter being advertised as the ideal of town-planning; but it must be seen that although similar in some respects there are vital differences; the garden city is planned on open space unhampered by previous arrangements of streets and buildings; in theory representing the ideal town. Town-planning as provided for in the Housing and Town-Planning Act deals with existing towns, the future road and other extensions to which are to be planned as far as practicable in conformity with those existing, a far more difficult task. Previous to the passing of the Act, it was realised by many that the model by-laws in respect to new streets and buildings were too inelastic, and whilst aimed to prevent jerry-building, also hampered fair trade and investment. The adoption in a district of "intermediate" building by-laws, whilst relieving fair investment, does not effectually protect against jerry work. The garden city enthusiast often illustrates, both in theory and practice, what can be erected when building by-laws non sunt, and the subsequent erections are good arguments in favour of the necessity of the supervision of the erection of new buildings by public authorities. As in other questions of sanitary reform, progress is hindered by the extremist, who permits sentiment to run ahead of common sense, resulting in relaxation of supervision, walls of insufficient thickness to remain stable, horizontal weather-boarding replacing tiles, and other unsuitable material being inserted to make work for the repairer in the near future. The amateur lecturing on town-planning fails to distinguish between utility and economy in his twin cries—all roads through thoroughfares; cheap roads. It is obvious the successful attainment of both at the same time is impossible; in town-planning main arterial roads are desirable, even imperative, but for residential areas, especially when strict economy must be practised, the by-ways need not necessarily be throughways—in fact, if cheaper roads are to be provided, they must be designed so as not to be adaptable for quick or heavy through traffic. Another query of the layman is the possibility of constructing roads in large boroughs for working-class dwelling areas at a similar cost to those in the smaller urban areas. A year ago the author took statistics of traffic of two reasonably good class roads, one in a small and isolated urban district, the other in a county borough; both were cul-de-sacs, the lengths were practically similar, and there were the same number of houses fronting them, and of similar size. The average number of carts calling in the small district was 12 per day, hand trucks 6; in the larger district the carts averaged 20, and hand trucks 18. This proves, apart from any engineering argument, that, although other conditions may be similar, there is greater choice of purveyors in the larger town, and consequently a larger ratio of traffic on purely local roads. The cost of the street in the small district when repaired (or practically reconstructed) under the provisions of the Private Street Works Act—including a 6in. soil sewer, surface drainage, 12in. by 4in. kerb and channel, 4in. hardcore and finished thickness of 4in. to surface metalling to 18ft. carriageway, 3in. filling and 2in. surfacing to 5ft. footways—was 28s. per lineal yard, and no further repairs were required for five years. Although similar in most respects, the fact that a street is in or near to a large town renders imperative, for the reasons given, an increased ratio of strength in proportion to the size of the town. The erection of insanitary and imperfectly constructed dwellings in former years made the introduction of building by-laws imperative. The present cry that abnormal cost of building has been caused by the enforcement of by-laws should be subject to modification. The demands for sanitation led to the compulsion of better-class dwellings, but wages did not increase in ratio with rents, and the point at issue is, should building by-laws be abolished and the construction of dwellings revert to the indifferent methods of the past, or can building supervision be modified to permit sanitary dwellings to be erected at a lower cost than at present? Stability is necessary, so that no general modification as to foundations can be suggested, although a hard-and-fast descriptive by-law for the whole country is not workable; each case is a matter for the discretion of the local surveyor, and usually cannot be decided until the ground is laid open. The provision of a suitable damp-proof course is imperative, and effectual damp resistance is not provided for by substituting inferior tarred felts for the bituminous sheetings that give excellent results. The rule as to thickness of walls might in some cases be relaxed, but a minimum of 9in. for party-walls is necessary to afford privacy, if for no other reason, although the prevention of spread of fire seems of sufficient importance. Substituting 4½in. work, faced with tiles, for plain 9in. work is in no way objectionable for topmost story external walls not carrying great weight, and with roof properly trussed, but there is little, if any, saving of cost. All by-laws as to hearths require rigid enforcement, and the only fire-prevention clauses that under some circumstances might be omitted are those relating to carrying up party-walls through the roofs; this entails parapets and lead flashings, all of which add considerably to the cost. Risk of fire spreading along the slate battens, if these are properly imbedded in mortar, is very small. Some districts permit the abolition of parapets, subject to the battens being severed at the party-walls, and the slates bedded on the brickwork, but this leads to tilting slates after settlement, and, possibly, indriving wet. The author's practice is to permit the battens to be carried through, and afterwards to be flushed up with mortar. The minimum height of 9ft. for habitable rooms, although desirable in some respects, is questionable in ultimate advantage, as it defeats another object. Possibly in the larger towns this minimum height is imperative, but in smaller urban and rural areas 7ft. 6in. would be better, subject to windows and ventilation being as near the ceiling as possible; and this reduced minimum should save 10 per cent. on cost of cottages, and would insure either a low rent or a larger floor-space for a similar rent. Whilst sufficient cubic capacity is always desirable, there is no advantage in obtaining height at the expense of floor area; suitable ventilation is the more important factor. The model by-laws have in many cases been the cause of the prevention of building of rooms in roofs; there may be objections to this position, but the important matter in working-class housing is to obtain a sufficient accommodation at the lowest rent, and rooms in roofs are far preferable to an insufficiency of rooms. The model by-laws requiring the area of ceilings in roofs to equal two-thirds the floor area over a height of 9ft. would, with a reduced height of 7ft. 6in., be all-sufficient, and would permit the construction of one or more bedroom at least in the cottage. In larger houses this by-law is constantly evaded by describing rooms in roofs as boxrooms, although destined for use as bedrooms. Centralisation of manufactures is the sole cause of excessive cost of building in rural areas compared with large towns at the present day as against a half-century back, when every village had its local sawyers, small brick-burning undertaking, stone cleavers or dressers according to the materials at hand, which under those conditions were obtained and prepared at home. Modern progress has led to the establishment of large industries that have practically extinguished the smaller. If home-grown, timber is felled in the country, hauled to the towns, sawn up, and carted back. The adoption of modern and continuous brick kilns lead to centralisation and consequent cost of haulage to isolated spots where suitable earths are found, but no plant existing for conversion to bricks; the large quarries have displaced the local cleaver. In the Southern counties strongly-built chalk dwellings of past years still exist, but their building seems to be a lost art, and the only solution advocated for cheap rural cottages is wood framing covered externally with galvanised iron, which leaves much to be desired (although possibly ideal week-end or summer dwellings) from a whole-year tenant's point of view; whilst from an ownership point of view it is not economical practice.

* A paper read by G. Bertram Hartfield, Surveyor to the Alton Urban District Council, at the Conference held by the Institution of Municipal and County Engineers at Great Yarmouth July 16 and 17, 1913.

EDINBURGH CORPORATION'S NEW POWERS.

The new Act obtained by the city of Edinburgh came into force on August 15. The Act deals with a number of subjects, including new works and lands, sewers and drains, streets, Dean of Guild Court and building regulations, and precautions during building operations. The Act confirms the agreement which was entered into by the city and the North British Railway Company with reference to the removal of the Canal basin at Fountainbridge, and also makes provision for carrying out a number of street widenings in that district, and for constructing a new street from Gardner's Crescent to Fountainbridge by way of the site on which the old St. David's Parish Church stands. Among other street alterations included in this section of the Act is the diversion of West Savile-terrace towards the western end, with the object of ultimately providing a through road between Newington and Morningside.

In the section relating to the Dean of Guild Court, there is an important provision which has the effect of regulating the number of houses in a tenement. Under previous local Acts the number of houses which it was permissible to provide in a tenement entering from a common stair or passage within the tenement was twelve; but by the new statute this is reduced to nine. Similarly in the case of houses which builders were allowed to erect in a tenement entering from a common stair or balcony outside the tenements the number has been reduced from twenty-four to twelve. It is also provided by the Act that no increase will be permitted in the number of houses in an existing tenement beyond the respective numbers specified. It has been the practice in several cases hitherto to sub-divide large houses, thus increasing the number of houses in a tenement. In connection with these alterations, which might result in more houses than the numbers specified in the old Act becoming part of a tenement, the corporation had no control, but these will now

be dealt with under the provisions relating to the erection of new tenements.

The most important provision relative to drains and sewers is that which prohibits the discharging into sewers of waste or live steam, hot water, condensing water, or other liquid of a temperature exceeding 110deg. Fahr., and grease, petrol, or other deleterious offensive combustible or explosive substance, except with the consent of the burgh engineer, and subject to such conditions as he may prescribe.

The question of the building line of streets has also been dealt with under the new statute. Under the Corporation Act of 1906 there was a provision to the effect that where there was a continuous distance of 300 yards of ground fronting a street, the corporation had power to pass a resolution prohibiting the erection of buildings nearer than 30ft. from the centre of the street. In the new Act that provision has been amended to the effect that the 300 yards has been reduced to 100 yards, while the provision takes immediate effect without any resolution. Following the precedent of English Acts, there is also a provision making it illegal, without the consent of the corporation, to erect or bring forward any house or building in any street beyond the front main wall of the house or building on either side of the same street. Hitherto the Court of Guild could only ask the applicants to fall in with their wishes, but now, as a result of the new statute, they have compulsory powers.

SOME INTERESTING DRAWINGS OF EDINBURGH CASTLE.

Sir Rowand Anderson recently presented to H.M. Board of Works an interesting series of large photographs of pen-and-ink drawings of Edinburgh Castle, the originals of which are in the King's Library at the British Museum. Mr. William T. Oldrieve, architect to the Board of Works, has now had these hung in the outer room of the Royal apartments at the Castle.

The first drawing is a plan of the Castle, signed by J. Slezer, the author of "Theatrum Scotiæ." From some notes which Sir Rowand Anderson was good enough to give to a *Scotsman* reporter, it appears that in March, 1675, it is recorded that the Lords of the Treasury recommend that the Lord Treasurer Depute should visit the Castle and examine the ground where the additions to the fortification are to be made, and he was to take Mr. Slezer with him. Mr. Slezer would make a report on his visit, and it is believed that this drawing accompanied it, as there are marginal notes which not only specify the names of existing buildings, but also a number of suggestions for improvements. This is said to be the oldest accurate plan of the Castle which is known.

A second drawing, more pictorially treated, measures 2ft. 10in. by 1ft. 10in. It is a bird's-eye view from the south of the Castle and its surroundings. There is no date or mark on it to indicate who made it, or when it was made, but it is possible to approximate the date. In 1689, when the Castle was held for James VII., by the Duke of Gordon, the Earl of Leven was ordered by the Convention then sitting in Edinburgh, to blockade the rock on the west. To assist in accomplishing this he dug a trench from the West Port to St. Cuthbert's Church, and this trench, clearly indicated, goes to prove that the drawing could not have been made before 1689. The drawing also shows a tall flag-pole over the Castle with the Scottish flag—the St. Andrew's saltire or cross—flying from it—an indication that the drawing was made before the Union of 1707, when the Scottish flag was replaced by the Union Jack. The drawing had evidently been made to illustrate a big scheme of fortifications, to cover what is now the Esplanade, but this project, like many others of the same kind, was never carried out. There are also one or two other points in the drawing of interest. The view shows that the west side of the quadrangle had not been built, as the plain building now on this site is shown on a plan, dated 1709, and is called "New Barracks for Officers." The large church of St. Mary's, which formed the north side of the quadrangle, is clearly shown in the drawing. When it was disused as a church it was made into a storehouse, and on this drawing it is seen that the large pointed windows of the church had been built up. The church was used as a store at least up to 1755, as there is a plan of that date now in the possession of the Board of Works with a design for a building to take its place. The drawing also shows the Nor' Loch, the site of Princes-street, and a view of the Firth of Forth.

A third drawing, date 1746, is signed W. Adam. This, it is thought, is William Adam, of Maryburgh, Fife, the father of the two brothers Adam, the distinguished 18th-century architects. William Adam was also an architect of considerable repute, who held the appointment, for a time, as King's Master Mason. This plan is a careful survey of the Castle as it was in 1746, and following the scare the Hanoverian Government received by the Jacobite rising of 1745, it shows in dotted lines another scheme for fortifying the Esplanade, which was not given effect to.

Another plan (photographed from one in the collection of the Board of Works), is dated 1725. Its chief interest lies in the fact that it shows the original arrangement on the walls, etc., at the postern gate on the west side, with a pathway, clearly indicated, leading up to it from the foot of the rock. The first notice of this postern gate goes back as far as 1093. By it the children of Queen Margaret, it is conjectured, escaped when the Castle was besieged by "Donald the Fair-haired," the younger brother of Malcolm III., who had proclaimed himself King; and possibly the body of Queen Margaret was removed by the same way from the Castle to Dunfermline. It was at this postern gate that the interview took place, March 18, 1689, between Viscount Dundee and the Duke of Gordon.

Another plan dated ten years later shows distinctly the arrangement at the sally-port. The original wall projected considerably, and was rounded like a tower forming a deep re-entering angle, and it was in the recess thus formed that the postern gate of the Castle was actually placed. It was thus sufficiently screened from outside observation, and well protected against any attempt to surprise and force an entrance. Alterations were carried out on this part of the wall by instructions of General Wade, who was in Scotland from 1726 to 1748.

Other drawings included in Sir Rowand Anderson's gift are prints of "A Prospect of Edinburgh Castle" from the south-east, and another of the Castle from the east (both in the same frame), sketched by "Hon. John Elphinstone, Esq., engineer," and engraved by Parr; as also a fine copy of the plan of Old Edinburgh by Gordon of Rothiemurchus, engraved by De Witt, 1647, in which the houses in the High-street and Canongate, then existing, are depicted with great minuteness and fidelity.

THE HOUSING PROBLEM IN GLASGOW.

The conditions of housing in Glasgow are dealt with by Mr. Peter Fyfe, the chief sanitary inspector of the city, in his annual report just issued. The report shows that the population of Glasgow, as recently extended, is 1,015,165, and that the area occupied is 19,183 acres. The density of population is thus 53 persons to the acre, compared with 45 in Liverpool, 33 in Manchester, 19 in Birmingham and Sheffield, 21 in Leeds, and 29 in Edinburgh. In this connection, Mr. Fyfe states that it will be seen that the real day of better things has not yet arrived for the city. "She has not yet enough of green field whereon to expand herself, and the dreadful congestion at her centre cannot yet be relieved by any reasoned process of town-planning, because she has no extensive unbuilt-upon area in any direction upon which her rulers, in combination with her great manufacturers, can project a general scheme of segregation and still retain her population within the city's fold. It is plain that Greater Glasgow is precluded by what Parliament has done from exercising on her own initiative and without combination with any other authority any such town-planning powers as are afforded in Part II. of the Housing and Town-Planning Act of 1909." The figures in the report relating to overcrowding show that there are 19,573 ticketed houses in the former city area, compared with 20,038 last year, and that 573 ticketed houses in Govan brings the total to 20,146. The number of night visits paid to these houses was 47,751, and 3,005 cases of overcrowding were discovered. There are 3,895 untenanted dwellings in this category, and of these 2,223 are single apartment houses. In view of these circumstances, the sanitary inspector says, "there looms in the early future a problem for grave consideration—what provision must be made and where for the people who will shortly be dispossessed? The solution of the problem seems rather to lie in the direction of a bold policy of wise purchase with a view to internal reconstruction on modern lines."

TOWN PLANNING IN THE HUNDRED OF WIRRAL.

The peninsula of Wirral, Cheshire, has the distinction of being the first rural district to be granted sanction by the Local Government Board to prepare a scheme under the Housing and Town-Planning Act. In the first instance permission was asked by the council to include the whole of the rural district in one scheme, but, acting on the advice of the Local Government Board, it was decided to divide it into different areas, each separate scheme embracing four or five townships. It is expected that eight distinct schemes will be necessary to embrace the whole area, of which five have already been drawn up. In January this year the Local Government Board signified its approval to the rural council formulating a scheme to include the townships of Great Sutton, Little Sutton, Childer Thornton, Hooton, and Eastham; and by gradual steps, after consultations and conferences, this area is being mapped out.

Lying on either side of the Birkenhead and Chester main road, with the rapidly-growing district of Ellesmere Port on the one hand and several well-populated villages on the other, a number of arterial roads are required in the Sutton area before proper development can take place, and in order that the scattered villages may become more closely associated with such centres as Ellesmere Port and the two Suttons. At present one or two of the stations on the Birkenhead and Chester joint railway are practically isolated, and it is intended to give more direct communication with the railway at the different points. By cutting a road between Whitby corner and Capenhurst Station a detour of over two miles through Backford Cross would be saved to those residing in Whitby and neighbourhood.

Similarly, it is suggested that the new wide road now under construction between Ellesmere Port and Eastham, where it joins the Birkenhead and Chester main road, should be connected up with Little Sutton Station by continuing Walker's-lane to a point on that road. Several other roads have also been suggested, and in this way an area of over 5,740 acres, which comprises the first scheme, will become more rapidly developed. So far as possible, pretty spots will be kept unbuilt upon. Schemes have also been prepared in Wirral to embrace Heswall, Barnston, Gayton, and Pensby; Bidston, Noctorum, Moreton, Upton, and Woodchurch; Prenton, Storeton, Landican, and Thingwall; and Frankley, Greasby, Saughall Massie, and Grange. It will thus be seen that the Wirral Rural Council has mapped out almost the whole of the 36,655 acres under its jurisdiction. To these will be shortly added other districts in Wirral, such as Neston, Hoylake and West Kirby, Lower Bebington, and Higher Bebington, which are outside the rural district council's area,

while the newly created borough of Wallasey has also prepared a scheme for the proper development of large tracts of land at present unbuilt upon within its own boundaries.

To complete the whole, Birkenhead and Bromborough have still to present schemes and no doubt in time the whole Peninsula of Wirral will be laid out with roads which will greatly facilitate communication.

SHOP WINDOW LIGHTING.*

In general, the best example of illumination to follow is stage work, where the light is diffused about the stage, and the sources are hidden from the view of the audience. The main principles are that the source of light should be hidden or fixed well above the line of vision, and the light directed on to the goods. Light sources should not be fixed in too close proximity to the objects displayed, or a patchy effect will be obtained, and light units of markedly different colours should not be used in conjunction. The application of these principles resolves the question itself into the correct choice of reflectors, in conjunction with the best positions of the lamps, and the correct types chosen by reference to their distribution curves. Brightly polished reflector surfaces are not always the best; sometimes a dull aluminium surface gives better distribution.

For a provision window dressed flat, or nearly so, the prismatic glass reflector offers the best solution, and should be of the intensive type; the spacing and heights of such windows rarely lend themselves to the use of the extensive type of reflector. The colour of light units is an important point. To aim at daylight effects is somewhat misleading and not always desirable. A light that is rich in red rays has much to recommend it, particularly in the illumination of foodstuffs. Contrast, for instance, a butcher's shop using incandescent gas and one with the old-fashioned fish-tail gas burner, and notice the more attractive appearance of the meat in the latter case.

Windows which depend essentially on good lighting are those displaying fancy and white goods, hats, dress materials, and tailors' and furniture shops. In determining the quantity of light required in individual cases, the reflective properties of different shades must be considered. A window that may alternate between white and dark goods must have a capacity for illumination suitable for the latter, with ample switching arrangements to prevent waste when showing light goods.

The nature and texture of fabrics affects their reflective values, which is largely a function of their transparency. Jewellery, pictures, and china ware all require their own treatment, influenced by the arrangement and proportions of the window. Such windows are usually shallow, dressed from top to bottom, very full, and close to the glass. Outside lighting with a "trough" type of reflector is very effective, and the light should be concentrated rather than diffused, since jewellery looks best when illuminated from a point. Millinery is best lighted from above with a well-distributed light. Tungsten lamps give the best colour effect in this case. Indirect, semi-direct, or prismatic-bowl lighting are all eminently suitable for this class of work.

Tailors and furriers demand high candle-power, since the dark materials have a high factor of absorption. Lamps should be kept well away from dark materials, and suitably spaced intensive reflectors used entirely. Outside lighting by white flame arcs with reflectors to throw the light into the window gives good effects, but glare results from too much concentrated light, and the patterns of fabrics become indistinct and blurred under such conditions. The furniture window lends itself more to calculation than the previous examples. As a rule there is ample floor-space, and the ideal space factor can be used, with prismatic reflectors. Again, absence of glare is most important. Furniture should show up in bold relief from its surroundings, yet light should not be unduly focussed to over-emphasise detail. Tungsten lamps give the most desirable effects, and indirect lighting with white ceilings is pleasing in result. By the ideal space factor is meant the relation between the height above the working plane and distance between centres of lighting units that gives even illumination with a given reflector. For instance, the space factor for holophane intensive reflectors with 50-60-watt tungsten lamp is 2-3, and 4 points in a window 10ft. by 15ft., suspended at a height of 7ft., give a luminar intensity on the floor of seven foot-candles, approximately, allowing for a light ceiling. Semi-indirect lighting offers special advantages for furniture display. When a window is dressed in representation of a room, daylight effect is desirable, and can be very closely approximated by having the top reflector of the semi-indirect lighting fitting of a delicate china-blue tint. Metal covers of this colour fitted over silvered reflectors also give a near approximation of daylight, and have been used with considerable success. The scheme is also useful in drapery departments, where colour matching is important.

Outside shop lighting fulfils a two-fold purpose. Its primary object is advertisement, and illumination of the windows is its secondary object. Metal lamps are largely displacing arc lamps for this purpose. Outside and inside lighting should be carefully balanced, particularly when dark materials are displayed, or the window has a dark background.

Jewellery windows with fitted show-cases divided into small compartments present considerable difficulties. The bulkiness of a lamp and reflector make it difficult to conceal them in a small case, so that one naturally turns again to outside lighting. Arc lamps with angle reflector fittings give good results, but the white flame should be used, as the yellow light is unsuitable for the display of precious stones. Pictures require essentially a "soft" diffused light. A refinement is to use special trough reflectors, which give excellent results when fitted to the top of the large pictures. In conclusion, it is well to remember that shop-window lighting is not to show off electrical fittings, but to give effective lighting.

* From an article by E. P. AUSTIN in "Electrical Engineering."

H.M. NEW STATIONERY OFFICES, STAMFORD STREET, S.E.

Members of the Society of Engineers (Incorporated) paid a visit, on the 2nd inst., to H.M. New Stationery Office and H.M.O.W. Stores, now in course of construction at Stamford-street, S.E., which we fully illustrated and described in our issue of Dec. 6, 1912.

The new structure will be in two blocks, the larger, in Stamford-street, being the warehouse, and the smaller one, facing Waterloo-road, being the office portion. A short street, Bazon-street (formerly Bond-street), separates the two portions, but they will be connected from the level of the first floor and upwards by arched beams of 28ft. span, carrying a building 40ft. wide, and forming additional space for the offices.

The following gives the general dimensions: Length of frontage to Stamford-street, 323ft.; to Cornwall-road, 189ft.; to Doon-street, 377ft.; to Waterloo-road, 106ft.; average height of main fronts above footpath, 77ft.

Including ground floor and basement there will be seven floors in the warehouse and eight floors in the office block, including subground and basement. The height, generally, from floor to floor will be 11ft. in the office block and 10ft. 6in. in the warehouse. The total floor area to be provided is 480,000 superficial feet, or a total of, roughly, 11 acres.

Internal areas, of which there will be two in the office block and three in the warehouse, will be provided to light the interior parts of the building. The windows of the warehouse will be provided with steel sashes. The working of the warehouse will be carried on mainly by means of two electric lifts for goods at the platforms of the loading yards in Doon-street. There are also two lifts for passengers, one for the offices and one for the warehouse.

For the office staff a dining room 30ft. by 23ft. will be provided on the top floor of the office building, together with kitchens, etc., specially fitted with steam and other cooking arrangements. In connection with this part a goods lift is provided for stores and for service at all floors from basement.

The drains inside the building will be of cast-iron pipes laid under basement floor, and a complete system of heating by hot water under forced circulation will be provided. In the reinforced concrete work the following independent floor loads are allowed for: In warehouse, ground floor, 3cwt. per square foot; in other floors, 2½cwt. per square foot; in offices, all floors, 100lb. per square foot; in roofs, 65lb. per square foot.

The floor slabs are 3½in. thick in warehouse, and 3in. thick in offices, and external walls generally are 4in. and 6in. thick. The boiler chimney will be also of reinforced concrete, 11ft. 3in. square inside 110ft. in height, with sides 7in. thick at bottom and 5in. thick at top. It will be lined throughout with firebrick set 3in. clear of sides and built in sections supported by corbelling.

All columns have octagonal bases designed to distribute a pressure not exceeding three tons per square foot on the foundation. The front of office block, facing Waterloo-road, will be of Portland stone carried by the reinforced-concrete columns and beams, mainly at level of sub-ground floor. The building has been designed by, and is being carried out under the supervision of, Mr. R. J. Allison, A.R.I.B.A. The general contractors for the whole of the work are Messrs. Perry and Co. (Bow), Ltd.

AMERICAN ROAD CONGRESS AT DETROIT.

The joint committee having the matter in charge decided to hold the American Road Congress at Detroit during the week of September 29. This will mean the greatest road assemblage ever held in the United States, as the Congress comprises the American Highway Association, with upwards of 2,000 regular members and more than 15,000 associate members; the American Automobile Association, with over 70,000 members; the Michigan State Good Roads Association, which is strongly organised in every part of the state, and in addition to this it is quite probable that the Ontario Good Roads Association will join with the others, thus making the Congress an international affair.

A commercial exhibit will be held under the auspices of the National Association of Road Machinery and Material Manufacturers, and arrangements have already been made for the exhibition of the collection of road models owned by the United States Government. The President of the United States and the Governor-General of Canada will be urged to attend, and many of the foremost engineers and highway officials of the country have accepted places on the programme. The President of the Congress is Mr. L. W. Page, director, United States Office of Public Roads.

MESSRS. ROBT. INGHAM CLARK AND CO.'S THREE DAYS' CONVENTION.

Messrs. Robt. Ingham Clark and Co., Ltd., the well-known firm of varnish and enamel manufacturers, held their annual convention of representatives on August 26, 27, and 28.

The convention assembled on the first day at the company's works at West Ham, where they were received by the chairman, who, after welcoming them in a short speech, in which he referred to the substantial and sustained progress of the business, distributed prizes to the winners of the various competitions inaugurated last year. The representatives were then conducted over the works and shown the various processes of manufacture of the famous "Britannia" brand varnishes, enamels, and specialities, including "Pearline," the ideal white enamel; "Abbey" white enamel, a pure zinc-

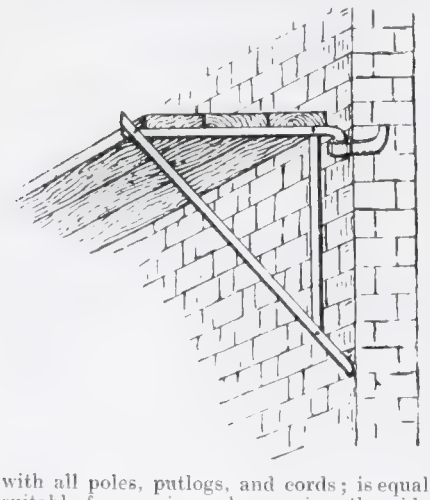
white enamel, which is offered to decorators at the very moderate price of 12s. per gallon; "Omnilac," the special grade of copal oak varnish, which, although only produced twelve months ago, has already won such a name for itself; "Lapeine," the patent liquid filler, which, when applied to raw wood, effectually prevents discolouration of subsequent coats of paint or enamel; and "Portaric," the new high-grade varnish which, after exhaustive trials, is expressly recommended for use on front doors and all exposed work where durability is an essential feature.

The second day of the convention was devoted to a discussion of various subjects relating to the sales organisation of the company. This took place at the offices in Caxton House, Westminster, and afforded the representatives an opportunity of inspecting the exhibition room, which Messrs. Robt. Ingham Clark and Co., Ltd., are just completing for the convenience of architects, decorators, and others who may wish to secure information upon and examine, without loss of time, the actual results obtainable with the company's productions. In the evening the representatives were entertained at dinner at the Westminster Palace Hotel, and afterwards at the Empire Theatre, where seats had been reserved for them.

On Thursday, the 28th, the convention again assembled at Caxton House, and participated in a discussion of the important question of advertising, which concluded the agenda of work. The party then proceeded by rail to Henley to join the saloon launch "His Majesty," which Messrs. Robt. Ingham Clark and Co., Ltd., had chartered for the day. A most enjoyable trip was made down the river, luncheon and tea being served on board, and the party being finally landed at Maidenhead, where a banquet at Skindle's Hotel brought the proceedings to a close.

HUMPHRIES' PATENT SCAFFOLDING.

We are quite sure there is a lasting future for this cheap, cleverly-designed, and easily-used scaffold appliance, which does away



with all poles, putlogs, and cords; is equally suitable for repair work; requires the aid of no special scaffolders; is quickly erected, and still more quickly taken down; costs next to nothing for cartage, takes little room for storage, and may be used over and over again. The invention is being made by the Humphries' Patent Bracket and Scaffold Syndicate, Ltd., Osiers Ironworks, Point Pleasant, Wandsworth, who will send fully illustrated particulars to any reader mentioning this journal.

As will be seen from the sketch, it is a steel-bracket scaffold, attachable to brick walls at any height and any position, by raking out any vertical joint between the bricks to a depth of 5in. and inserting a special hook, or grappler, to which a bracket is hung. It is a modern improvement on the old Scotch wall-cripple.

The Syndicate also supplies a steel pole and putlog scaffold for new work, which has been well received by several of the big London builders. The big garage in the Grosvenor-road, S.W., was entirely scaffolded by this method. The system is being adopted by the Great Western, L. and N. W., and S. E. and C. railways; by Messrs. Higgs and Hill, Perry and Co. (Bow), Ltd., Geo. Wallis and Son, Wm. Hussey, who is now repairing the Downs Sanatorium at Sutton with it, and Messrs. Hughes and Stirling, Bootle.

The cost of the scaffold appliances, including the two grapplers and two brackets, is quite nominal.

The cost of the steel pole and putlog scaffold system to scaffold a new wall, 100ft. long by 20ft. high, using 12ft. planks, would be as follows:—

10 sets (no. 6) at £2	£20	0	0
9 fender board hangers at 2s. 6d.	1	2	6
9 spare putlogs at 4s.	1	16	0
First cost	£22	18	6
Labour erecting and striking	£0	10	0
5 per cent. depreciation, say	1	3	0
Cost to job	£1	13	0

The general foreman of the big job in the Grosvenor-road, S.W., mentioned above, writes: "Being very doubtful as to the claims you made when you introduced your method to my firm, I have watched the erection of this scaffold most closely, and kept a complete check on time, labour, and material. After having had the opportunity of practical experience for over two months, I have no hesitation whatever in stating that a conservative estimate of the saving on this job has been at least £30 per week in labour, in addition to the quickness afforded by it in extending the lifts, its compactness, and minimum bulk. But for your scaffold, with the number of men I have employed, it would have been impossible for me to have kept contract time."

THE TESTING OF METALS.

"Present Methods of Testing, with Special Reference to the Work of the International Testing Association," were dealt with in a paper by Prof. H. Hubert (Liége), at the Brussels meeting of the Iron and Steel Institute last Monday. He said the increasing importance of the use of metals in every description of construction both of the stationary type, such as bridges and roofs, and of the mobile type, such as the parts of machinery; the ever-increasing intensity of the stresses metals were expected to withstand, and of the energy they were required to transmit, had, during recent years, necessitated a more and more intimate knowledge of the properties of the materials employed, and of the laws which determined the distribution of the stresses in the elements of the structures themselves.

It was, however, impossible to deny that the architects who built the superb monuments of ancient times and of the Middle Ages, and the builders who launched the warships and merchantmen of the eighteenth century, possessed a considerable knowledge of the materials they employed, and a keen sense of the stresses to which they submitted them. They did not, however, for the most part, possess a knowledge of accurate calculation, or of the definite laws necessary for the determination of the elastic properties of their materials. It was not until the seventeenth century, in the era of Galileo, that they found the first attempt, one made by that great scientist, to solve the problem of the resistance of materials, and that Hooke enunciated the fundamental law of stability, "ut tensio sic vis," which had ever since found application.

Having referred to the investigations to which the Iron and Steel Institute had so long devoted special attention, Professor Hubert pointed out that great modern industries no longer confined themselves to the supply of their own national markets. Standardisation, therefore, had been one of the leading objects of the founders of the International Association. Professor Schule, of Zurich, speaking at the Brussels Congress in 1903, said that it seemed at the time of the founding of the association in 1895 that such a degree of uniformity was not only possible, but would be attained within a few years; but at the present day, despite the intense activity which had pervaded the field of the testing of materials, the views of the promoters had not been realised, and the association was not progressing with any rapidity towards this end.

At Tilbury, the Port of London Authority are adding a length of 1,212ft to the south quay of the main dock

OBITUARY.

The death is announced of Mr. Orlando Baker, M.S.A., of Hobart, Tasmania, one of the founder members (1884) of the Society of Architects. Mr. Baker retired from practice some years ago, but continued to take an active interest in the work of the Society, and was, at the time of his death, Local Honorary Secretary for Tasmania.

The funeral of the late Mr. William John Oliver, a Licentiate R.I.B.A., of 1, Dallington-street, Wolverhampton, took place on Saturday at the Wolverhampton Cemetery, the first portion of the service being held at St. Jude's Church, Tettenhall-road. The service was choral, and a number of Freemasons, representing four Wolverhampton lodges, attended, together with representatives of the Wolverhampton and District Architects' Association.

The death has taken place in Glasgow Royal Infirmary of Mr. John T. Howden, a former president of Glasgow Trades Council, and a respected member of the local labour movement. Mr. Howden, who was the secretary of the Glasgow district of the Amalgamated Society of Carpenters and Joiners, occupied positions on several public bodies, being a member of the Distress Committee, a director of the Blind Asylum, and workmen's representative on the Board of Management of the Royal Infirmary. He was largely instrumental in securing better wages and conditions for the blind workers of the city.

Mr. George Horatio Larmuth, one of the few survivors of Garibaldi's English legion, died on Friday at Enderley, Bramhall, in his 76th year. When war broke out Mr. Larmuth had just completed his apprenticeship with a Manchester firm of land agents and valuers. Mr. Larmuth sailed with his companions from Harwich and was present at such fighting as the Legion got. When he returned to Manchester he established the firm of valuers and estate agents in St. Anne's-square, of which he was the head until his death.

One of the best-known members of the Clerks of Works Association, Mr. John Aitchison, has died suddenly. He joined the association in 1884, he served for some years as auditor, and in 1893 as president. A fluent and well-informed speaker, at every annual dinner he was entrusted with proposing one of the principal toasts.

The Ebbw Vale Company intends to erect 500 houses on garden-city lines at Cwmcarn. The site selected occupies the side of a hill. The company is taking this step in order to accommodate the workmen who will be employed at a new colliery in the Cwmcarn Valley.

H.M. Consul at Antananarivo (Mr. T. P. Porter), reporting on the trade of Madagascar in 1912, says: The sum of £800,000 is to be expended on the construction of deep-water quays and harbour improvements at the port of Tamatave. Tenders will be invited by the Colonial Department in Paris for the execution of these works, which are to be commenced in 1914, and will, it is expected, be completed within five years.

A much-needed improvement is being carried out by the city council of Bristol at the Old King-street end of Milk-street. The cross thoroughfares made the spot a dangerous one, but a strip of land has been acquired of the Ridley Almshouse property by which the opening portion of Milk-street has been widened by five feet, and the corner of Old King-street rounded off, so that the drivers of vehicles can get a better view of approaching traffic.

At Herne Bay an Edward VII. memorial concert hall has been built immediately behind the East Cliff Pavilion. The hall is 136ft. 6in. by 60ft., and is 20ft. high. Seats are provided for 1,500 persons. On the flat roof is a garden and promenade. The interior of the hall is free from columns or other obstructions, the sides and terrace roof being supported by ferro-concrete wall stanchions. The main roof beams have a clear span of 60ft., a maximum depth of 7ft. 9in., and a width of 14in. The building was designed by Mr. F. W. J. Palmer, A.M.I.C.E., the town surveyor, for whom working drawings of the ferro-concrete construction were prepared by Messrs. L. G. Mouchel and Partners, of Westminster.

Currente Calamo.

Earl Beauchamp, of course, has declined to dismiss the non-unionist painters employed at the Office of Works. He could not do anything else. Government Departments are bound, like all other decent masters, to pay the recognised scale of wages, and abide by all other fair conditions, and attempts to coerce them to do more are as ridiculous as they will prove futile. The masters who have acceded to the demands of the strikers are few, and the strike will continue after a fashion till the men are tired of it. A "huge majority" have balloted against surrender of course. One builder in a thriving town of some 50,000 inhabitants, twelve miles or so north of the Metropolis, told us yesterday that all his men had balloted against the acceptance of the masters' offers, unionists and non-unionists alike—he employed about half and half, he thought—but they were all still at work, and one of them had told him the rest all took strike pay last Saturday! Possibly that was an exaggeration. At present we do not think either the Master Builders or the Master Decorators will revise their terms. The upshot will be the acceptance of what might have been had weeks ago, but for the refusal of the men to submit the point of dispute to arbitration. The Master Decorators offered a penny an hour, and the men demanded three-halfpence at once. At the finish, by the time present contracts have expired, some sort of a peace will be patched up, and the Painters' Union will be the weaker in funds by some thousands of pounds. Not very statesmanlike trade-unionism!

The *Times* Educational Supplement for September 2 devotes four pages to the question of the new site for the University of London. A whole-page map explains at a glance how the present buildings of the University are distributed in all parts of London, and shows the claimed advantages of concentration upon one of the three sites now under consideration, the Bedford, the Foundling Hospital, and the River sites. We think, ourselves, that if the *Times* had included the site in front of the British Museum, suggested by Mr. David Barclay Niven in the Building News of March 22, 1912, it would have been patent to all that its advantages as regards concentration, ease of access, and opportunities of due architectural treatment far exceed those of the other three proposed sites.

The present official activity as to Undeveloped Land Duty shows that the Chancellor of the Exchequer, finding that the pounds promised on platforms to be wrung out of the "Idle Rich" as Increment Duty do not come in well, has turned to the pence that can still be collected for Undeveloped Land Duty. Some money must be got in somehow to make the figures look better. There is an ironical humour about the action of a Government which has killed building enterprise and made land development impossible suddenly turning round and taxing the waste places they have created or continued! Even the vast standing army of officials appointed and maintained at so great a loss under the Act cannot keep up with the work of land valuation that has to be done. The result is that now that a period of over three years has passed since April, 1909, we find the officials busy getting out their overdue assessments, so that as much money in the way of arrears as is possible may be got for revenue.

One of the worst features of S. 19 of the Finance Act is that it makes the present owner liable for any undeveloped land duty which would have been chargeable to a past owner had he been assessed. There seems no doubt that this is the legal effect of the clause, and one result will be to add yet another requisition on title on behalf of a purchaser as to the payment or assessment of such duty by or upon the vendor or his predecessors in title. Nor can this difficulty be met by the usual undertaking, for the section stops this hole by providing "notwithstanding any contract to the contrary." As is well known, the owner of an occupied house is liable for the property tax, even though he has received no rent from his runaway tenant. So now the buyer of land will be responsible as "owner for the time being" for any unpaid undeveloped land duty chargeable during the preceding three years, but only assessed as against him when the officials can find time to attend to their business.

An American legal decision which is worth noting comes from Oakland, Cal., which is recorded in a press despatch as follows:—The decision of Judge Murphy in favour of former Governor George C. Pardee and against Charles Taylor, architect, it is believed, will afford the Institute of Architects a theme for discussion. Pardee entered into an agreement with Charles Taylor and his father, under the terms of which Taylor was to draw plans for a home to cost not over 25,000dol. After the house was built Pardee found that he had spent 34,000dol. in its construction, and refused to pay Taylor's fee. Taylor sued for 75Idol., and Judge Murphy held that he should have kept the price within the original estimate if he desired to collect for his services under his contract.

By a decree of Aug. 4 it was decided to throw open to competition (competitors of French nationality only) the designs for the new French nickel pieces of 25, 10, and 5 centimes which are to be issued next year. The competition closes next Monday, and it is known that no fewer than 96 artists have inscribed themselves as competitors. The designs will be sent in under fancy names with the real name separately sealed up, and the jury have agreed to eliminate all with the exception of ten designs for a final choice. Something good ought to come of a contest which has attracted so many to the field. The winner will receive a prize of £800 in addition to the glory. His achievement will, in all probability, be another of the things they manage better in France, partly, no doubt, because no such encouragement is given to artists here.

A suggestion has been made that, with the 700th anniversary of the sealing of Magna Charta in the near future, some memorial be placed in Little Dunmow (and preferably in the ancient Priory Church) to the Fitzwalter family, for three centuries Lords of the Manor, and conspicuous for services to the county and the nation. Perhaps the family is better known by its foundation of the ancient manorial custom of the "Flitch" (or "Gammon") than by the part it played through Robert, the third Lord, at Runnymede and elsewhere; but, in any case, it is a famous historical house, and a small committee which has the proposal under consideration invites any correspondence or suggestions from persons interested, and to inquire whether any national memorial for 1915 has yet been mooted. This Robert Fitzwalter is in some disfavour with modern historians, but the committee is concerned with an undoubted national achievement in which he bore a high part. Communications should be addressed to Mr. Hastings Worrin, Bouchiers, Little Dunmow; or the Rev. E. Stiff Robson, Vicar of Little Dunmow, Felsted.

On Wednesday the Manchester City Council discussed the municipal building extension proposals. Mr. Derwent Simpson (the chairman) laid the minutes of the town-hall committee before the council. The minutes contained a recommendation that the council should put into its Parliamentary Bill an application for power to buy certain land and property for extension purposes, and the object of this, in effect, was, it was explained, merely the convenience of the Parliamentary committee. It did not commit the council to anything at all, Mr. Derwent Simpson said, and he was supported in his suggestion by Sir Charles Behrens and the town clerk that the matter should be left over, apart from this, to the November meeting. Mr. Derwent Simpson's arguments were that accommodation is needed for the 473 members of the corporation staff who are now in rented buildings, that the town-hall contains 380 people more than it should, and that the cost will not be a million pounds, as has been said, but really only £350,000. The discussion wandered wide. Mr. McLachlan's proposal that a report should be prepared for the October meeting and the paragraph taken out of the minutes was finally accepted, although Mr. Bowie suggested that the scheme should be killed then and there, but his amendment was defeated by 27 votes to 13.

The visit to England of Dr. Tolman, one of the trustees of the New York Museum of Safety Appliances, who has come here to study the protective arrangements in our factories, emphasises the fact that England has not yet succeeded in establishing a similar museum, although plans have been drawn up and a site in Westminster has been secured. The New York Museum originated in the successful attempts made by several people in that city to prevent accidents by teaching school children how to avoid obvious risks of traffic and fire, and how to enter and leave street cars in safety. With them originated the idea of the "think button," to be worn by the child as a reminder. They very soon found that still more valuable work was to be done in the factories, where the yearly record of accidents was appalling, and they established a museum where manufacturers and employers may study the various protective appliances and gauge the amount of unnecessary risks that have been run. In America the onus of proof that there has been no contributory negligence on his part lies with the employee demanding compensation, instead of with the employer, as in England.

Messrs. J. C. King, Ltd., the well-known manufacturing stationers and printers, of 42-60, Goswell-road, E.C., are devoting themselves to the production of a unique series of

office helps for builders, and we advise all architects, surveyors, property owners, builders, and contractors to send a postcard, when, if they mention this journal, they will get free "King's Builders' Stationery Price-List No. 60." Their Time Books are cheap and excellent, both for desk and pocket. So are their Abstract Books, and Insurance Act Wages Books. The Surveyor's Pocket-Books and Sectional Books for the pocket are serviceable, and the Architect's Sketch-Books, Dimension Books, and Certificate Books the best and cheapest of their kind we have seen. Their Drawing Office Materials are good value for the very modest prices, much better than some which are listed by others at far higher figures. In all the ordinary lines of stationery of every description buyers will save a good deal of money, and many will thank us for this introduction to a firm that is so intelligently and liberally meeting the needs of our professions and trades.

Hardly as lucid as it might be, perhaps; but it shall never be said any novel method of construction was refused notice in our own pages:—"Frank McGuire is building a new house for himself on his lot on the Green-lead-road. He is building the new house outside of the old one, and after the new house is inclosed he will tear the old one down."—From the *Ontonagan Herald*, Ontonagan, Mich.

Here is a mixed metaphor which deserves record. "That, gentlemen, is the marrow of the Education Act, and it will not be taken out by Dr. Clifford or anybody else. It is founded on a granite foundation, and it speaks in a voice not to be drowned by sectarian clamour."—Sir Robert Purvis to his ex-constituents at Peterborough.

We are glad to learn that Professor William Alphonsus Scott, A.R.I.B.A., of Mountjoy-square, Dublin, the President of the Architectural Association of Ireland, is convalescent after a severe attack of pneumonia.

A miners' hall, offices, and agents' houses are about to be built on the Red Hills Villa estate for the Durham Miners Association, from plans by Mr. H. T. Gradon, Durham. The estimated expenditure is £16,000.

Professor Percy Groom, D.Sc., F.L.S., will give, during the forthcoming session at the Royal College of Science, a course of nine or ten lectures and demonstrations on Timber for engineers and architects. The lectures will be delivered on Tuesdays and Thursdays, from 2 to 3 p.m., beginning Thursday, October 9, and laboratory work from 3 to 4 p.m. on the same days.

Wednesday was the 262nd anniversary of the battle of Worcester, when the Scottish Army, which came to England to reinstate Charles II., was defeated by Cromwell; and that day was selected for the unveiling by the Earl of Coventry of a memorial brass and a bronze tablet (with medallion portrait) in Worcester Cathedral to the second Duke of Hamilton, who died of wounds received in the historic fight, and is buried in the sacrarium of the Cathedral. The memorial brass has been presented by the Hon. J. Cavendish Lyttelton, M.P., eldest son and heir to Viscount Cobham, whilst the cost of the tablet has been defrayed by subscription.

The centenary of the siege of San Sebastian has been commemorated by a monument which was unveiled on Sunday in the presence of the King and Queen of Spain and Queen Maria Christian. The memorial, for which the sculpture school of Vittoria produced the design, has cost £10,000 and consists of a short Corinthian column of white marble, standing upon a massive base, whereon are represented episodes of the siege and of the subsequent history of the city. On the top of the column is a gilt quadriga bearing an allegorical figure with a laurel wreath. At the foot of the monument, flanked by two lions, is a bronze statue of Queen Maria Christina.

PROFESSIONAL AND TRADE SOCIETIES.

R.I.B.A. STANDING COMMITTEES.—The following appointments to the four standing committees have been made by the Council of the Royal Institute of British Architects under by-law 51:—

Art.—Walter Cave, T. Raffles Davison, H. P. Burke Downing, C. Wontner Smith, Percy W. Lovell.

Literature.—Arthur T. Bolton, J. D. Crace, F.S.A.; E. A. Rickards, Herbert Wigglesworth, John S. Lee.

Practice.—E. J. Gosling, Albert W. Moore, H. A. Satchell, Septimus Warwick, H. A. Saul.

Science.—R. Stephen Ayling, Professor W. C. Unwin, F.R.S., M.Inst.C.E.; A. T. Walmisley, M.Inst.C.E.; H. W. Burrows, F.G.S.; E. Stanley Hall, M.A. Oxon.

The standing committees for the new session have elected their officers as follows:—

Art.—E. Guy Dawber, Chairman; H. Heathcote Statham, Vice-Chairman; Percy W. Lovell and W. A. Forsyth, Hon. Secretaries.

Literature.—W. Henry Ward, Chairman; C. E. Sayer, C. Harrison Townsend and W. G. Newton, Hon. Secretaries.

Practice.—Wm. Woodward, Chairman; Max Clarke, Vice-Chairman; H. A. Satchell and Matt. Garbutt, Hon. Secretaries.

Science.—F. R. Farrow, Chairman; Digby L. Solomon, Vice-Chairman; George Hornblower and G. Leonard Elkington, Hon. Secretaries.

BRISTOL AND GLOUCESTER ARCHÆOLOGICAL SOCIETY.—The autumn meeting of the Bristol and Gloucestershire Archæological Society was held at Gloucester on Monday, under the presidency of the Bishop of Gloucester (Dr. E. C. Sumner Gibson). At a meeting of the council an agreement with the Gloucester Corporation for the housing of the society's library at the public library was sealed. Subsequently the general body of members assembled in the south transept of the cathedral, where they were received by the Sub-Dean, Bishop Mitchinson. Bishop Mitchinson explained that, owing to the preparations for the Three Choirs Festival, their visit would be necessarily restricted to choir, transepts, presbytery, and Lady-chapel—to the eastern limb of the great cathedral—but this limitation would be advantageous if it compelled a more careful and leisurely study of that part of the building than would otherwise have been the case. Bishop Mitchinson, Canon Bazeley, and the cathedral architect (Mr. F. W. Waller) conducted the visitors in three sections through the several parts of the eastern limb, and in the Boteler Chapel Canon Bazeley gave an address on the rule of Abbot Boteler (1437-1450), and on the heraldry, sculpture, and floor tiles of the chapel, which is situated at the north-east angle of the choir. The reredos, which had been much injured, still contained twelve statuettes and many heraldic shields. The nine principal statuettes had disappeared—probably destroyed or removed from their brackets by Order of the Council in 1548. The twelve remaining appeared to represent the Twelve Apostles, including St. Paul. After luncheon the party went in motor brakes to Tredington, Stoke Orchard, and Swindon. At Tredington they were received by the vicar, who conducted them over the church, and a visit was paid to Tredington Court, by the courtesy of the Rev. W. Surman Mansell. At Stoke Orchard the society was received by the rector of Bishop's Cleeve, and at Swindon by the rector of the parish.

DURHAM ARCHÆOLOGICAL SOCIETY.—The members of the Archæological and Architectural Society of Durham and Northumberland assembled at Hexham station on Friday, to their fourth outdoor meeting of the year. The party numbered between 70 and 80. The buildings and places visited were described by Mr. W. H. Knowles, F.R.I.B.A., Newcastle, one of the hon. secretaries. Arrived at Hexham, the party drove to the Chesters, where the remains of the Roman camp of Cilurum were inspected, and also the museum in which there is a valuable collection of altars, statuary, etc., brought to light at the various stations on the Roman Wall. By permission of Miss Cruddas, a visit was next paid to Houghton Castle, a picturesque stronghold which has been alternately in the possession of England and Scotland. The first building was erected in the 13th century by the Swinburnes, explained Mr. Knowles, and in the 14th century the castle was made stronger by the Widdringtons. He commented upon a problem which had long exercised antiquaries, as to the use of a series of buttresses and arches which appear on the exterior of the castle, and seemed to have no apparent constructive use. That problem had now been solved, said Mr. Knowles. To the second building had been added vaults, and walls had been thrust out, the walls and buttresses being followed by the superstructure, and thus forming the arches. Chipchase Castle, the residence of Mr. Tom Taylor, was later visited. The peel tower of this stately and picturesque Northumbrian mansion is still retained in good preservation. The present mansion is of Jacobean style, and was built by Cuthbert Heron in 1621. Mr. Knowles gave a sketch of the growth of Mediæval architecture as peculiar to the North of England, and pointed out that Chipchase Castle was essentially a border stronghold, the architecture followed being entirely with a view to defence. In these days it was said that a man's house was his castle, but in the mediæval days a man's castle was literally his house. Mr. Knowles also gave an interesting description of the Jacobean front of the castle, and also of the development of some domestic architecture from the Mediæval tower.

EAST AFRICA ARCHITECTURAL ASSOCIATION.—We are glad to learn that the above association has been formed in British East Africa and Uganda. The officers for the first session are: President, Mr. R. M. Geater; Vice-President, Mr. W. M. Robertson; Hon. Sec. and Hon. Treasurer, Mr. Harold E. Henderson, Lic.R.I.B.A., Box 80, Nairobi, B.E.A.; Council, Messrs. L'Roux, Tate-Smith, Gow, and Hurle Bath. It is determined that as soon as practicable bills be brought before the legislative councils for the registration of architects in the two protectorates, and application will be made for alliance with the Royal Institute of British Architects.

COMPETITIONS.

DESIGN FOR CIGAR-SHOP FRONT.—Particulars appear in our advertisement pages of a competition for a design for a cigar-shop front in Piccadilly for Messrs. Martins, Ltd., the well-known tobacconists. Mr. Henry Tanner, F.R.I.B.A., is the assessor, of whom particulars can be had.

OTTAWA.—Sketch designs are invited from architects practising in the British Empire in a preliminary competition for the erection of Departmental and Court Buildings at Ottawa, as briefly announced in our issues of June 20, p. 853 and July 11, p. 40. From the designs submitted in this preliminary competition six will be chosen by the assessors (Messrs. T. E. Collcutt, past president R.I.B.A., J. H. G. Russell, and J. O. Marchand) to submit more matured designs in a final competition. The designs of the architect placed first by the assessors in this final test will be entrusted with the work which the Government intends carrying out at once, and the five unsuccessful competitors will each receive an honorarium of 3,000 dollars. The designs in the first competition must be delivered in Ottawa, Ont., carriage paid, not later than noon, January 2, 1914, addressed to Mr. R. C. Desrochers, Secretary, Department of Public Works. Conditions for both competitions may be had on application to Mr. Desrochers, and also at the London office of the High Commissioner for Canada, 17, Victoria-street, S.W.

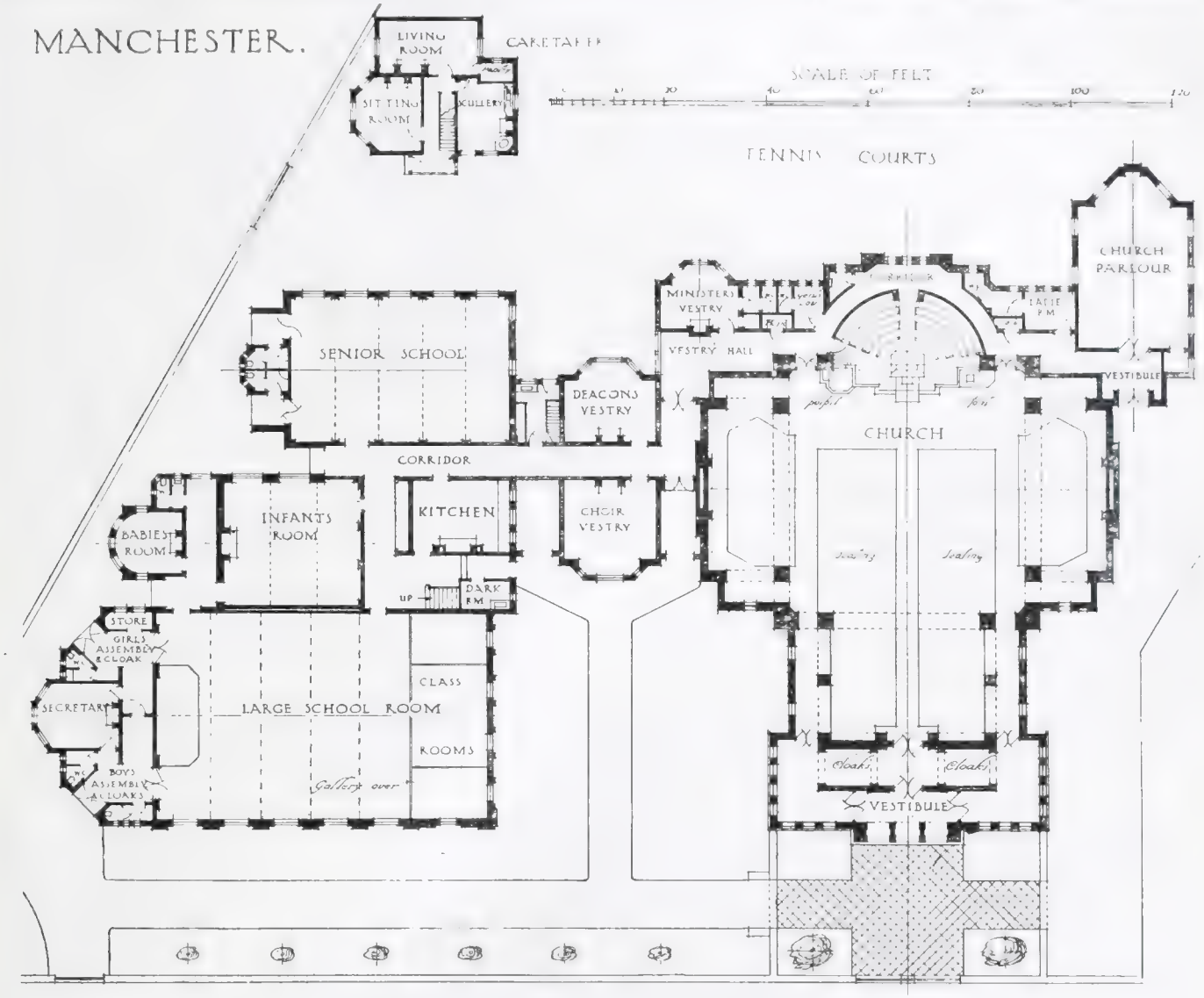
The Sincil Bank new council school at Lincoln was opened last week. The school was built for the accommodation of 700 children in the rapidly-growing southern district of the city.

Mr. Frank Gissing Debenham of Cheshunt Park, Herts, a director of the Auction Mart Company (Limited), lately senior partner in the firm of Messrs. Debenham, Tewson, Richardson, and Co., of Cheapside, E.C., who died on November 7, aged 80, left estate of the gross value of £280,391, of which the net personalty has been sworn at £97,753.

Our Illustrations.

ROBY CONGREGATIONAL CHURCH AND SCHOOLS, LONGSIGHT, MANCHESTER.

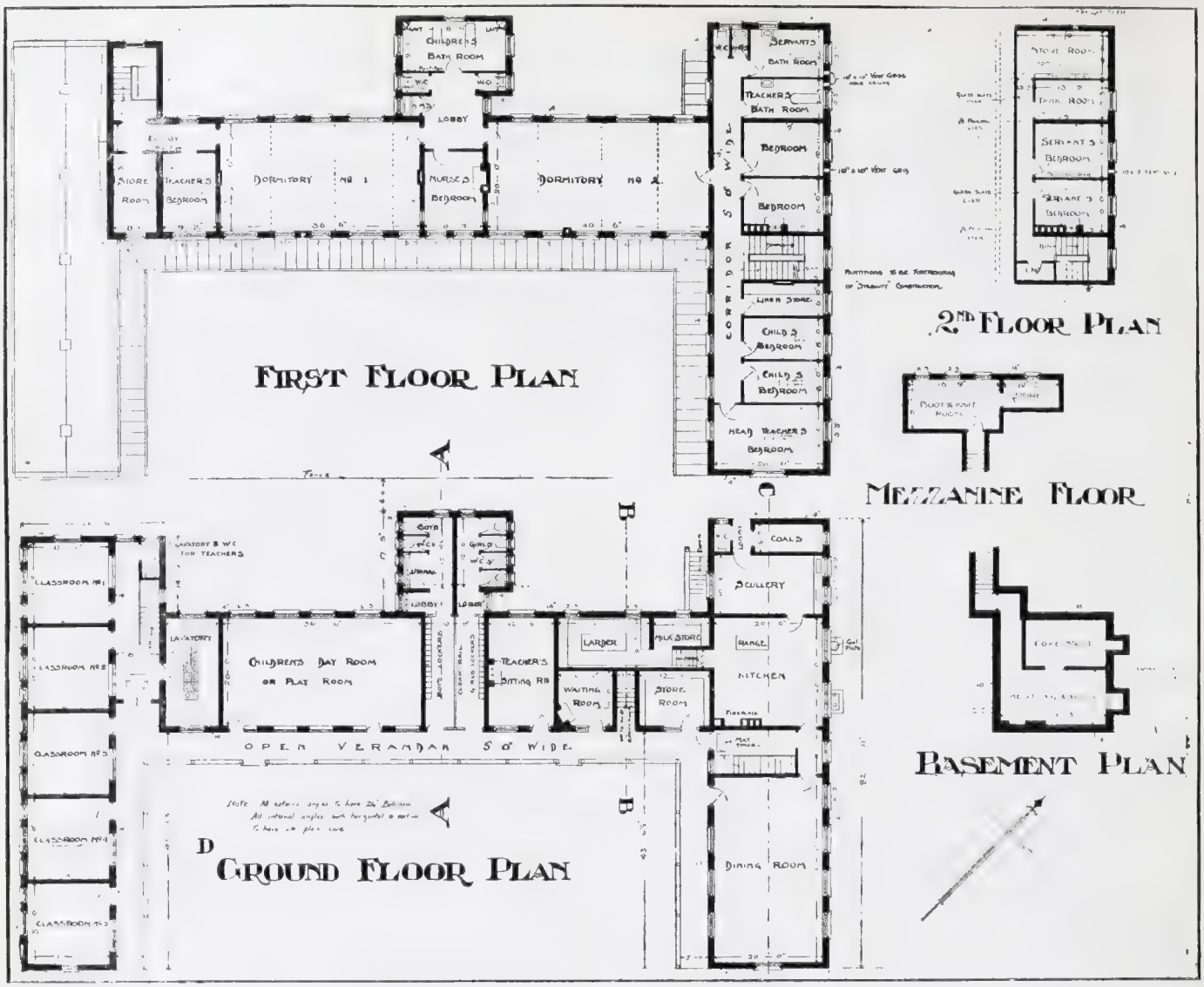
These buildings in Dickenson-road, Longsight, have been erected out of the proceeds of the sale of the old Grovesnor-street Chapel and Roby Schools to the Royal Infirmary Board, and have just lately been opened for use. The church accommodates 650, with its church parlour and vestries, lecture-hall used by senior school, intermediate school with eight classrooms, primary department, and babies' room, each department being provided with its own separate entrances (duplicate), cloakrooms, and lavatories for both sexes. A communicating corridor has been planned, so as to give access from each department direct into the church without going outside the buildings. On the first floor there is a library and men's room for social purposes, with the necessary cloakroom accommodation. The caretaker is provided for in a small detached house adjacent to the school buildings. The main feature of the church is that the whole of the 650 sittings are arranged to give an uninterrupted view of the pulpit. This desirable object has been obtained by roofing the main portion of the church with a large dome nearly 50ft. in diameter, springing from semi-domes at each corner of the crossing. These semi-domes each spring from three large stone piers carrying arches some 30ft. in diameter, opening into shallow transepts on either side and into a short nave of about double the depth of the transepts and into the semicircular chancel. The interior effect is spacious and simple and eminently suitable for Free Church services. The building is mainly dependent for lighting on the three large windows in nave and transepts, supplemented where necessary by smaller windows. At the main entrance in Dickenson-road ample cloakroom accommodation has been provided. The dome is plastered, as also the main walls, and a tile dado has been introduced along the walls, except where the stone piers occur. The seating is in oak, and is so arranged that the seats are kept away from all outside walls. Externally, the materials used are 2in. bricks with Alderley stone dressings. The plan dictated the form of the building, which is suggestive of Renaissance work, and the elevations are the outcome of an endeavour to give the building something of a monumental character. Messrs. J. Harold France and Harry B. Laycock, of Chapel Walks, Manchester (whose design was successful in a limited competition) are the architects. The organ seen in the apse is only temporary. The permanent instrument will be located on the end wall above the corridor.



ROBY CONGREGATIONAL CHURCH AND SCHOOLS, MANCHESTER.
Messrs. J. Harold France and Harry B. Laycock, Architects.

THE YORKSHIRE INSTITUTION FOR THE DEAF, DONCASTER: NEW PREPARATORY SCHOOL AND SWIMMING-BATH.

This school is now being built at the rear of the gardens of the above institution. It is intended to get the children into the institution at an earlier age than previously, thus giving the teachers a better opportunity of imparting instruction, and at the same time being a considerable help to the child itself. Accommodation will be provided for thirty scholars in residence, although there are classrooms sufficient for fifty, the remaining twenty being drawn from the other school. On the ground floor are classrooms, day-room, dining-room, kitchens, teachers' sitting-room, waiting-room, cloakroom, and offices. On the first floor are two large dormitories and a number of bedrooms for teachers and staff, including two bedrooms for delicate children, adjoining the headmistress's bedroom, and on the second floor storeroom and accommodation for servants are provided. The building itself is on the verandah principle, and is planned so as to obtain the maximum amount of sunlight and fresh air. The exterior is in a modern style of architecture, and consists of red-brick facings, with dressings of artificial stone. Internally the whole of the rooms will be finished in Marblite plaster, the downstairs rooms having dadoes of glazed bricks, the kitchens and larders being lined with white glazed bricks from floor to ceiling. All internal angles are coved. The floors and staircases are of fireproof construction. The swimming-bath adjoins the existing gymnasium, and abuts on the Town Moor avenue. The main tank is 42ft. by 21ft., and the side gangways are 6ft. 6in. wide, and those on the end 8ft. There are also a slipper-bath and shower-bath provided. The bath is constructed in reinforced concrete and lined with white tiles. The lighting is by side



YORKSHIRE INSTITUTE FOR THE DEAF: NEW PREPARATORY DEPARTMENT, DONCASTER.
Mr. Morris Thompson, A.R.I.B.A., Architect.

and roof lights, and a lantern for light and ventilation runs along the whole length of the bath. The cost of the building is about £7,000; but with furnishing, cost of land, etc., the total cost is estimated at £8,500. Mr. Morris Thompson, A.R.I.B.A., of Doncaster, is the architect, his plans having been accepted in competition, and the contractors are Messrs. Dennis Gill and Son, also of Doncaster.

WAREHOUSE, KINGLY STREET, AND GANTON STREET, W.

The business premises at corner of Kingly-street, here illustrated, have lately been



Warehouse, Kingly Street and Ganton Street, W.

erected by Messrs. W. S. Shepherd and Co. The building is constructed with ferro-concrete floors and staircase on the expanded-metal system. The piers to the shop-front are of Aberdeen granite, with the entablature in Whitbed Portland stone, the upper part of the walling being carried out with dressings of red gauged brickwork and Crow borough bricks. The horizontal panels between the windows are made in cast lead. The wrought-iron guard-railing at the top of the cornice is provided for a means of escape from fire. The shop-front is constructed in mahogany, and the bays have been arranged symmetrically and occupy part of the site of the old projections. The building has been planned for use as a warehouse, and a plain treatment has been carried out consistent with its use. The architects are Messrs. Banister Fletcher and Sons, of New Bridge-street, E.C.

UNIVERSITY HALL AND STUDENTS' GALLERY, UNIVERSITY BUILDINGS, CAPETOWN, SOUTH AFRICA.

Lord Gladstone opened this fine Hall in the early part of the present year. The Duke of Connaught laid its foundation-stone in 1909. The building was started in 1905, and we illustrated the exterior and gave plans of the scheme in the Building News for May 29, 1903. Delays took place, owing to lack of funds, and this large central hall, which forms the great feature of this University building, was unbuilt till, through the generosity of the late Sir Donald Currie, sufficient money was forthcoming to enable the University Council to complete the undertaking. The cost has amounted to £100,000. Messrs. Martyn, of Cheltenham, carried out the stone carvings. The dome is covered with copper, and the internal ceiling is decorated in modelled plaster. The panelling is in oak. Black and white marble paving covers the floors where they are not laid with hardwood. The columns in the internal corridor are of Corsehill stone. A big organ will be placed in this hall when the money allows, and this instrument is to occupy the central space in the rear wall of the proscenium. The ground floor of the building, besides including the Examination Hall, is devoted to administration offices. The Registrar's offices are on the main-floor level, with the library, committee-rooms, and council chamber. Mr. William Hawke's design was chosen in the competition, and has been executed with minor modifications, and Messrs. Wimperis and East were the authors of the third premiated plans, which likewise were illustrated when we gave the chosen design as above. The second prize was accorded to Mr. J. Edwin Forbes, of Birmingham. There were sixty-two designs submitted, and Sir Aston Webb acted as the assessor. Messrs. W. Hawke, F.R.I.B.A., and W. N. McKinlay, of Capetown, have carried out the work as shown by the accompanying photographs.

EYFORD PARK, GLOUCESTERSHIRE.

We give a further characteristic detail of Eyford Park, by Mr. E. Guy Dawber, F.R.I.B.A. The first appeared in our issue of April 4 last, and a general view and plan of this fine house were illustrated in the Building News for June 2, 1911.

A chapter of the American Institute of Architects has been incorporated at Columbus, Ohio, under the laws of that State. The following are the first officers:—George H. Bulford, President; F. L. Packard, vice-president; J. W. Thomas, jun., secretary.

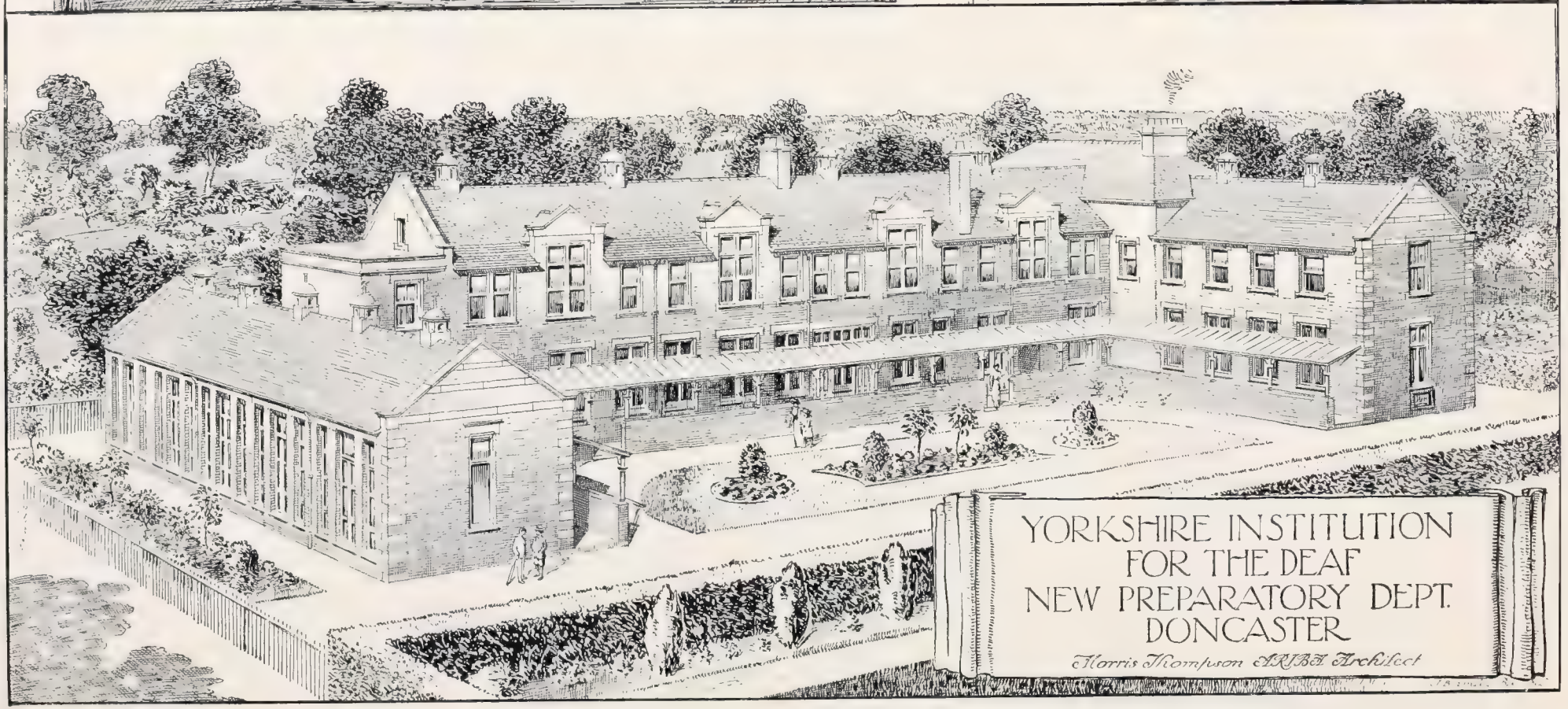




ROBY CONGREGATIONAL CHURCH, ASSEMBLY ROOMS, AND SCHOOL BUILDINGS, LONGSIGHT, MANCHESTER.
Messrs. J. Harold Franct and Harry B. Laycock, Architects.







YORKSHIRE INSTITUTION
FOR THE DEAF
NEW PREPARATORY DEPT.
DONCASTER

Morris Thompson ARIBA Architect



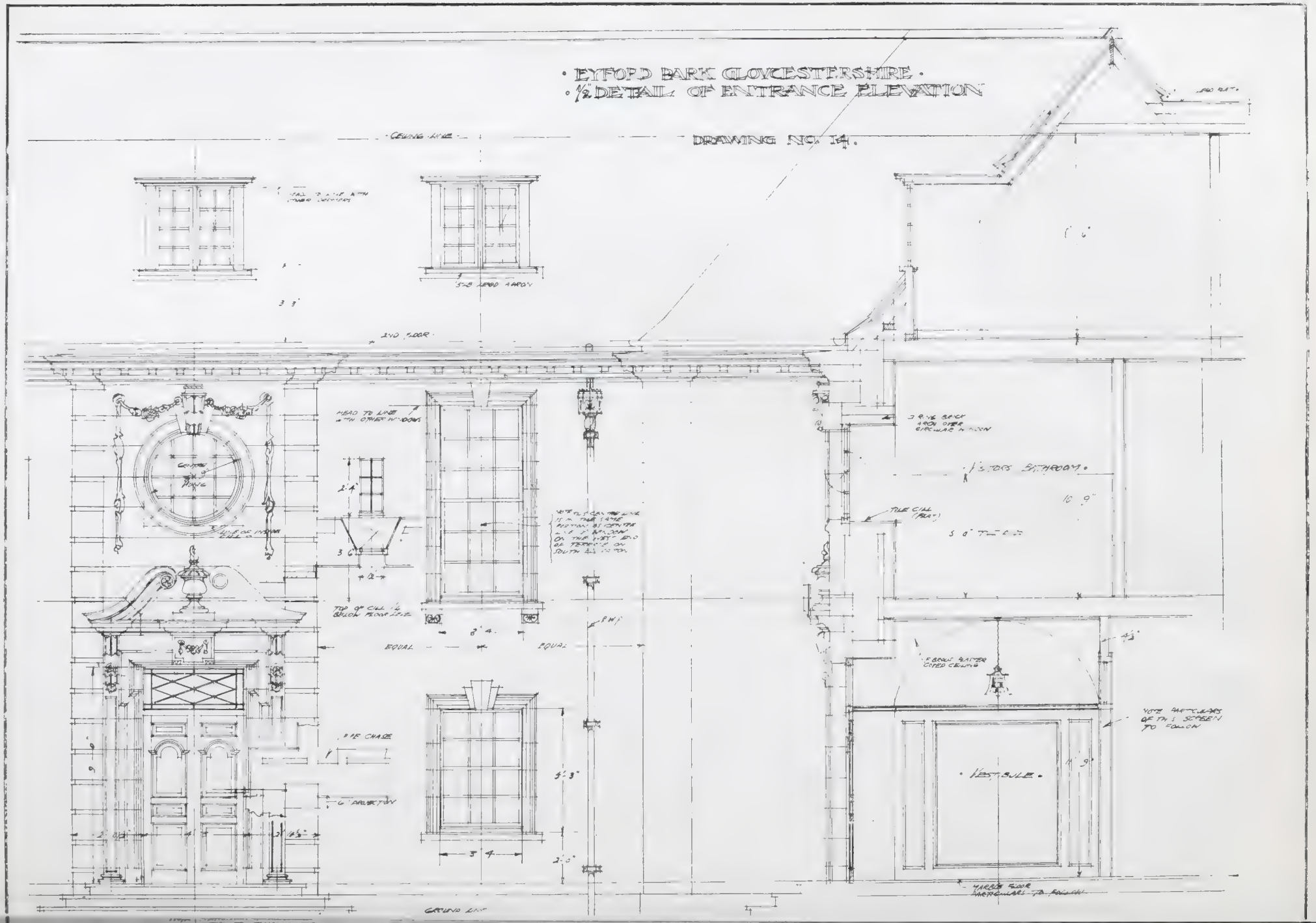
WAREHOUSE, KINGLY STREET AND GANTON STREET, W.
Messrs. BANISTER FLETCHER and SONS, Architects.

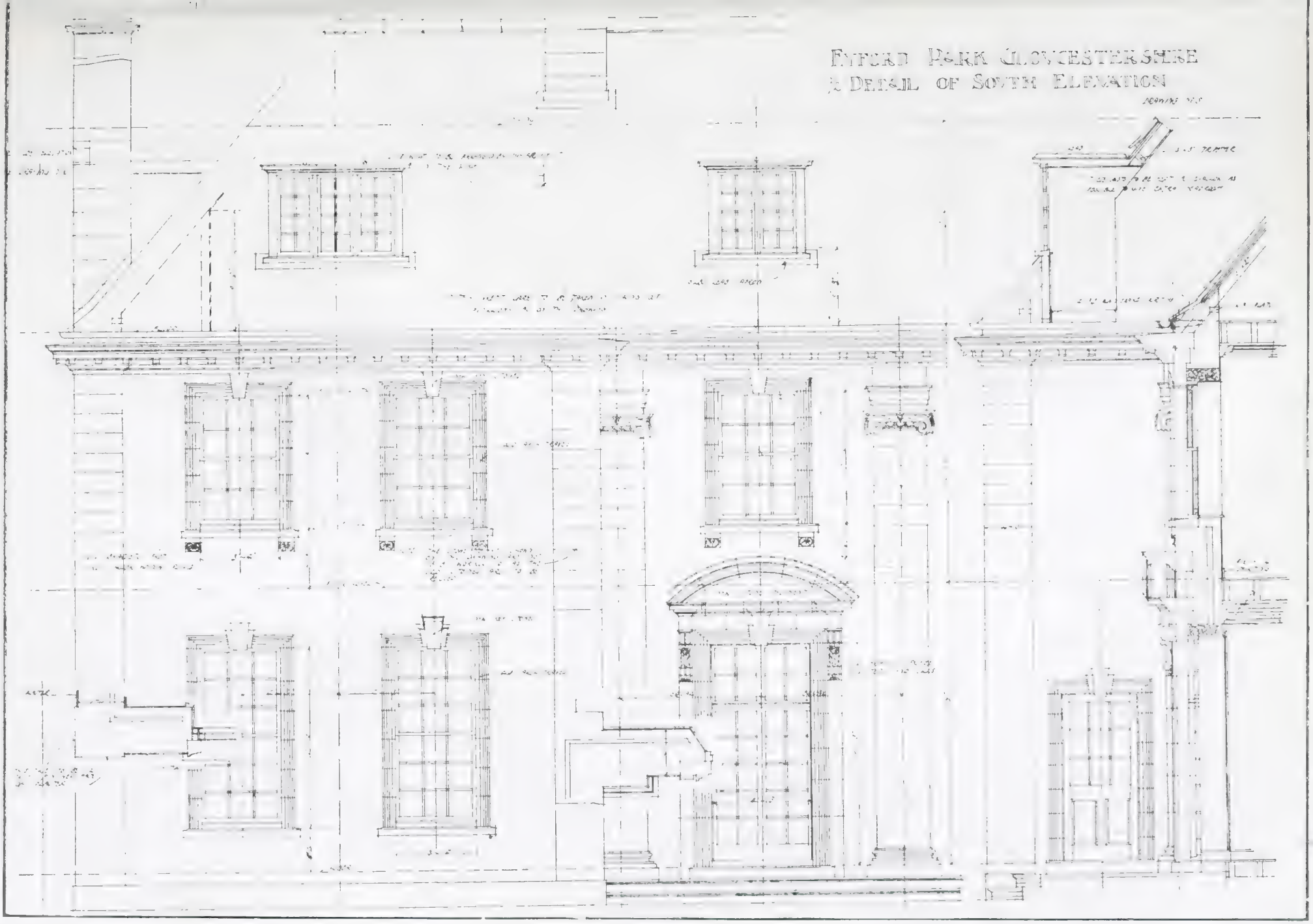


THE UNIVERSITY HALL AND STUDENTS' GALLERY, UNIVERSITY BUILDINGS,



'E TOWN, SOUTH AFRICA.—Messrs. W. HAWKE, F.R.I.B.A., and W. N. MCKINLAY, Architects.


EYTOP D PARK GLOVCESTERSHIRE.
½ DETAIL OF ENTRANCE ELEVATION
DRAWING NO. 14.
CEILING LINE
2ND FLOOR
HEAD TO LINE WITH OTHER WINDOWS
TOP OF CILL IS BELOW FLOOR LEVEL
EQUAL
EQUAL
PIPE CHASE
6" PROJECTION
GROUND LINE
3 RING BRICK ARCH OVER CIRCULAR WINDOW
LOBBY
TILE CILL (FLAT)
5' 0" TILED
10' 9"
4½"
6 BROAD PLASTER COVED CEILING
VESTIBULE
4' 9"
NOTE PARTICULARS OF THIS SCREEN TO FOLLOW
MARBLE FLOOR PARTICULARS TO FOLLOW



EYFORD PARK, GLOUCESTERSHIRE: DETAIL OF ENTRANCE AND SOUTH ELEVATION. Mr. E. Guy Dawber, F.R.I.B.A., Architect.

Building Intelligence.

EDINBURGH. In order to complete St. Mary's Episcopal Cathedral, Edinburgh (which was designed by Sir Gilbert Scott in 1874), operations have been commenced for the erection of the western towers and their spires. The architects are Sir Gilbert Scott's successors, Messrs. J. Oldrid Scott and Son, Westminster, and the contractors for the work are Messrs. E. C. Morgan and Sons, Glasgow. The towers at each corner of the west end of the building had hitherto only been carried up to the height of 60ft. These two towers are to be increased 43ft. in height, each being surmounted by angle pinnacles and a spire 109ft. in height. Each tower and spire will thus be 212ft. from the base to the highest point. The erection of the two towers will occupy about two years, and the cost is estimated at about £11,000.

NEWCASTLE-ON-TYNE.—At the last meeting of the Town Improvement and Streets Committee of Newcastle Corporation, plans were submitted on behalf of the trustees of the late Mr. W. R. Sutton, who left a considerable sum of money for the purpose of acquiring land in London and other populous places in order to erect model dwellings for the poor. The trustees visited Newcastle some time ago, and inspected several places, and ultimately favoured Barrack-square, in the vicinity of Derby street and Todds Nook, upon which are a number of old dwellings. The trustees propose to erect four rows of tenemented buildings, with an open space 50ft. wide between the rows to be laid out as gardens; also with ground for drying clothes at the back of the premises. The blocks will consist of three-story buildings; the majority of the tenements will consist of two rooms, scullery, and yards. The number of tenements to be placed on the area is 132. The committee favourably considered the scheme, and the trustees will now take steps to apply to the Court of Chancery for the granting of money to carry out the scheme.

Engineering Notes.

GUILDFORD.—At Guildford on Monday the mayor opened the first road bridge to be constructed entirely of ferro-concrete in Surrey. It replaces an old narrow brick structure across the River Wey, and with the approaches, has cost £5,500 to build. It is a three-centred arch bridge with a clear span of 70ft., and a width between the parapets of 40ft., with approach gradients of 1 in 32 on the east and 1 in 30 on the west. The bridge, which has been built by Messrs. Somerville and Co., Limited, of Victoria street, Westminster, for the Surrey County Council, has been designed to carry a live load of 200lb. per sq.ft., or a test load of three traction-engines weighing 20 tons each. Thirteen months have been occupied to carry out the work, ferro-concrete piles, 40ft. in length, having to be driven to strengthen the foundations, which revealed unforeseen difficulties.

Lord Rosebery is building a mausoleum and chapel at his residence Rosebery, from which his title is derived, to provide a family burying place for himself and his descendants in the future.

The Roger Miller Company, of Toronto, have been awarded the contract for the Prince Edward Island terminal at Carleton Point of the Intercolonial car ferry. The figure is 950,000dol.

The Home Office authorities have decided to pull down the present Marylebone Police-court at Seymour-place, Marylebone, and to erect an entirely new building on the present site, from plans by Mr. J. Dixon Butler, F.R.I.B.A. The work will be started immediately after the new court at Marlborough-street is finished. During building operations, the business of the court will be carried on at the temporary building in Francis-street, Tottenham Court-road. The Home Office have also decided to reconstruct the West London Police-court.

Correspondence.

REGISTRATION.

To the Editor of the BUILDING NEWS

SIR, I have received a letter from the New Zealand Institute of Architects informing me that a Bill to provide for the statutory qualification and registration of architects practising in New Zealand has passed the second reading, and has been referred to a special committee of the House. The promotors have every reason to hope that the measure will be passed this session.—I am, etc., C. MCARTHUR BUTLER, Secretary.

The Society of Architects, 28, Bedford square, London, W.C. September 1.

A WORKMAN'S COTTAGE FOR £150.

SIR,—Referring to Mr. A. J. Dunn's letter in your issue of August 29 last, I would be glad if you will give me space in your valuable paper to reply to same. In the first instance, seeing that the material proposed to be used in these cottages is practically new, to give specific prices in detail would certainly create a diversity of opinion; it is far better in such cases to let those genuinely interested inquire for themselves, and then form their own opinion. For myself I do not take the general public to be so gullible as your correspondent would imagine them to be. I give them credit for being able to form a fair opinion, after reasonable inquiry.

Mr. Dunn's working out of the cubic contents of the cottage illustrated in my article is not the same as my own, due, perhaps, to the reduction in size of the reproduction, and, consequently, the estimates of cost vary. The actual cubic contents are as follows:—

ft. in	ft. in	ft. in			
34 3	by 14 3	by 20 3	..	9,834	cubic feet
4 6	by 5 0	by 2 3	chimney .	90	.. ..
2 3	by 2 3	by 10 0	chimney . . .	54	.. ..
3 9	by 8 0	by 1 6	bay	45	.. ..
5 3	by 0 4½	by 14 0	breast	27½	.. ..
6 0	by 0 9	by 8 3	door piers .	37	.. ..
				10,046	.. ..

and this, at 3½d. per cubic foot, which is the price I fixed in arriving at an estimate of cost, after a careful comparison of prices of the various materials proposed to be used, gives £147. Taking the cubic contents at 4½d. per cubic foot, the price given by Mr. Dunn, and the usual figure for cottage work, this gives £188, or a difference of £26 (£214-£188) between Mr. Dunn and myself on ordinary construction, so that the actual difference between ordinary construction and that proposed in my article is £41 (£188-£147) or 21.8 per cent. I mention 20 per cent. in my article.

The figures given for the group of cottages are equally erroneous, the contents being 19ft. by 23ft. 3in. by 17ft. 3in.—7,620 cubic feet per cottage, and for four cottages 30,480 cubic feet, and this, at 3½d. per foot, gives £444 10s., as against Mr. Dunn's £747.

The saving in cost of construction has been made in using reinforced brickwork for all walls and partitions, at about half the cost of ordinary brickwork, and in the tiles for the roof, as against slates, also sundry other items. Trusting these figures will give the information necessary to form a true conception of the proposal, I am, etc.,

FRANK H. HEAVEN, A.R.I.B.A., P.A.S.I.

39, Coronation-street, Aberkenfig, Sept. 2.

Damage to the extent of about £1,200 was done by fire to the Cathedral tower of Argyll and the Isles, Cumbrae, on Saturday morning. It is not known how the fire originated. The church, which was built in 1849-52 by the efforts of the late Earl of Glasgow, is the headquarters of the Diocese of Argyll and the Isles.

When John Edwin Fearnley, builder, of Haslingden-drive, Bradford, was summoned at Lancaster, on Saturday, for furiously driving his motor-cycle, at Heysham, on August 12, the chairman said that if it had not been the defendant's first offence, he would have been fined £20 and costs; but they would fine him £2 and costs, and endorse the license. The speed was outrageous.

PARLIAMENTARY NOTES.

HOUSE OF COMMONS VENTILATION. The question of supplying Members of Parliament with ozone is discussed in the minutes of evidence taken by the Select Committee on House of Commons Ventilation, which was published on Friday night. Mr. Arthur P. Percy, First Class Assistant Engineer to the Office of Works, and formerly Resident Engineer to the Houses of Parliament, in a general description of the system of ventilation in force, mentioned that the ladies' slumber, Strangers', and Press Galleries have for the last few months been supplied with ozone which is artificially manufactured by electricity. The Members of the House have not yet been supplied as the plant has been installed tentatively as an experiment.

CHIPS.

A new college in tone and four stories in height has just been built at Mullingar, from plans by Messrs. O'Callaghan and Webb, architects.

The Canadian Pacific Railway have completed their high-level bridge across the Saskatchewan River, from Strathcona to Edmonton at a cost of slightly over 1,000,000dol.

The late Mr. Benjamin Nicholson, aged 80, of Cotton Lodge, Annan, head of Messrs. John Nicholson and Co., timber merchants, left personal estate valued for probate at £49,275.

We regret to hear that owing to arterial trouble Sir Alexander Binnie, formerly chief engineer to the London County Council, has been compelled to have one of his legs amputated. Sir Alexander is in his seventy-fifth year.

The Local Government Board have given their sanction to the application of the Newry No. 1 Rural Council for a loan of £5,900 for the provision of a water supply for the town of Rathfriland. The engineers are Messrs. P. H. McCarthy, M.A., B.E., Westmoreland-street, Dublin, and Mr. S. Wilson Reside, Margaret-square, Newry.

Mr. C. Paulet Camborne Paynter, of Kilmington Manor House, has presented to the Borough Museum, Tudor House, Southampton, two 13th-century inlaid heraldic tiles, and a carved panel from the 14th century rood-screen formerly in Netley Abbey. He has also presented to the museum a painting by Hart, of Southampton, of the water-gate of the town, demolished in 1804.

The two greatest cities in Eastern Canada show continued signs of progress and prosperity. The amount of building permits in Toronto for the first seven months of this year was 17,657,321dol., as compared with 15,494,45dol., for 1912. The total estimated value of the building permits issued in Montreal for the corresponding period was 11,497,950dol., an increase of 17 per cent. over the same seven months of 1912.

A verdict of death from heart failure was returned at an inquest held on Tuesday, following the sudden death at his residence, Westernmoor, Neath, of Mr. William Jones, a well-known railway and waterworks contractor. Mr. Jones, who was seventy-five, carried through important contracts in various parts of the United Kingdom, amongst them being the construction of the Cardiff waterworks and the Rhondda and Swansea Bay Railway. He was also well known as a contractor in Cambridgeshire and the West of England.

Speaking at the Leith Flower Show on Saturday, Mr. Munro-Ferguson, M.P., said that many German towns had thousands of acres belonging to the community, and while holding that land for building purposes, they let it out for gardening, sylviculture, or horticulture. He did not see why that should not be done in this country. In France, sometimes, whole tracts of country were given up to gardening under a system of small ownership. There was no reason why a horticultural society should not hold land in order to make it as easy as possible for town dwellers to get the use of it.

A stained-glass window is to be erected in the Lady-chapel of All Saints' Church, Oakham, and the altar is to be restored to the chapel of the Holy Trinity in order that the chapel may be used for services. The Lady-chapel on the south side of the chancel, and its east-end and east window under which its altar stood are now blocked up by the altar and the choir vestry-screen. The centre window of the three lights in the south wall of the Lady-chapel will be filled with stained glass, and the subject to be represented is the Purification of St. Mary the Virgin and the Presentation of Christ in the Temple. The window has been designed by Mr. J. N. Comper, who has also drawn the plans for the altar in the chapel of the Holy Trinity.

WATER SUPPLY AND SANITARY MATTERS.

TENBY (PEMBROKESHIRE).—The scheme for the reconstruction of the main intercepting sewers, sea outfall and other works incidental thereto at Tenby, and which was prepared by Mr. T. J. Moss-Flower, C.E., 28, Victoria-street, Westminster, S.W., and Carlton-chambers, Bristol, has been approved by the Local Government Board, and tenders are now being asked for, and the work is to be proceeded with forthwith. A 4ft. diameter cast-iron outfall is to be carried into the sea for a distance of 500 yards, and this will continually discharge the water of the Ritec during such times as the level of the sea will permit thereof. The sewage of the town is to be taken out of the Ritec, and conveyed to a tank-sewer, 6ft. in diameter and about 1,150ft. long, to be constructed in brick and concrete, in which the sewage will be stored during about ten hours of each tide, and be discharged only at certain states of the ebb tide. Penstock chambers are to be erected at the sea end of the tank-sewer, and at the sea end of the existing culvert carrying the Ritec waters, and a water-level recorder with indicator-board, etc., will be fitted up, so as to indicate the levels of the water and sewage in both compartments of the two Penstock chambers. A Penstock house, constructed in local blue limestone, will be built above the Penstock chambers. At the upper end of the tank-sewer a screening-chamber is to be built for the purpose of screening all sewage prior to its passing to the tank-sewer. The low-level sewers, varying in size from 9in. to 21in., are to be reconstructed, and other incidental works are involved. The matter has been before the corporation for a long time, and several schemes have been prepared, and two submitted to and rejected by the Local Government Board, prior to Mr. Moss-Flower being engaged in February last to deal with the matter.

WATER SUPPLIES IN CANADA: INSUFFICIENT PRECAUTIONS TO PREVENT POLLUTION.—Five million gallons of water per day is, according to latest Government returns, the per capita consumption for all purposes of Canada's 7,250,000. The returns gave in detail much valuable information regarding the cost, capacity, and history of the municipal water supply plants throughout the Dominion. The Canadian practice is to get water for municipal supply, wherever practicable, from rivers and lakes, and it is to be feared that in many cases insufficient precautions are taken to prevent the pollution of these waters. One of the chief reasons is the financial stringency. The municipal waterworks of the Dominion represent an aggregate expenditure of 95,000,000dol.; but had the same scrupulous care been taken as is customary in Britain, the cost would probably have been 30 per cent. higher. The total consumption of water per day is, roughly, 360,000,000 gallons. Maintenance costs about 3,500,000dols. annually. The cost per gallon varies widely in the several provinces. Nova Scotia has the lowest cost, about 7 cents a gallon, whilst Saskatchewan has the highest, about 23 cents. In New Brunswick water costs 8 cents, in Prince Edward Island 16, in Ontario and Quebec about 9½, in Alberta 13, and in Manitoba 20. A Parliamentary Committee is now sitting to consider the purity and efficiency of municipal water supplies.

WELSH WATER FOR BIRKENHEAD.—The members of the Birkenhead Town Council, together with the officials, paid their second official visit to the site of the corporation's waterworks at Pont-y-Alwen, in North Wales, yesterday (Thursday). Since their last visit, when the first stone was laid in the huge masonry dam, great progress has been made with its undertaking, which was prepared by the late Mr. G. F. Deacon. In January, 1911, the contract for the construction of the Alwen reservoir and the dam across the mouth of the valley was let to Messrs. Robert M'Alpine and Sons, of Westminster. The main feature of the scheme is the curved masonry dam. This, when finished, will be 90ft. in height above the bed of the river Alwen, and 458ft. in length. It will contain 40,000 cubic yards of concrete, faced on the up-stream side with smooth concrete blocks, and on the down-stream side with rock-faced concrete blocks. The trench for the foundations of the dam has been carried down to solid rock to a maximum depth of 53ft. below the river bed. About 6,300 acres will drain to a reservoir three miles long, with a maximum width of one-third of a mile, a capacity of about 3,000 million gallons, and a top-water area of 365 acres. Its formation necessitates the excavation of over a million cubic yards of peat, three-fourths of which has already been removed. The water will be conveyed to Birkenhead by a pipe-line forty-two miles in length. The River Dee is to be negotiated by a tunnel near Connah's Quay. Of the amount of the contract (£486,000) the sum of £96,465 has been paid to the contractors, while the total cost of the scheme so far is £281,611. This includes the cost of land and easements, the cost of obtaining the Act of Parliament—amounting to £16,000—compensation to various authorities, and payments to engineers and contractors.

WORCESTER.—The Worcester sewage works are not yet opened, and the Local Government Board have now entered into correspondence with the city council upon the matter. Worcester has spent about £100,000 on sewage schemes—about £90,000 on the original scheme for a tunnel under the Severn, and £10,000 on a deep-level sewer to convey the sewage to the works at Bromwich. At the meeting of the city council on Tuesday, the town-clerk said he had received a letter from the Local Government Board, stating that they had considered the report of their inspector, Mr. Hetherington. They understood the works were to have been put into operation on June 15 last; but that, because of a breakdown, the whole of the sewage was being discharged into the Severn without any treatment, and the defect had not been remedied at the date of the inspector's visit. The Board regretted to find there had been so much delay in dealing with the breakdown, and asked to be informed at once as to whether the works had been started. Alderman Whitehead (chairman of the water and sewerage committee) moved that the letter be referred to the committee. He said that the city engineer (Mr. Caink), who was away on holiday, had written stating the only thing preventing the restarting of the works was the roturbo pump. The alderman further said that correspondence had taken place between the city engineer, the contractors, and the firm supplying the pump. The motion was carried, the committee being given power to deal with the Board's letter.

Mr. Ralph Hedley, of Belle Grove-terrace, Leazes, Newcastle-upon-Tyne, artist and wood-carver, who died on June 14, has left £7,516 gross.

The urban district council of Ellesmere Port have received sanction from the Local Government Board to borrow £9,969 for a new road. Messrs. G. P. Trentham, of Birmingham, have obtained the contract.

An elementary school at Bridgend is being built from plans by Mr. D. Pugh Jones, F.S.I., M.S.A., county architect. The estimated cost is £10,600. The buildings will accommodate 256 boys, 256 girls, and 160 infants, and each section has its own assembly-hall.

The Great Northern Railway required just over five acres of land adjoining their main line a short distance north of Bawtry Station in Yorkshire for the construction of the Tickhill Light Railway. The owner claimed £6,932 as compensation, and the matter went to arbitration. Under the terms of the award, the owner is to receive £588, and he has not only to pay his own costs, but half the costs of the award.

A special visit to Stonehenge and Old Sarum will be made by members of the Royal Archæological Institute on Friday, September 26. The train leaves Waterloo for Salisbury at 10.50 a.m. (return ticket 10s.) and members proceed by motor-cars to Amesbury, Stonehenge, and Old Sarum, returning from Salisbury by train at 6.28. The remains will be described by the Rev. E. H. Goddard, M.A., Col. Hawley, F.S.A., and Mr. W. H. St. John Hope, Litt.D., D.C.L.

The destruction by fire of Killarney House, the residence of the Earl of Kenmare, with much of its valuable furniture and fittings, and many pictures, is greatly to be regretted. After the flames had been supposed to be extinguished on Sunday, they broke out afresh. The eastern wing, in which the chapel was situated, was the last to take fire, and the entire building, with the exception of the servants' quarters, which form a one-story wing at the west side, has been destroyed. We do not credit the assertion made by Press agencies that among the pictures destroyed were "some valuable paintings by Inigo Jones." The building of the house, which was Elizabethan in style, was begun in 1878, and completed in 1881.

The Earl of Selborne unveiled at Petersfield on Wednesday afternoon the restored equestrian statue of William the Third, which has for a century stood in the market-place of the old Hampshire town. The statue was first set up in 1757, in the courtyard of Petersfield House. In 1793 the house was demolished, and in 1812 the statue was moved to its present position. Three years ago, notice was taken of its dilapidated condition, and the work of renovation was entrusted by a committee, of which Mr. H. Inigo Triggs, A.R.I.B.A., was the hon. secretary, to Professor W. Robert Colton, A.R.A., who has readjusted the pose of the statue, and remodelled the parts that had perished.

Our Office Table.

Hearty congratulations to Mr. Deputy Joseph Douglass Mathews, F.R.I.B.A., F.S.I., district surveyor for Stoke Newington, and Mrs. Douglass Mathews, who celebrated on Wednesday in last week their golden wedding. They were married on August 27, 1863, at All Saints' Church, Northampton, by the Rev. Sydney Gedge, M.A., vicar, assisted by the Rev. W. Britten. The bride was Miss Sarah H. Law, eldest daughter of Mr. E. F. Law, J.P., Northampton. Mr. Douglass Mathews was born in Cloak lane, E.C., and began the practice of his profession in premises on the opposite side of that thoroughfare, until they were acquired for the extension of the District Railway, when he removed to his present offices in Dowgate-hill. Mr. and Mrs. Mathews have had nine children and nine grandchildren, all of whom are living. Mr. Douglass Mathews joined the Royal Institute of British Architects as an Associate in 1865, becoming a Fellow eleven years later; his eldest son and partner, Mr. Edmund J. Mathews, was elected a Fellow in 1906.

Mr. S. A. Reay, F.R.I.B.A., who will leave in Bristol as a memorial of his work the improvement and extension of the Royal West of England Fine Arts Academy, took up his appointment as assistant director of the architect's section of the barrack construction department of the War Office on Monday. Mr. Reay was nominated for the position by Mr. Reginald Blomfield, A.R.A., P.R.I.B.A., to whom the Army Council applied. Mr. Reay was associated for over twenty years with Mr. T. B. Silcock, of Milsom-street, Bath, the firm being known as Silcock and Reay, and the partnership was dissolved a little while ago.

On the results of the past three years' work the first diploma of the Aberdeen School of Architecture has recently been awarded to Mr. Morrison Hendry, on the recommendation of Mr. H. V. Lanchester, F.R.I.B.A., the assessor appointed by the Scotch Education Department to visit the school. Day classes in architecture came into existence in Aberdeen three years ago, when Mr. Harold Hughes, A.R.I.B.A., was appointed to the school, and students were enabled to receive instruction in preparation for the diploma. With the co-operation of the Aberdeen Society of Architects, a scheme was recently drawn up whereby students will spend their first two years at the school, followed by three years in an architect's office, continuing, during this latter period, their school work in evening classes. Work under this new arrangement began at the opening of the session on August 27.

Lady Stair's House, which was gifted by Lord Rosebery to the Edinburgh Corporation some time ago, has been prepared for its future function as an adjunct of the Corporation Museum, and the exhibits which have been transferred are now arranged. In the museum at the Council Chambers space was becoming somewhat limited. This transfer of certain articles will not only relieve the congestion, but will provide an interesting addition to the collection of the memorials of old Edinburgh. The articles in Lady Stair's House are mainly illustrative of the city and of the country generally as associated with Edinburgh. On the ground floor an interesting historical and archæological collection has been arranged. The next floor is devoted to the Sheriff Guy collection of engravings, of which there are about 800. In addition, several water-colours and pictures in oils are hung on the walls. Pictures from the writings of Sir Walter Scott are arranged in a room, and there is also a Burns room, with engravings illustrating several of the national bard's works. The Bruce Home collection of pictures of old Edinburgh occupies a place on the top flat. The building, with its contents, will soon be open for the inspection of visitors.

The Select Committee of Local Legisla

tion, in a special report issued on Monday, emphasise the suggestion that the time has arrived when an authority should be constituted to decide which roads should be the main roads of the country, and that the cost of maintenance should be taken off the rates and made a national charge. They also express the view that it is very desirable when a local authority whose powers in regard to police and sanitary matters are scattered over a number of local Acts comes to Parliament for further powers of the same description, that it should consolidate its previous legislation.

The good work the Liverpool civic authorities have accomplished in the direction of abolishing slums and rehousing the dispossessed—in most cases on the same sites as those originally occupied by the insanitary property—has attracted the attention of municipal housing reformers from all parts of the Continent and America. On Friday another party of Continental and Scotch municipal representatives made a tour of inspection through blocks of dwellings in the Burlington, Hornby, Bevington, Northumberland, and Grafton street areas. The visitors, who came to Liverpool under the auspices of the National Housing and Town-Planning Council, numbered twenty-seven, and included representatives from Russia, Germany, France, Italy, Poland, Scotland, and Warrington. Mr. Austin Harford, deputy chairman of the Liverpool Corporation Housing Committee, in the course of an address, said the corporation had been dealing with the problem of getting rid of the slums since 1864, when there were 22,000 insanitary houses in the city. There were now only 3,000 of such houses remaining. Up to 1898 the policy of the corporation was one of demolition only. In that year they turned their attention to rehousing the people, and since then had built close upon 3,000 dwellings. Of that number 2,300 were restricted to the persons dispossessed from the areas of insanitary property cleared away. The amount spent on the work up to the end of 1912 was £1,135,041.

The Birmingham City Council are applying to the Local Government Board for authority to prepare a town-planning scheme in relation to certain land in South Birmingham. The land involved in the scheme embraces an area of about 8,400 acres. It adjoins the North Yardley town-planning area on the north-east, is bounded on the south by the boundary of the city itself, on the north it practically follows the line of the old city, and on the west it approximately follows the line of Pershore-road. It comprises the valleys of the River Cole and the River Rea, and includes a considerable amount of railway and one or two public parks, notably Cannon Hill Park. The urgent necessity of town planning the area is more apparent, however, in the opinion of the committee, in those portions of it which lie close to Moseley, King's Heath, Showell Green, and Wake Green.

The *Times* correspondent in Paris throws doubts on the efficacy of the French laws for the protection of ancient monuments, which were so belauded while Lord Beauchamp's Bill was passing through both houses of Parliament. While undoubtedly the French law has been the means of preserving very many monuments, the administration of the law is, the correspondent says, far from satisfactory. The "classification" of a monument in too many cases fails to preserve it, the funds at the disposal of the Fine Arts Department being insufficient to ensure constant and direct inspection by agents of the Government. The condition of church monuments in the country districts is peculiarly unfortunate. By the law of 1908 the Communes became the owners of churches and their contents. Save in a few cases the Communes appear to be absolutely indifferent to the æsthetic or historical value of the fabrics entrusted to their care, and occasionally the village priest errs in this regard through ignorance. This goes to prove not that State protection is inadvisable, but that the more carefully devised legislation is useless unless there is a strong body of public opinion behind it. For the last few years in France Parliament has been urged, chiefly by M. Maurice Barrès, to pass a Bill strengthening the laws of 1887 by enforcing severe penalties upon Communes which neglect their duties as guardians of churches and of the monuments they contain, and this, if adopted, will doubtless have a beneficial effect.

A committee has been appointed by the council of the Archæological Institute of America to investigate and report on the plan of establishing an American school of archæology in China; its objects being: (1) To prosecute archæological research in Eastern Asia; (2) to afford opportunity and facilities for investigation in Asiatic archæology; and (3) to preserve objects of archæological and cultural interest in museums in the countries to which they pertain, in co operation with existing organisations for a kindred purpose, such as the China monuments Society, organised by Mr. Frederick McCormick in 1908 in Pekin.

At the fourth meeting of the International Photometrical Commission held in Berlin last week there were present 45 delegates representing institutions connected with gas and electric lighting and illumination in England, France, Germany, Italy, Austria, Switzerland, Belgium, Holland, and the United States of America. The President, M. Vautier, explained that the commission had been founded by the International Congress of Gas Industries, which took place in Paris in connection with the exhibition of 1900, its object being to study the methods to be employed in the photometry of incandescent gas-lights, and to organise investigations calculated to lead to a better knowledge of using gas to the best advantage. He gave the reasons for now enlarging its scope and constituting a new International Commission on illumination. After four days' careful consideration of the proposed statutes the commission was duly declared constituted. Its general object is to promote the study of all questions relating to the science and art of illumination, and to establish by appropriate means international agreement on all matters connected with illuminating engineering. Each country is to have only one vote and to contribute equally to the expenses of the central office. All countries interested in the subject of illumination have now an opportunity of forming national lighting committees and of sending delegates to participate in the deliberations of the commission. M. Vautier has been elected president of this International Commission, and Mr. C. C. Paterson, of the National Physical Laboratory, hon. secretary. London will thus become the official centre from which the business of the commission is transacted. The next session is to be held in Paris in 1916.

MEETINGS FOR THE ENSUING WEEK.

MONDAY.—Sanitary Inspectors' Association. Annual Conference at Llandudno

TUESDAY Royal Photographic Society. "An Ancient Order of Chivalry," by H. W. Fincham. Suffolk-street Gallery, Haymarket, S.W. 8.30 p.m.

WEDNESDAY Annual Meeting of British Association opens at Birmingham.

THURSDAY Royal Photographic Society. "The Parthenon of England," by E. W. Harvey Piper. Suffolk-street Gallery, Haymarket, S.W. 8.30 p.m.
Salon of Photography. "A Winter Tour through Italy and Sicily," by T. B. Blow, F.L.S. 5a, Pall Mall, East, S.W. 8 p.m.

SATURDAY (SEPT. 13) Junior Institution of Engineers. Visit to Works of R. Waygood and Co., Ltd., Falmouth-road, S.E. 10.30 a.m.

The Cannock Board of Guardians have appointed Mr. Arthur Worrall, L.R.I.B.A., of Queen's-chambers, North-street, Wolverhampton, as their architect.

At the meeting on Tuesday of the urban district council of Redditch, the surveyor was instructed to prepare quantities and advertise for tenders for the erection of twelve workmen's cottages on Beoley-road, this being part of a scheme already adopted by the council for the provision of thirty-six houses.

Trade News.

WAGES MOVEMENTS.

KIRKCALDY.—The contractors and builders of Kirkcaldy have agreed to increase the wages of navvy labourers by one halfpenny per hour over all the district, making a uniform rate of 6½d. per hour. The advance took effect on Saturday.

LONDON.—The London painters balloted this week on a proposal of 20 to 1 to reject the masters' offers. The men's demands are for an increase of 1½d. an hour and recognition of their union and of their code of working rules. The compromise suggested by the masters on which the men voted was a penny an hour increase and the reference of the other questions, including the extra halfpenny, to arbitration. Any reasonable men would have accepted this. On Tuesday Lord Beauchamp, First Commissioner of Works, informed the Building Industries Federation that, having regard to the terms of the two votes recently of the House of Commons, he would not be justified in acceding to the request of the federation that non-unionist workers should be dismissed.

UDDINGSTON.—Mr. James Burns, town clerk, Motherwell, who was appointed arbiter in the dispute between the operative Uddingston joiners and their employers, has issued his award. The claim of the men was that an immediate advance in wages of ½d. per hour be given, while the masters contended that consideration of the question should be deferred until it arose automatically under the working rules and regulations of the Clydesdale district in February, 1914. Mr. Burns decided that the question of an increase in wages must be deferred until February 1, 1914, under Rule 11 of the rules and working regulations between the Clydesdale District Master Wrights' Association and the operative joiners in the Clydesdale district. The master wrights in Uddingston, before this claim was made, had joined the Clydesdale District Master Wrights Association, and are therefore bound by its rules and working regulations.

The death is recorded of Mr. R. Davidson, who was many years ago borough surveyor of Sheffield.

A Local Government Board inquiry will be held at Loughborough, Leicestershire, on Tuesday next, into an application of the corporation for sanction to a loan of £5,325 for widening and improving New-street, and for the construction of a new street from Church Gate to Rectory-place, including the widening of Rectory-place.

A new choir school, in connection with Westminster Abbey, is in course of erection in Dean's-yard. The architect is the resident surveyor to the Abbey, Mr. Arthur G. Wallace, and the general contractors are Holliday and Greenwood, Ltd. Workshops for the Abbey staff will be included in the building. The cost is estimated to be £20,000.

For the construction of a dry dock at St. Joseph de Levis, near Quebec, the tender of Messrs. M. P. and J. T. Davis, of Quebec, has been accepted by the Dominion Government. Mr. A. E. Hoare will superintend the execution of the work. The site consists of solid rock, which will be removed by blasting for a depth of 61ft., a width of 60ft., and a length of 1,200ft.

At the last meeting of the town improvement and streets committee of Newcastle Corporation, it was reported that this time last year there were 1,061 empty houses, now there were only 665, being 996 fewer than the previous year. The reason attributed to the decreased number of empty houses was the prosperity of trade, and few buildings having been erected during the twelve months.

The Mayoress of Wimbledon, on Saturday afternoon, formally opened an open-air swimming-bath which has been constructed in Wandle Park, one of the corporation's recreation-grounds, situated in the midst of a thickly-populated district of low-rated houses. The bath has been so constructed as to permit of it being used for mixed bathing, if that should be considered advisable.

In the course of installing new lightning-conductors on St. Paul's Cathedral, Messrs. J. W. Gray, Leadenhall-street, have discovered part of one of the original iron-bar conductors fixed over 140 years ago, under the supervision of Benjamin Franklin, the inventor of the lightning-conductor. The bar was in a good state of preservation, as it had been inside a tower, and, consequently, not exposed to the weather.

LATEST PRICES.

IRON.

Steel Joists, Belgian and German (ex steamer, London)	per ton	£6	2	6	to	£6	5	0
Steel Joists, English		7	10	0	,,	7	12	6
Wrought-Iron Girder Plates		7	0	0	,,	7	5	0
Steel Girder Plates		7	2	6	,,	8	2	6
Bar Iron, good Staffs		6	5	0	,,	8	10	0
Do., Lowmoor, Flat, Round, or Square		20	0	0	,,	0	0	0
Do., Welsh		5	15	0	,,	5	17	0
Boiler Plates, Iron—								
South Staffs		8	0	0	,,	8	15	0
Best Snedshill		9	0	0	,,	9	10	0

Angles 10s., Tees 20s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £8 15s to £9.
Ditto galvanised, £14 to £15 10s. per ton.

Galvanised Corrugated Sheet Iron—

	No. 18 to 20.	No. 22 to 24
6ft. to 8ft. long, inclusive	Per ton.	Per ton.
gauge	£13 0 0	£13 10 0
Best ditto	13 0 0	14 0 0

Wire Nails (Points de Paris)—

3 to 7	8	9	10	11	12	13	14	15	B.W.G.
8/3	8/9	9/3	9/9	10/3	11/-	11/9	12/6	13/6	per cwt.

	Per ton.				Per ton.		
Cast-Iron Columns	£7	10	0	to	£9	0	0
Cast Iron Stanchions	7	10	0	,,	9	0	0
Rolled-Iron Fencing Wire	8	5	0	,,	8	10	0
Rolled-Steel Fencing Wire	7	5	0	,,	7	10	0
,, ,, ,, Galvanised	8	15	0	,,	9	5	0
Cast Iron Sash Weights	5	0	0	,,	5	5	0
Cut Floor Brads	9	15	0	,,		—	
Corrugated Iron, 24 gauge	16	0	0	,,		—	
Galvanised Wire Strand, 7 ply, 14 B.W.G.	14	5	0	,,		—	

B.B. Drawn Telegraph Wire, Galvanised—

0 to 8	9	10	11	12	B.W.G.
£10 10s.	£10 15s.	£11 0s.	£11 5s.	£11 15s.	per ton.

Cast-Iron Socket Pipes—							
3in. diameter	£6	2	6	to	£6	7	0
4in. to 6in.	6	0	0	,,	6	5	0
7in. to 24in. (all sizes)	5	7	6	,,	6	0	0

[Coated with composition, 5s. 0d. per ton extra, turned and bored joints, 5s. 0d. per ton extra.]

Pig Iron—	Per ton.			
Cold Blast, Lilleshall	110s. 0d.	to	117s. 6d.	
Hot Blast, ditto	70s. 0d.	,,	75s. 0d.	

Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—

Gas-Tubes	75 p.c.
Water-Tubes	72½ ,,
Steam-Tubes	67½ ,,
Galvanised Gas-Tubes	65 ,,
Galvanised Water-Tubes	62½ ,,
Galvanised Steam-Tubes	57½ ,,

OTHER METALS.

Spelter, Silesian	Per ton	£21	1	3	to	£21	3	9
Lead Water Pipe, Town		25	0	0	,,		—	
,, ,, ,, Country		25	15	0	,,		—	
Lead Barrel Pipe, Town		26	0	0	,,		—	
,, ,, ,, Country		26	15	0	,,		—	
Lead Pipe, Tinned inside, Town		27	0	0	,,		—	
,, ,, ,, ,, Country		27	15	0	,,		—	
Lead Pipe, Tinned inside and outside Town		29	10	0	,,		—	
,, ,, ,, ,, Country		30	5	0	,,		—	
Composition Gas-Pipe, Town		28	0	0	,,		—	
,, ,, Country		28	15	0	,,		—	
Lead Soil-pipe (up to 4½in.) Town		28	0	0	,,		—	
,, ,, ,, Country		28	15	0	,,		—	

[Over 4½in. £1 per ton extra.]

Lead Shot, in 28lb. bags		24	15	0	,,		—	
Copper Sheets, sheathing & rods		86	0	0	,,	86	10	0
Copper, British Cake and Ingot		75	10	0	,,	76	0	0
Tin, English Ingots		201	10	0	,,	202	0	0
Do., Bars		202	10	0	,,	203	0	0
Pig Lead, in 1cwt. pigs (Town)		22	0	0	,,		—	
Sheet Lead, Town		24	10	0	,,		—	
,, ,, Country		25	5	0	,,		—	
Genuine White Lead		30	15	0	,,		—	
Refined Red Lead		25	10	0	,,		—	
Sheet Zinc		29	0	0	,,		—	
Old Lead, against account		19	10	0	,,		—	
Tin	per cwt.	11	0	0	,,		—	
Cut nails (per cwt. basis, ordinary brand		0	11	6	,,		—	

TIMBER.

CONSTRUCTIONAL.

Yellow Pine Deals, Quebec, per standard:—								
1st quality		£38	0	0	to	£45	0	0
,, ,, ,, 2nd ,,		26	0	0	,,	32	0	0
,, ,, ,, 3rd ,,		16	0	0	,,	18	10	0
Spruce Deals: St. Johns		10	0	0	,,	11	10	0
,, ,, Miramichi		9	10	0	,,	10	10	0
,, Boards: Swag		11	0	0	,,	12	0	0
Red Deals: rchangel 1st quality		21	0	0	,,	24	0	0
,, ,, ,, 2nd ,,		16	0	0	,,	19	0	0
,, ,, ,, 3rd ,,		12	0	0	,,	14	0	0
,, ,, St. Petersburg—								
,, ,, ,, 1st quality		16	10	0	,,	18	0	0
,, ,, ,, 2nd ,,		14	10	0	,,	15	10	0
,, ,, Wyburg & Uleaborg		12	10	0	,,	15	0	0
,, Gefle, Gothenburg, and Stockholm		12	10	0	,,	17	0	0
White Deals: Crown		14	0	0	,,	15	10	0
,, ,, Seconds		11	10	0	,,	13	0	0
Flooring: White and Planed—1st and 2nd quality mixed		10	15	0	,,	11	15	0
1st, 2nd, & 3rd quality mixed		10	5	0	,,	11	0	0
Red Planed, 1st quality		14	10	0	,,	17	0	0
Pitch Pine: Prime Deals and Boards		18	0	0	,,	23	0	0
Lignum Vitæ	Per ton	7	0	0	,,	14	0	0

	Per cubic foot.						
Yellow Pine Logs (waney board)	0	5	0	,,	0	5	6
Pitch Pine Logs	0	2	0	,,	0	2	6
Birch: Quebec Logs	0	2	3	,,	0	2	9
Oak: Austrian Wainscot	0	7	0	,,	0	8	0
Mahogany: Gaboon	0	2	0	,,	0	2	3

FURNITURE AND HARDWOODS.

Teak: Burmese, per load, 50ft.		£20	0	0	to	£25	0	0
Teak: Java, per load, 50ft.		16	0	0	,,	21	0	0
		Per cubic foot.						
Oak Planks: U.S.A., imported		0	1	9	to	0	2	6
,, Boards ,, ,, Prm.		0	3	0	,,	0	3	6
,, ,, ,, ,, Mdm.		0	2	6	,,	0	2	9
Sequoia (Californian Redwood)		0	2	4	,,	0	3	6
Birch: Quebec logs		0	2	3	,,	0	2	9
,, ,, sawn planks		0	1	3	,,	0	2	0
Oak: Austrian Wainscot		0	7	0	,,	0	8	0
Walnut: Prime boards and planks		0	6	0	,,	0	6	6
Walnut: Mdm. ,, ,,		0	3	6	,,	0	4	6
Greenheart: Hewn logs		0	3	3	,,	0	4	0
Cedar: Cigar box		0	4	9	,,	0	5	6
Satin Walnut: Imp. sawn boards, prime		0	2	4	,,	0	2	9
Orham: Imp. sawn boards, prime		0	2	0	,,	0	2	3
Mahogany: St. Domingo, Cuba, and Honduras		0	6	0	,,	0	9	0
,, African, Assinee, &c.		0	5	0	,,	0	6	6
,, Lagos and Benin		0	4	6	,,	0	6	0
,, Sekond'i and Cape Lopez		0	3	0	,,	0	4	0
,, Gaboon		0	2	0	,,	0	2	3
Satinwood: West Indian		0	10	0	,,	0	14	0
Rosewood	Per ton	8	0	0	,,	12	0	0
Lignum Vitæ	,,	7	0	0	,,	14	0	0

STONE.*

Red Mansfield, in blocks	per foot cube	£0	2	4				
Darley Dale, ditto	,,	0	2	3				
Red Corsehill, ditto	,,	0	2	9				
Closeburn Red Freestone, ditto	,,	0	2	0				
Ancaster, ditto	,,	0	1	10				
Greenshill, ditto	,,	0	1	1				
Chilmark, ditto (in truck at Nine Elms)	,,	0	1	10½				
Hard York, ditto	,,	0	2	0				
Ditto ditto 6in. sawn both sides, landings, random sizes	per foot sup.	0	2	8				
Ditto ditto 3in. slab sawn two sides, random sizes	,,		1	3				

* All F.O.R. London.

Bath Stone, delivered on road waggons, Paddington Depot	per foot cube	0	1	7½
Ditto, ditto, Nine Elms Depot	,,	0	1	9½
Beer Stone, delivered on rail at Seaton Station	,,	0	1	0
Ditto, delivered at Nine Elms Station	,,	0	1	6

Portland Stone, in random blocks of 20ft. average:—

	Brown Whit Bed.	White Base Bed
	Per foot cube.	
Delivered on road waggons at Paddington Depot, Nine Elms Depot, or Pimlico Wharf	... £0 2 3	... £0 2

SLATES.

	in.	in.	£	s.	d.	per 1,000 of
Blue Portmadoc	20	× 10	12	12	6	1,200 at r.stn.
,, ,,	16	× 8	6	12	6	,, ,,
Blue Bangor	20	× 10	13	2	6	,, ,,
,, ,,	20	× 12	13	17	6	,, ,,
First quality	20	× 10	13	0	0	,, ,,
,, ,,	20	× 12	13	15	0	,, ,,
,, ,,	16	× 8	7	5	0	,, ,,
Eureka unfading green	20	× 10	15	17	6	,, ,,
,, ,,	20	× 12	18	7	6	,, ,,
,, ,,	18	× 10	13	5	0	,, ,,
,, ,,	16	× 8	10	5	0	,, ,,
Permanent green	20	× 10	11	12	6	,, ,,
,, ,,	18	× 10	9	13	6	,, ,,
,, ,,	16	× 8	6	12	6	,, ,,

BRICKS.

(All prices net.)

First Hard Stocks	£1	15	0	per 1,000	alongside, in	
Second Hard Stocks	1	11	0	,,	,,	river.
Mild Stocks	1	9	0	,,	,,	,,
Picked Stocks for Facings	2	5	0	,,	livered at rly. stn.	
Flettons	1	10	0	,,	,,	,,
Pressed Wire Cuts	1	18	0	,,	,,	,,
Red Wire Cuts	1	14	0	,,	,,	,,
Best Fareham Red	3	12	0		,,	,,
Best Red Pressed Ruabon Facing	5	0	0	,,	,,	,,
Best Blue Pressed Staffordshire	3	15	0	,,	,,	,,
Ditto Bullnose	4	0	0	,,	,,	,,
Best Stourbridge Firebricks	3	14	0	,,	,,	,,
2½in. Best Red Accrington Plastic Facing Bricks	4	10	6	,,	Net, delivered in full truck loads in London.	

" Accrington Best Red Plastic Facing Bricks per 1,000

	£2	10	0
3⅜" ditto Second Best Plastic ditto	2	2	6
Ditto Ordinary Second Bricks	1	11	3
Ditto Plastic Engineering Bricks	1	17	6
Sewer Arch Brick not more than 3⅜" in thickest part	2	0	0
3⅜" Chimney Bricks fit for outside work	2	6	0
3⅜" ditto ditto through and through	2	0	0
3⅜" Beaded, Ovolo and Bevel Jambs; Octagons; 2¼" and ½" radius Bullnoses; Stock patterns	3	7	6
Accrington Air Bricks, 9" × 2 course deep, each	0	0	6
Ditto ditto 9" × 1 course ,,	0	0	3

Accrington Camber Arches:—

3 course deep, 4½" soffit, per foot opening							0	1	3
4	ditto	4½"	ditto	ditto	ditto	...	0	1	8
5	ditto	4½"	ditto	ditto	ditto	...	0	2	1
6	ditto	4½"	ditto	ditto	ditto	...	0	2	6
3	ditto	9"	ditto	ditto	ditto	...	0	2	1
4	ditto	9"	ditto	ditto	ditto	...	0	2	11
5	ditto	9"	ditto	ditto	ditto	...	0	3	9
6	ditto	9"	ditto	ditto	ditto	...	0	4	6

Net free on rail or free on boat at works.

GLAZED BRICKS.

HARD GLAZES, (PER 1,000.)

	White, Ivory, and Salt Glazed. Best.	Buff, Cream, & Bronze. Seconds.	Other Colours. Best.	Second Colours.
Stretchers—	£12 7 6	£10 17 6	£13 17 6	£17 17 6	£12 7 6
Headers—	11 17 6	10 7 6	13 7 6	17 7 6	11 17 6
Quoins, Bullnose, and 4½in. Flats—	15 17 6	14 17 6	17 17 6	21 7 6	15 17 6
Double Stretchers—	17 17 6	16 7 6	20 17 6	24 7 6	17 17 6
Double Headers—	14 17 6	13 7 6	17 17 6	21 7 6	14 17 6
One side and two ends, square—	18 17 6	17 7 6	21 17 6	26 7 6	18 17 6
Two sides and one end, square—	19 17 6	18 7 6	22 17 6	26 17 6	19 17 6
Splays and Squints—	17 7 6	15 17 6	21 17 6	24 17 6	17 7

Plinth and Hollow Bricks. Stretchers and Headers—	5d. each	4d. each	6d. each	6d. each	5d. each
Double Bullnose, Round Ends, Bullnose Stops—	5d. each	4d. each	6d. each	6d. each	5d. each
Rounded Internal Angles—	4d. each	3d. each	5d. each	5d. each	4d. each

MOULDED BRICKS.

Stretchers and Headers—	8d. each	8d. each	8d. each	8d. each
Internal and External Angles—	1/2 each	1/2 each	1/2 each	1/2 each	1/2 each
Cill Bullnose, Stretchers and Headers—	5d. each	4d. each	6d. each	6d. each	5d. each
Majolica or Soft Glazed Stretchers and Headers					Per 1,000 £22 17 6
,, ,, Quoins and Bullnose					27 17 6

Compass bricks, circular and arch bricks of single radius £6 per 1,000 over above list for their respective kinds and colours } Not exceeding 9in.
Camber arch bricks, any kind or colour, 1s. 2d. each } by 4½in. by 2½in.

Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.

* These prices are carriage paid in full truck loads to London Stations.

	s.	d.	
Thames Sand	7	6	per yard, delivered
Pit Sand	7	0	,, ,,
Thames Ballast	6	0	,, ,,

	s.	d.			Per ton, delivered.
Best Portland Cement	36	0	to	41	0
Ground Blue Lias Lime	21	0	per ton delivered.		

Exclusive of charge for sacks.

	s.	d.		s.	d.	Per yard,
Grey Stone Lime	13	6	to	14	0	delivered

Stourbridge Fireclay in sacks 27s. 0d. per ton at railway station.

TILES.

	s.	d.	Divrd. at
Plain red roofing tiles	42	0	per 1000 ry. stn.
Hip and Valley tiles	3	7	per doz. ,, ,,
Broseley tiles	50	0	per 1000 ,, ,,
Ornamental tiles	52	6	,, ,, ,,
Hip and Valley tiles	4	0	per doz. ,, ,,
Ruabon red, brown, or brindled	57	6	per 1000 ,, ,,
do. (Edwards)	60	0	,, ,, ,,
Ornamental do.	4	0	per doz. ,, ,,
Hip tiles	3	0	,, ,, ,,
Valley tiles			
Selected "Perfecta" roofing tiles:—Plain tiles (Peake's)	46	0	per 1000 ,, ,,
Ornamental do.	48	6	,, ,, ,,
Hip tiles	3	10½	per doz. ,, ,,
Valley tiles	3	4½	,, ,, ,,
"Rosemary" brand plain tiles	48	0	per 1000 ,, ,,
Ornamental tiles	50	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	8	,, ,, ,,
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 ,, ,,
Hand-made sand-faced	45	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	6	,, ,, ,,
Hartshill" brand plain tiles, sand-faced	50	0	per 1000 ,, ,,
Pressed	47	6	,, ,, ,,
Ornamental do.	50	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
alley tiles	3	6	,, ,,

OILS.

Rapeseed, English pale,	per tun	£38	15	0	to	£39	5	0
Do., brown	,, ...	26	15	0	,,	27	5	0
Cottonseed, refined	,, ...	29	0	0	,,	30	0	0
Olive, Spanish	,, ...	39	10	0	,,	40	0	0
Seal, pale	,, ...	21	0	0	,,	21	10	0
Cocoanut, Cochin	,, ...	46	0	0	,,	46	10	0
Do., Ceylon	,, ...	42	10	0	,,	43	0	0
Do., Mauritius	,, ...	42	10	0	,,	43	0	0
Palm, Lagos	,, ...	32	5	0	,,	33	5	0
Do. Nut Kernel	,, ...	35	0	0	,,	35	10	0
Oleine	,, ...	17	5	0	,,	19	5	0
Sperm	,, ...	30	0	0	,,	31	0	0
Lubricating U.S.	per gal	0	7	0	,,	0	8	0
Petroleum refined	,, ...	0	0	6½	,,	0	0	6½
Tar, Stockholm	per barrel	1	6	0	,,	1	10	0
Do., Archangel	,, ...	0	19	6	,,	1	0	0
Linseed Oil	per gal.	0	2	5	,,		—	
Baltic Oil	,, ...	0	2	8	,,		—	
Turpentine	,, ...	0	2	7½	,,		—	
Putty (Genuine Linseed Oil)	per cwt.	0	9	0	,,		—	
Pure Linseed Oil "Stority" Brand	,,	0	10	0	,,		—	

GLASS (IN CRATES).

	15oz.	21oz.	26oz.	32oz
English Sheet Glass: Fourths	2d. ...	3d. ...	3½d. ...	4½d.
Thirds	2½d. ...	3½d. ...	4½d. ...	5½d.
Fluted Sheet	2½d. ...	3½d. ...	6½d. ...	7d.
Hartley's English Rolled Plate:	⅛in.	3/16in.	¼in.	
	2½d. ...	2½d. ...	3d.	
Figured Rolled and Repoussine	White. 3½d. ...	Tinted 5d.		

TRADE NOTES.

Under the direction of Messrs. Edward Snewin and Son, surveyors, Worthing, the Boyle system of ventilation (natural), embracing Boyle's latest patent "air-pump" ventilators and air-inlets, has been applied to Broadwater School, Worthing.

Tenders are being considered by Glasgow Corporation for the erection of a large hospital at Robroyston at an estimated cost of £60,000.

The death is announced of Mr. F. Rudully, clerk of works at the Notts County Lunatic Asylum. He has been a member of the Clerks of Works Association since 1903.

A receiving order has been made in the case of Henry St. John Dix, lately carrying on business under the style or firm of Pethick, Dix, and Co., at Victoria-street, Westminster, Buccleuch House, Richmond, Surrey, and London-wall, contractor.

Orange-street Congregational Church, in Leicester-square — the oldest Nonconformist church in Westminster, is about to be demolished and reconstructed, at a cost of £5,000. The last services in the present building were held on Sunday. It was erected by the Huguenots 220 years ago.

After sailing up the River Hull on Saturday night in a motor houseboat, with a son and brother, whom he met in Hull, Mr. William Raymond Swinburne, master carpenter, of Grimsby, fell overboard whilst attempting to land at Weel Ferry, near Beverley, and was drowned. He was 43 years of age.

Lord Burnham, who recently offered to the urban district council at Beaconsfield a free gift of land upon which to erect workmen's dwellings, has waived the purchase price of £100 per acre of adjoining land in order to facilitate the Council's housing scheme. His offer has been accepted with thanks by the council.

John Munday, engineer-in-charge of the boring operations in connection with the Berwick new joint water scheme, received severe internal injuries on Friday, while unloosening a part of the machinery, owing to a lever slipping and striking him on the abdomen. After being medically examined, he was removed to Berwick Infirmary.

At Tuesday's sitting of the Trade Union Congress, held in Milson Hall, Manchester, the following motion, brought forward by the Agricultural Labourers Union, was adopted: "That this Congress instructs the Parliamentary Committee to consider the question of security of tenure in regard to rural labourers' cottages, and to take any action they may deem advisable."

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TENDERS.

*** Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

BLANDFORD.—For the erection of ten cottages in St. Leonard's-avenue, for the Blandford Housing Association. Messrs. G. Hunt and Sons, Blandford, architects:—

Elcock	£3,269 0 0
Spiller	3,163 0 0
Norman and Sons	3,003 0 0
Jones and Seward	2,860 0 0
Wilson Bros.	2,760 0 0
Burt and Vick	2,700 0 0
Jones and Sons	2,620 0 0
Francis	2,455 0 0
Guppy and Sons	2,362 0 0
Burden Bros.	2,132 0 0
Penny	2,100 0 0
Bascombe, Broadstone (accepted)	2,000 0 0

HARWICH.—For the supply of pumps in connection with the electrification of the sewage pumping station, for the town council:—

Rees-Roturbo Co. (accepted)	£1,698 0 0

HAMPDEN PARK.—For erection of a new Presbyterian church at Hampden Park:—
Martin, M., and Son, Eastbourne (accepted).

HOYLAND.—For alterations at Hoyland Common school for girls, for the education committee:—

Roper and Sons, Sheffield (Accepted.)	£830 0 0

KEIGHLEY.—For the supply of a Bennis stoker to one of the Lancashire boilers at the electricity works, for the town council:—

Bennis E., and Co., Ltd., Bolton (Accepted.)	£430 0 0

KETTERING.—For installation of a disinfector boiler, for the urban district council:—

Manlove, Alliott, and Co. (Accepted.)	£447 6 6

LINCOLN.—For erection of a laundry at the workhouse, for the guardians:—

Close, H. S. (accepted)	£1,563 11 0

LONGROUGHTON.—For the erection of two semi-detached dwelling houses at Longhoughton. Mr. M. T. Wilson, 41, Narrowgate, Alnwick, architect. Accepted tenders:—

Mason—	
Downey, W., Alnwick	£254 10 0
Joiner—	
Murray, G., Lesbury	167 0 0
Slaters and Plasterers:—	
Purdie, 18, Duke-street, Alnwick	91 9 8
Plumbers:—	
Wilkin and Co, Bondgate Without, Alnwick	59 2 6

LYDD.—For the construction in clay of a sea-wall about 927 yards in length across the Holmstone Beach at Lydd, Kent, to connect the existing sea-walls in the Brooks and Wick, for the Commissioners of Sewers for the Level of Denge Marsh and Southbrooks:—

Catley, A. T., Lloyd-square, W.C.	£2,200 0 0
Brann, G., Sussex	2,100 0 0
Paine, T. W., Lydd	1,995 0 0
Shelbourne, J., and Co., Mark-lane, E.C.	1,738 0 0
Baker, F., Lydd (accepted)	1,609 0 0
Eastern Half.	
Pope, H., Lydd, Kent	874 10 0
Western Half.	
Baker, F.	775 0 0

MAAM.—For the erection of a steel bridge at Maam, Connemara, for the Oughterard Rural District Council:—

Manisty & Co., Dundalk Ironworks (Accepted.)	£890 0 0

MERSHAM.—For the execution of repairs at the Mersham Council School, for the Kent Education Committee:—

Gwinnett, T. S., Ashford	£176 18 0
Master, H. Ashford	150 17 9
Howland, J., and Son, Mersham	149 4 0
Shippam, W., Ashford (accepted)	144 0 0

NAAS.—For improvements at the Christian Brothers' School. Mr. Hall, Naas, town surveyor:—

Warren, E. W.	£367 0 0
Dawling, T.	312 18 0
Corcoran, D. Naas (accepted)	295 10 0
Lendrum, E.	294 0 0
Doyle, P.	293 0 0

NEWSHAM.—For additions and alterations to the New Delaval and Newsham Co-operative Society's premises in Elliott-street, Newsham. Mr. R. H. Hogg, 21, Winship-street, Newsham, architect:—

Murray, J. W., Hunter-avenue	£725 0 0
Cook Brothers, Cowpen Quay	713 0 0
Tebbles, J. W., Goshen-street*	710 0 0
(Architect's estimate, £700.)	
* Accepted. All of Blyth.	

NUNEATON.—For the erection of a bridge, for the corporation:—

Richards, Leicester (accepted)	£184 0 0

ORPINGTON.—For the execution of repairs at the Orpington Wellington-road council school, for the Kent Education Committee:—

Large, R., Orpington	£386 0 0
Hayward	343 10 0
Knight, T., Sidcup	291 10 0
Peaster and Son	289 0 0
Glassup, H., Orpington	280 0 0
Taylor, W. R., Orpington	267 0 0
Knight, F., Sidcup (accepted)	257 0 0

PORTSMOUTH.—For erection of the mission churches of St. Saviour, at Stamshaw, Portsmouth, and the Ascension, Stubbington-avenue, Portsmouth, for the vicar of the parish of St. Mark's. Mr. A. E. Cogswell, Prudential Buildings, Portsmouth, architect:—

Church of the Ascension:—	
Payne, Portsmouth	£6,351 0 0
Porter, Landport	6,150 0 0
Gregory, Emsworth	5,936 0 0
Sprigings, E. and A., Stamshaw	5,917 0 0
Wakeham Bros., Plymouth and Portsmouth	5,691 0 9
Jay and Co., Landport	5,650 0 0
Crockerell, Southsea	5,610 0 0
Jones, H., and Son, Southsea	5,600 0 0
Croad, Portsea	5,589 0 0
Privett, S. J., Southsea and Haslemere	5,557 0 0
Salter, S., Southsea (accepted)	5,487 0 0
Church of St. Saviour:—	
Porter	5,523 0 0
Payne	5,400 0 0
Crockerell	5,346 0 0
Jay and Co.	5,200 0 0
Sprigings, E. and A.	5,277 0 0
Wakeham Bros.	5,159 0 0
Privett, F. J.	5,087 0 0
Croad	5,040 0 0
Jones, H., and Son	4,900 0 0
Salter, S. (accepted)	4,897 0 0

PENYGRAIG.—For the erection of a church at Penygraig, for the Rev. D. H. Simon and Building Committee. Messrs. A. O. Evans, Williams, and Evans, Pontypridd, archts:—

Lloyd and Niblett, Cardiff	£3,200 0 0
Davies, D., and Sons, Cardiff	2,990 0 0
Jones Bros. Treharris	2,896 0 0
Jenkins, C., and Son, Porth	2,845 0 0
Cox, W., Llandaff	2,787 0 0
Knox and Wells, Cardiff (accepted)	2,477 0 0
Julian, A. W. Pontypridd	2,388 0 0

RUGBY.—For extensions to the electric-lighting installation at the central store premises, Chapel-street, for the Rugby Co-operative Society, Ltd.:—

Linnell and Son, Ltd., Rugby	£164 15 0
Marsh, S. P., Rugby	160 0 0
Lee, A. E., A.I.E.E., Hackney-street, Rugby (accepted)	144 10 0

SILLOTH.—For sea wall, including groynes, for the Holme Cultram Urban District Council:—

Dolloughan and Mulcaster	£3,293 2 9
Brebner, R. C., and Co.	2,842 13 5
Pearce, J. W., and Co.	2,734 3 3
Moffat, J.	2,270 13 0
Consideration of tenders postponed.	

SOUTHSEA.—For shops in Elm Grove, Southsea. Mr. A. E. Cogswell, Prudential Buildings, Portsmouth, architect:—

Croad, Portsea	£1,096 0 0
Light, W. R., and Sons, Landport	1,031 0 0
Salter, S., York-street	1,027 0 0
Crockerell, Victoria-road North	991 0 0
Tanner, J., Castle-road	961 0 0
Davis, G., Cottage Grove	877 10 0
Privett, F. J., Southsea and Haslemere	869 0 0
Jones, H., and Son, Broad-street*	843 0 0
* Accepted. Rest of Southsea.	

STOKE ASH.—For the erection of council school for the East Suffolk Education Committee:—

Kenny, G. A., Ipswich (accepted)	£808 0 0

STRATFORD.—For sewer construction, for the urban district council:—

Naylor, N., & Sons accepted	£340 0 6

WALLSEND-ON-TYNE.—For the conversion of Fowler closets, for the town council:—

Wetherall, J. W., (accepted)	£242 0 0

YAXLEY, HUNTS.—For rebuilding a house and shop recently destroyed by fire, for Mr. G. W. Beeton:—
Crane, J., Peterborough (accepted).
(Lowest of five tenders received.)

TO CORRESPONDENTS.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

It is particularly requested that all drawings and all communications respecting illustrations or literary matter, books for review, etc., should be addressed to the EDITOR of the BUILDING NEWS, Effingham House, 1, Arundel-street, Strand, W.C., and not to members of the staff by name. Delay is not infrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

*** Drawings of selected competition designs, important public and private buildings, details of old and new work, and good sketches are always welcome, and for such no charge is made for insertion. Of more commonplace subjects—small churches, chapels, houses, etc.—we have usually far more sent than we can insert, but are glad to do so when space permits on mutually advantageous terms, which may be ascertained on application.

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A. Z.—Yes.

F. R. S.—Thanks, no.

B. G. F.—Please send. 2. We are not sure, but will reply later direct.

FLAXLEY.—The Fitzwilliam Museum, Cambridge, was begun by G. Basevi in 1837, and completed by Cockerell some years later.

C.—We are not sorry to hear it. If "architects" will respond to competitions of the sort they well deserve any scurvy treatment they get.

LINDWICK.—A series of articles on "Theatres," by Ernest A. E. Woodrow, A.R.I.B.A., appeared in the BUILDING NEWS, for July 15 and 29, Aug. 5, 12, and 19, September 2, 16, 23, and 30, October 21 and 28, November 18, December 29 and 30, 1892 (Vol. LXIV.); January 27, February 10, March 10 and 24, April 14, May 26 and June 23 (Vol. LXV.); July 14, August 1 and 18, September 8, 22, and 29, November 10, December 1 and 29, 1893 (Vol. LXVI.); January 19 and 26, February 23, March 23, April 20, May 18 (Vol. LXVII.); July 13, 20, and 27, August 24, September 28, October 26, November 9 and 23, and December 7 and 28, 1894 (Vol. LXVIII.). All the issues have long since been out of print, but a few bound volumes are still in stock. At an earlier period, Mr. James George Buckle contributed to our pages a course of papers on "Theatre Construction and Maintenance," which are also out of print. Both series were republished by the authors in book form.

LIST OF COMPETITIONS OPEN.

Sept.	22—Working Class Houses, Cleator Moor	£5 5s. (merged in commission)	H. Rothery, Clerk, Cleator Moor.
Oct.	6—Front for Cigar Shop, Piccadilly. Henry Tanner, F.R.I.B.A., 12, Regent-street, W., Assessor	£50	Martins, Ltd., 25 Cheapside, E.C.
,,	1—Houses and Planning, York	£100, £50, £25	F. W. Spurr, City Engineer, Guildhall, York.
Nov.	1—Royal Palace, Sofia, Bulgaria		Section d'Architecture au Ministere des Travaux Publics, Sofia.
,,	1 Law Courts, Sofia, Bulgaria		Section d'Architecture au Ministere des Travaux Publics, Sofia.
,,	18 Destructor, Schaerbeek-lez-Bruxelles		Service de l'Ingenieur, 30, Rue de la Roche, Brussels.
,,	29—Band Pavilion, West Cliff, Folkestone (limit of cost £20,000). (Edwin T. Hall, F.R.I.B.A., 34, Bedford-square, W.C., Assessor)		A. F. Kidson, Town Clerk, Folkestone.
Dec.	29—New Offices for Board of Trade, &c., Whitehall Gardens, S.W. R. Blomfield, M.A. (Oxon), A.R.A., P.R.I.B.A. J. Belcher, R.A., and Sir Aston Webb, C.V.O., C.B., R.A., Assessors] Sketch Designs, ten will be Selected,		
1914.	with £300 Honorarium each		The Secretary, H.M. Office of Works, Storey's Gate, S.W.
Jan.	2—Manchester Royal Exchange Additional New Buildings and Alterations. Open to all architects in U.K. Not more than 12 architects of repute have been specially invited, each of whom will receive one hundred guineas. The three selected architects will receive one hundred guineas each. Author of design placed first will be appointed. (J. S. Gibson, F.R.I.B.A., Assessor)		Rich. J. Allen, Master, Royal Exchange, Manchester.
,,	2—Departmental and Courts Buildings, Ottawa (T. E. Collcutt, J. H. G. Russell, and J. O. Marchand, Assessors). Double Competition, five unsuccessful competitors in accord to receive 3,000dols. each		R. C. Desrochers, Department of Public Works, Ottawa, Ont.

LIST OF TENDERS OPEN.

BUILDINGS.

Sept.	5—New School, Hellifield	West Riding Education Committee	The Education Architect, County Hall, Wakefield.
,,	5—Home Office Museum Horseferry-road, S.W.	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
,,	5—Workmen's Dwellings (12), Southwold	Corporation	The Borough Surveyor, Town Hall, Southwold.
,,	5—Meter House, Fairlee-road, Newport	Isle of Wight Rural District Council	H. B. Cullin, Brooklands, Wootton, I.W.
,,	5—Two Labourers' Cottages, Ballinglanna	Clonakilty Rural District Council	W. H. Spiller, Clerk, Clonakilty.
,,	5—Bettws Council School, Additions to, Ammanford	Carmarthenshire Education Com.	W. Morgan, A.R.I.B.A., County Education Offices, Carmarthen.
,,	5—Soar Chapel, Repairs to, Seven Sisters, Neath		J. Morgan, Post Office, Seven Sisters.
,,	5—House, Park-road, Birkdale, Dewsbury		Kirk, Sons, and Ridgway, Archts., Market-place, Dewsbury.
,,	5—Central School, Additions to, Harwich	Education Committee	G. D. Hugh-Jones, Sec., Harwich.
,,	5—Carlton School, Alterations to, Rothwell	West Riding Education Committee	The Education Architect, County Hall, Wakefield.
,,	5—School, Stainland Holywell Green	West Riding Education Committee	The Education Architect, City Hall, Wakefield.
,,	6—Tramway Offices, Additions to, Walsall	Tramways Committee	J. Taylor, Boro' Eng., Council House, Walsall.
,,	6—Council School, Additions to, Newport	Pembrokeshire Education Authority	O. T. Thomas, Archt., County Education Offices, Haverfordwest.
,,	6—Nurses' Lecture Room, Ruchill Hospital, Glasgow	Corporation	J. Lindsay, Town Clerk, City Chambers, Glasgow.
,,	6—County School for Girls, Extension of, Camborne	Cornwall Education Committee	Sampson Hill, Archt., Green-lane, Redruth.
,,	6—Council School, Additions to, Orielton	Pembrokeshire Education Authority	O. T. Thomas, Archt., County Education Offices, Haverfordwest.
,,	6—Secondary School, Falmouth	Cornwall Education Committee	S. Hill, Archt., Green-lane, Redruth.
,,	6—Medicinal and Swimming Baths, Torquay	Town Council	A. J. Taylor, Archt., M.S.A., 18, New Bond-street, Bath.
,,	6—Council School, Additions to, St. Ishmaels	Pembrokeshire Education Authority	O. T. Thomas, Archt., County Education Offices, Haverfordwest.
,,	8—Stamshaw Council School, Temporary, Portsmouth	Education Committee	A. H. Bone, Sur., Cambridge Junction, Portsmouth.
,,	8—Workmen's Cottages (12), Droitwich	Town Council	H. Hulse, M.I.Mun.E., Boro' Sur., Droitwich.
,,	8—Motor 'Bus Garage, West Bridgford, Notts	Urban District Council	W. Pare, Public Office, West Bridgford.
,,	8—Powder Magazine, Shincliffe, Bank Top	Curtis and Harvey, Ltd., London	H. T. Graydon, Archt., Market-place, Durham.
,,	8—St. James's Church, Demolition of, Milton, Portsmouth		Rev. J. Fowler, Milton Vicarage, Portsmouth.
,,	8—Dispensary, Cabinteely	Rathdown Guardians	P. H. M'Carthy, B.E., 39, Westmoreland-street, Dublin.
,,	8—Miners' Institute and Hall, Parkgate, Rotherham	Yorkshire Miners' Assoc. Trustees	J. Platts, Archt., High-street, Rotherham.
,,	8—Four Workmen's Cottages, Beach-street, Dover	Town Council	W. C. Hawke, Boro' Eng., Maison Dieu House, Biggin-st., Dover.
,,	9—Drapery Dept., Alterations to, Chestergate, Stockport	Industrial Co-op. Society, Ltd.	Wrathmell & Blackshaw, Archts., St. Peter's-square, Stockport.
,,	9—Temporary Iron School (130 places), Eppleton Colliery	Durham County Council	A. J. Dawson, Clerk, Shire Hall, Durham.
,,	9—Forest-road Infants' School, Walthamstow	Education Committee	H. Prosser, M.S.A., High-street, Walthamstow.
,,	9—Depot Shed, Ryde	St. Helens (I.W.) U.D.C.	A. S. Lilley, Sur., Council Offices, High Park, Ryde.
,,	9—Infants' School, Victoria Park, Stretford	Education Authority	Woodhouse and Howard, Archts., 88, Mosley-st., Manchester.
,,	9—New Branch Post Office and Telephone Exchange, Moseley	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
,,	9—Temporary Iron School (200 places), Fishburn	Durham County Council	A. J. Dawson, Clerk, Shire Hall, Durham.
,,	9—Head Post Office, Alterations to, Perth	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
,,	9—Working Men's Club, Flockton-green, Wakefield		F. Fitton, Archt., Middlestown, Wakefield.
,,	9—Van Shed and Stables, Doughty-road, Grimsby	Watch Committee	H. G. Whyatt, M.I.C.E., Boro' Eng., 170, Victoria-st., Grimsby.
,,	9—Repairing Buildings, Southern Outfall Works, Crossness	London County Council	G. W. Humphreys, County Hall, Spring Gardens, S.W.
,,	9—Workhouse, Alterations to, Tredegar	Bedwellty Guardians	H. J. C. Shepard, Clerk, Tredegar.
,,	10—Four Cottages, Aslackby	Bourne Rural District Council	The Surveyor's Office, West-street, Bourne.
,,	10—Eight Cottages, Castle Bytham	Bourne Rural District Council	The Surveyor's Office, West-street, Bourne.
,,	10—House, Waingate, Berry Brow, Huddersfield		J. Berry and Sons, Architects, 3, Market-place, Huddersfield.
,,	10—Four Cottages, Creeton	Bourne Rural District Council	The Surveyor's Office, West-street, Bourne.
,,	10—Four Chronic Blocks, Kirkburton Asylum	West Riding Asylums Board	W. E. H. Burton, Archt., The Asylum, Wakefield.
,,	10—Grange Hostel, Alterations to, Headingley		The Education Department, Calverley-street, Leeds.
,,	10—Crow's Nest Chapel, Repairs to, St. Cleer, Cornwall		J. Lampey, Ternouth Hill, St. Cleer.
,,	10—Four Cottages, Hacconby	Bourne Rural District Council	The Surveyor's Office, West-street, Bourne.
,,	10—Eight Cottages, Storthes Hall Asylum, Kirkburton	West Riding Asylums Board	W. E. H. Burton, Archt., The Asylum, Wakefield.
,,	10—Two Cottages, Kirkby Underwood	Bourne Rural District Council	The Surveyor's Office, West-street, Bourne.
,,	10—Four Houses, Bryumenin	H. Williams	G. F. Lambert and Son, Architects, Bridgend.
,,	11—Six Houses, Martock, Yeovil	Rural District Council	Petter and Warren, Archts., Church-street, Yeovil.
,,	11—Parish Hall, Rowland's Castle, Hants		G. Vernon-Inkpen, M.S.A., 40, Commercial-road, Portsmouth.
,,	11—No. 18, Peas Hill, Rebuilding, Cambridge	Town Council	The Borough Surveyor, Guildhall, Cambridge.
,,	11—No. 1, Aberfan-road, Additions to, Aberfan		T. E. Rees, M.S.A., Bank Chambers, Merthyr Tydfil.
,,	11—St. John the Baptist's Church, Vestries & Narthex, Clayton		T. H. and F. Healey, Archts., 42, Tyrrel-street, Bradford.
,,	11—Theatre, Henry-street, Dublin	Premier Picture Palace (Dublin) Ltd.	B. Crowe, 75, Shaftesbury-avenue, W.
,,	11—Chemical Laboratory, Rochdale-road, Manchester	Gas Committee	F. A. Price, Supt., Gas Dept., Town Hall, Manchester.
,,	11—School, Llanfihangelynnhowyn, near Valley	Anglesey Education Committee	J. Owen, F.R.I.B.A., County Archt., Holyhead.
,,	12—Ruling Machine Works, Scotgate-road, Honley	J. Shaw and Sons	P. N. Brown, Architect, Hawthorn Bank, Holmfirth.
,,	12—Boys' Industrial School, Laundry at, Sunderland	Committee	G. W. Bain, Hon. Sec., 46, John-street, Sunderland.
,,	13—Two Houses, Wetheral	R. Thompson	J. H. Martindale, F.R.I.B.A., Castle-street, Carlisle.
,,	13—Eight Cottages, Knockroe and Templemartin	Bandon Rural District Council	A. Haynes, Clerk, Workhouse, Bandon.
,,	13—Hospital, Gildredge Underhill	Eastbourne Sanitary Committee	W. Chapman Field, Boro' Archt., Town Hall, Eastbourne.
,,	15—Working-Class Dwellings (22), Watford	Urban District Council	D. Waterhouse, Eng., Council Offices, Watford.
,,	15—Workmen's Cottages (12), Station-road, Petworth	Rural District Council	E. H. Staffurth, Clerk, Avenings, Petworth.
,,	15—Liberal Club, Newton Abbot	Building Committee	J. C. Beare, A.R.I.B.A., 42, Devon-square, Newton Abbot.
,,	15—School (515 places), Liverpool-road, Irlam	Lancashire Education Committee	H. Littler, Archt., 16, Ribbiesdale-place, Preston.
,,	15—Ten Houses, Flockton, Yorks	Urban District Council	W. Dickinson, Clerk, 46, Westgate, Wakefield.
,,	15—Workhouse, Additions to Boiler House, Croydon	Guardians	H. Berney, Archt., 104, George-street, Croydon.
,,	16—School (1,200 places), Old Shildon	Durham County Council	A. J. Dawson, Clerk, Shire Hall, Durham.
,,	16—Kitchen Accommodation at Infirmary, Additions to	Lambeth Guardians	J. L. Goldspink, Clerk, Brook-street, Kennington-road, S.E.
,,	16—Two Galvanised Iron Sheds, Douglas, I. of M.	Tramways Committee	The Tramway Offices, Strathallan Crecent, Douglas, I. of M.
,,	16—School, Alterations to, Middlestone Moor	Durham County Council	A. J. Dawson, Clerk, Shire Hall, Durham.
,,	16—Rebuilding Station, Penshaw	North-Eastern Railway Co.	W. Bell, Archt., Westgate-road, Newcastle-on-Tyne.
,,	16—South Norwood Baths, Additions to, Croydon	Town Council	The Borough Engineer, Town Hall, Croydon.
,,	16—Engine Sheds, Dairycoates, Hull	N. E. Railway Directors	W. Bell, Archt., Paragon Station, Hull.
,,	16—School, Alteration to, Newbottle	Durham County Council	A. J. Dawson, Clerk, Shire Hall, Durham.
,,	16—Gas Works, Cleckheaton	Urban District Council	J. H. Linfield, Clerk, Town Hall, Cleckheaton.
,,	17—Cottages (118), Leigh, Lancs	Corporation	T. Hunter, Boro' Eng., Town Hall, Leigh.
,,	17—Three Police Dwelling-Houses, Tilbury	Essex Standing Joint Committee	F. Whitmore, County Archt., Duke-street, Chelmsford.
,,	17—Public Baths, Extensions to, Leigh, Lancs	Corporation	T. Hunter, Boro' Eng., Town Hall, Leigh.
,,	17—Store and Lock-up Shop, King Cross-street, Halifax	Industrial Society, Ltd.	Clement Williams & Sons, Archts., Post Office Bldgs., Halifax.
,,	18—Stables at Corporation Depot, Alterations to, Dorchester	Town Council	The Borough Engineer's Office, 21, North-square, Dorchester.
,,	19—Labourers' Double Cottages (36), Belfast	Rural District Council	The Clerk, Belfast.
,,	20—Cemetery, Greenhouse at, East Finchley	Islington Borough Council	J. Patten Barber, Boro' Engr., Town Hall, Upper-st., Islington, N.
,,	20—Orange Hall, Ballyclare		J. M'Connell, Sec., Horatio Service's, Main-st., Ballyclare.

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THE BUILDING NEWS

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Hostel, Vincent-square, for King's College. Mr. A. C. Martin, Architect

Insurance Office, Toronto. Messrs. Darling and Pearson, Architects.

Detached Villas, Park-avenue, Morley. Views and plans. Messrs. Walter Hanstock and Son, Architects.

Conditions for Competitive Designs of Government Buildings, Ottawa.

SAFETY WITH ELECTRIC LIFTS.

In the absence of definite Government regulations on the use of electric lifts, the safety of passengers is a matter which does not always receive the attention which it deserves. Of course, the standard modern practice of the leading manufacturers is almost beyond reproach in this respect; but, now and then, one encounters a relic still doing service which, from various causes, is a veritable death-trap, only requiring the occurrence of a certain possible, if not probable, combination of circumstances to cause injury to persons, and, perhaps, loss of life. When firms, whose practice in this matter is not very definite, are on the list for tendering, architects and engineers will do well to pay particular attention to the safety devices when drafting specifications. There are, of course, differences of opinion as to the extent to which money should be spent in precluding the possibility of somewhat improbable accidents; but the best specifications err on the side of safety in covering every possible contingency. The majority of lift accidents appear to be due to the absence of efficient gate interlocking. For the safety of persons on the landings, it is imperative that all landing doors or gates should be kept closed except when the car is in a position opposite, and to prevent persons in the car receiving injury through coming into contact with the sills, lintels, or walls of the well, it should be impossible for the car to be travelling while its gate is open. These conditions are fully met by a combination of automatic electric and mechanical locking. The electric locking is effected by taking the control current for the lift through a series of contacts one on each gate so that the current can only flow, and the lift be started, when all the gates are closed. This method is practically universal; but for mechanical locking of the landing-gates there are various systems in use. The simplest, but one which can only safely be used with solid wood doors, and then only with the employment of regular atendants, is to fix a swing latch on the inside of the doors, which is manually operated by the attendant the last thing before closing the car gate on leaving a floor. Automatic locking of landing openings is usually fitted to quick-service lifts, such as are installed in hotels and offices, and is suitable alike for doors and collapsible gates. The action is almost invariably dependent upon the motion of the cage, a projection on which, operating through a striker-arm, liberates the particular gate to which it is opposite. There are many types of mechanical locks in use, every maker having his own standard design, and among them some very ingenious devices are to be found, in many cases the electrical and mechanical locking being performed by one piece of mechanism.

In a quite recent design of gate-lock the makers have gone one step further than the almost universal system. In the latter the car unlocks each gate as it comes opposite those on intermediate landings passed on the way, as well as those at which it stops. The unlocking, where not desired, is, of course, only momentary, but might allow wilful interference with the working of the lift by a person standing on the landing, although not to the danger of passengers. With the system in mind, the projection on the car which unlocks the gate is withdrawn at the first operation of starting the lift, and is thus out of action until the control-switch is thrown into the "off" position for stopping, when it is again projected and unlocks the gate. The fixing of an efficient system of gate interlocking renders a lift safe so far as accidental interference by passengers is concerned; but, in addition to this, it is necessary to guard against the failure of portions of the plant. With careful maintenance, in which all parts are periodically inspected, the breaking of the suspending ropes is very improbable; but, on most passenger-lifts in this country, such a contingency is provided for by fixing a safety gear on the car, which comes into operation on the failure of the ropes and clutches the guides, so preventing the cage falling to the bottom of the well. In America, various alternatives to this arrangement are in use, one of the crudest being to provide a pit at the bottom of the well of restricted area, into which the cage is a rough airtight fit. The size is gradually opened up to the full area, the idea being that a falling cage would be gently arrested in its descent by the air-cushion so formed. The sensation of the passengers prior to the arresting process with this system are more easily imagined than envied, and the simple "grip" device would seem to provide a more pleasant rescue in case of accident.

In lifts where the balance-weight travels to "earth," there is little need for providing it with a safety gear (although the careful architect may ask for this where price is a secondary consideration); but when the well stops short of the lowest floor in the building, and there is a possibility of persons passing to and fro under the balance-weight, a safety gear is desirable. In order to limit the travel of the car, and prevent it being accidentally run up into the overhead gear, or down on to the buffers, limit switches are provided. These are operated automatically by the cage in its travel or by the winding gear, and cut off the current when the car reaches a certain point above the top floor, or below the bottom floor. With certain lifts, in which the motor and gearing have a high efficiency, "overhauling" may take place. That is, with a heavy load descending, or an empty car ascending, the velocity may increase even with the power switched off, and, in this case, the brake must be depended upon entirely for checking the speed. If, through any defect in the electrical circuits the brake is not applied, a serious accident may occur, and, to guard against this, an emergency safety device should be provided in the form of a lever in the car, operating direct on to the brake through a flyrope. This can be depended upon for stopping a runaway car manually and independent of every other agency.

In addition to special devices, there are many minor points in the design and construction of electric lifts which affect the safety of passengers and attendants. One which is sometimes overlooked when specifying lattice-gates, is the necessity of allowing two or three inches between them and the edge of the well, in order there may be no danger to the toes of persons standing on the landing. The relative position of the cage and balance-weight on the ropes is also an important matter, as, by careful adjustment, the landing of the balance-weight before the cage can possibly foul the overhead joists, and the landing of the cage on its buffers before the balance-weight hits the top of the guides can be insured. This reduces the risk of fatality should the limit switches fail to stop the cage when travelling beyond its normal limits. It can be truly said that, considering the number of electric lifts in use, the cases of accident are remarkably few; but, with strict attention to such maters as are mentioned above, they could be reduced still further, and the electric lift made as safe a means of transit as exists.

THE DANGERS OF DUST.

In his presidential address at the opening of the Sanitary Inspectors' Association conference at Llandudno on Tuesday, Sir James Crichton-Browne dealt principally with the dust problem. Dust in the right place, and in the right quantity, and of the right quality, is, he observed, not a bad thing. We owe to it the blueness of the sky, which is due to the reflection of light from powdery particles floating in the air, which form the nuclei on which watery vapour condenses, giving us clouds of all kinds, haze, mists, fogs, and rain. But it is not the infinitesimal natural atmospheric dust that

gives us our sapphire firmament that has any relation to public health; but it is dust produced by human agency that is productive of disease. Modern civilisation is one vast grind, attrition is almost synonymous with progress, and in the process of attrition many noxious kinds of dust are generated. It is industrial dusts that have hitherto attracted most attention and these are of many different kinds, mineral, vegetable, and animal. The mortality of the principal dust-producing industries compared with that of agriculturalists, who live and work in what is practically a dustless atmosphere, is still excessive to a startling degree. Great improvement, as regards protection against industrial dust, has been effected, but industrial dust is still responsible for no little sickness and death. It is, however, being vigorously dealt with by your allies, the factory inspectors, and, beneficial as have been the operations of these inspectors in many directions during the last decade, in not one have they been more fruitful of good results than in the removal of dust from factories and workshops. Not only have the means of localised ventilation been improved, but they have been extended to many new branches of industry. The difference between the industrial dusts, with which the factory inspectors have to contend, and the municipal and domestic dust, which fall under your supervision, is that the latter, while generally less concentrated, are of more complex constitution. Municipal or town dust varies enormously in composition in accordance with local, seasonal, and meteorological conditions, one of its most universal and objectionable constituents being carbon particles or soot, derived from coal combustion. It is, however, as a carrier of disease germs that municipal dust is most to be feared, and no doubt pathogenic spores and bacilli of many kinds, which are resistant to drying, may be wafted about in it. In all kinds of dust the danger of implantation of any disease germs, fresh or desiccated, which they may contain, seems to be greatly enhanced when there is associated with them chemically corrosive or mechanically wounding elements. In various occupations in which dust containing free crystalline silica is contained there is an excessive phthisis mortality. Whether the action of silica and other mineral particles in dust be chemical or mechanical, the important point to note is the risk that attends them when they are associated with disease-causing organisms; and they are thus associated in that road-dust which has become such a widespread and in some places intolerable nuisance, calling for prompt abatement. Whatever the material used for road-making may be—granite, whinstone, sandstone, shingle, slag, or clinkers—the sharp-edged or acrid mineral particles are there, and with them, in dangerous companionship, are almost invariably pathogenic germs derived from organic sources. We still need accurate returns as to the composition of road dust of untreated roads in different districts of the country, and as to their injurious effects on human beings, but we need not wait for these in order to condemn that dust in all its varieties as abominable and hazardous to health. We all know the discomfort it causes, and its choking properties; and although its pathological consequences have still to be worked out, it is already evident that it is responsible for cases of conjunctivitis, of oral sepsis, of sore throat and tonsilities, of bronchitis, and pneumonia. The chief danger attending it is, however, tetanus, or lockjaw; a rare disease, but one the death-rate from which shows a decided increase. The fatal organism of tetanus lives in the alimentary canal of the horse, and hence is to be found in any soil, dirt, or dust which contains horse manure. The hazard attending this will be scarcely diminished by the improvement in road construction that is being so vigorously pushed on, so long as the same roads are used by horse-drawn traffic and automobile vehicles. Additional force is thus given to the suggestion that all houses and cottages should be built henceforth with a broad belt of garden ground intervening between them and the highway. In the meantime, all motorists and dwellers on the highway should be warned that they should keep covered and free from road dust all cuts, wounds, or abrasions on the hands or face, and that they should seek immediate treatment when road dust has found its way under suspicious circumstances into one of these. The suppression of road dust is a matter of primary sanitary importance and of ever-growing importance, owing to the great increase of motor traffic that is going on. Road dust is not an original invention of the motor-car, but it has been multiplied by it to a portentous degree. Road-making is the question of the hour. Road-making as a science and art for it is both—is in a transition stage, and daily taking big strides in advance; but whatever advances it may make, tar-macadam will remain its basal idea for a long time to come. The best and most dustless roads are those which owe their virtues to tar, bitumen, or petroleum pitch in some combination, and it may be well, therefore, to allay the anxieties which the scaremongers have begun to conjure up. We have been told that the extensive use of tar in road making must lead to a great increase of cancer, which is already so sadly prevalent. It may be safely affirmed that there is not the remotest risk of the dissemination of cancer by the use of tar in road-making. Tarred roads well made are practically free from dust, and in badly-made roads, these, even if, as is highly improbable, they contained the noxious material, would hold it in such attenuation as to be harmless. A great many different processes are in use in the application of tar to road construction, and we have not yet, perhaps, arrived at the best method of employing it so as to secure a smooth and impervious surface. The whole business is in the experimental stage, and well-devised experiments are being carried out at Sidcup under the direction of the Road Board with its Engineering Advisory Committee; and also by road-paving manufacturers on their own account, many of whom are trying new material. The Road Board has not been idle. The advances made out of the road improvement fund up to June 30 last have amounted to £3,406,232, £1,073,037 having been paid for road-crust improvement and £118,606 for widening roads and taking off curves. We must look to it for authoritative information as to those kinds of roads that are as nearly dustless as possible, and also for guidance in the sprinkling of chloride of calcium, akonia, Tarva, and oil, or other adjuvants in dust-suppression in dry weather

THE BRITISH ASSOCIATION.

The meeting of the British Association commenced on Wednesday at Birmingham. We give abstracts of some of the papers likely to interest our own readers.

METALS FOR STRUCTURES.

By A. T. Walmisley, M.Inst.C.E.

Birmingham from an early date has been recognised as one of the chief seats of industries in metals. Such alloys are not mere mechanical mixtures, but homogeneous combinations, secured by fusion, possessing distinguishing qualities for special purposes.

Copper possesses the element of conductivity. It is always economical to use the purest copper obtainable commercially, especially for electrical purposes.

Zinc is applied for coverings. Galvanised sheets can be tested with sulphate of copper, which will adhere to any exposed surface of the iron not coated with zinc. The durability of zinc depends mainly on the spelter from which it is made.

Lead has no elasticity, but is useful for girder seatings, where the weight is sufficient to crush the lead so as to produce uniformity of pressure upon the bearing. It is also serviceable for roof coverings and for flashings.

Brass, consisting of copper and zinc, is employed for lubricators and pumps, while Muntz's metal—also an alloy of copper and zinc—has superseded copper for sheathing vessels.

Manganese-bronze, an alloy of copper and ferro-manganese, is serviceable for propeller blades, on account of its toughness; and ordinary bronze—an alloy of copper and tin—is found to possess sufficient fluidity for satisfactory melting, combined with slightness of contraction on solidifying.

Phosphor-bronze, by the addition of phosphorus, excels ordinary bronze in hardness, density, and tensile strength, and is used for friction bearings, especially when liable to shock; also for sliding surfaces in the case of steel shafts, as a steel or wrought-iron shaft would grip a certain bearing.

Gunmetal, another alloy of copper and tin, takes its name from its employment as the metal from which large guns were formerly made, while bell-metal and delta-metal also possess characteristics described in the paper.

When one metal less oxidisable than another comes in contact galvanic action may be set up. In the case of mild steel and wrought iron in metallic contact the steel may oxidise at the expense of the iron. Iron rivets have been found to become slack in steel plates without any special wasting in the steel plates, while the iron has wasted somewhat.

The durability of materials is one of the leading questions of the day.

NOTE ON THE STRENGTH OF FREE-ENDED STRUTS.

By Andrew Robertson, M.Sc.

This paper gave an account of experiments made on mild steel struts to ascertain the law of variation of strength with length when special precautions were taken to secure (a) axial loading, (b) straightness, (c) freedom of the ends from constraint. The conclusions are:—

1. That Euler's law is followed down to the length for which the load per square inch given by this law is equal to the stress at yield.

2. That below this limit collapse occurs when the load per square inch is equal to the yield stress.

3. That for round struts of length less than five diameters there is no definite ultimate load. The transition from the elastic to the plastic state is marked not by collapse of the strut, but merely by a sudden deformation of appreciable magnitude.

In all the cases in which the collapsing load per square inch was equal to the yield stress the specimens were bent, and on relieving the load and again testing them they failed under a load smaller than the first collapsing load. This is probably due to the existence in compression, as in tension, of a condition immediately after yield in which the stress that the material will sustain is less than that required to initiate the yield. The effects of eccentricity of loading and initial curvature were investigated, and a number of tests of struts of ordinary commercial section compared with the theoretical results.

THE TRANSPORT AND SETTLEMENT OF SAND IN WATER, AND A METHOD OF EXPLORING SAND BARS.

By Dr. John S. Owens, A.M.Inst.C.E., F.G.S.

This paper, illustrated by experiments, dealt with certain phenomena accompanying the movement of sand in water. Sand ripples were shown travelling under the influence of a current. The grains being swept by the current from the back of the ripple and deposited on its face, the ripple-form thus moved forward with the current by a process of erosion of its back and accretion of its face. This was demonstrated by means of a trough with semicircular ends and a longitudinal partition in the middle, thus forming two channels. The water was made to circulate up one channel and down the other, and the movements of the ripples were seen on the sand forming the bottom. The formation of quicksands was illustrated by means of a tank containing ordinary sea-sand, and it was shown that when water was caused to flow upwards through the sand the latter acquired all the properties of a quicksand and swallowed heavy bodies placed thereon.

The effect of obstacles lying on a sandy bed in the path of a current was demonstrated by means of a model. Stones, models of piles, and improperly made groynes were placed on sand in the path of a current in a small glass tank, and localised erosion around the obstacles resulted in each case. This was due to the deflection and increasing local velocity of the current. The curious effect of suspended matter on the specific gravity of water was illustrated by means of a glass cylinder containing water in which sand was shaken up; it was shown that while the sand was suspended the specific gravity, measured by a floating hydrometer, was raised above that of water. The influence of such a rise in specific gravity in increasing the intensity of impact of the water, and, consequently, its erosive power was indicated. A tall glass tube filled with water was exhibited; in this bodies of different shape were allowed to sink; in every case, whether discs, rectangular plates, or rods, the bodies settled in the position offering the greatest resistance to movement. It was shown that this property might result in more rapid settlement in running than in still water, and also in a cleavage in sedimentary rocks. A model of an instrument for exploring sand-bars and river-beds was shown. It consisted of two tubes arranged concentrically, connected at the top, but separate at the bottom. A cock-and-hose attachment was fixed on the upper end of the inner tube, and a second cock, with a spout, communicated with the top of an annular space between the two tubes. At the bottom the inner tube ended a short distance above the end of the outer tube. Water, if forced down the inner tube, must pass out at the bottom when the cock to the annular space is closed; in this case the instrument sinks if placed on a sandy bottom. When at any desired depth the cock to the annular space is opened the water returns up the outer tube, carrying a sample of the sand with it, and delivering the sample from the spout. By means of this instrument the depth and nature of bars and shoals may be easily ascertained.

HARBOUR PROJECTIONS AND THEIR EFFECT UPON THE TRAVEL OF SAND AND SHINGLE.

By Ernest R. Matthews, F.R.S.E., A.M.Inst.C.E.

The author pointed out that any seaward projection on a coast, whether it be in the form of a groyne extending merely to LWOT or LWOST, a breakwater, a harbour-arm projection 1,000ft. or more, or a promontory such as Flamborough Head or Spurn, extending seaward some miles, has the effect of arresting more or less, according to the magnitude of the projection, the travel of the sand and shingle on such coast. In the case of harbour projections run out at right angles to the coast-line this obstruction, especially on a sandy coast, impounds the travelling material on one side of the harbour, and often causes alarming erosion on the other. He gave excellent examples of this in the case of the Yarmouth, Shoreham, Lowestoft, and Madras harbours, at each of which millions of tons of sand, representing acres in area, are being held up by the harbour piers. The sea-front at Yarmouth may be said to have extended seaward during the past half-century at an average of 300ft., due almost entirely to the construction of the harbour; while at Madras 650 million cubic feet of sand have accreted on the south side of the harbour within a distance of three miles of the harbour, and 450 million cubic feet of land has been eroded on the north side within a similar distance, and the authorities there are now contemplating an extension of the harbour seaward, which is estimated to cost about £3,000,000. They consider it is necessary to do this in order to reduce the extent of the silting up of the harbour. The author referred to the Newhaven, Bridlington, and Whitby harbours, and that at Hastings, which is only partially constructed, and described their effect upon the coast. He also described the effect upon the coast of headlands which run out at approximately right angles with the coast, and those which form an obtuse angle with the coast. He suggested that the question will naturally be asked, What is the remedy, or partial remedy, for this trapping of the travelling sand and corresponding erosion on the leeward side of a harbour? and explained that previously the only method of escaping from the impounded material seems to have been to periodically extend the arm of the harbour further seaward, as proposed for Madras. This means a tremendous cost, and the results are often not satisfactory, for as the pier is advanced the shore also advances. It has been suggested that instead of doing this openings should be left through the shore ends of the harbour arms for the sand to pass through; but this suggestion is not practicable, for immediately the travelling material passes through the opening the wave behind it does not possess sufficient force to move the material through, especially where the width of the harbour is considerable.

The author suggested that in order to modify this trapping of the sand the ground plan of the harbour, instead of showing the piers to run out at right angles to the coast, or approximately so, should show that on the side facing the direction of the travelling material to project from the coast at an angle of 45deg.; the additional area thereby enclosed by the harbour piers could be utilised, among other purposes, for that of wharfage. The travelling material would, he stated, pass around the harbour projection if the plan of the harbour was on these lines, and would supply the coast on the lee side of the harbour with a natural protection of sand and shingle. He illustrated the various points referred to by numerous diagrams and photos, and stated that in arriving at his conclusions he carried out numerous experiments, which he described in the paper. He made the suggestion that where it can be proved that erosion has occurred, and is still taking place, owing to the projection of harbour piers, or the lengthening of such piers, or the construction of a spur breakwater from such piers, the harbour authorities should be called upon to contribute towards the cost of the protection of such a coast as far as the affected area is concerned. He also suggested that in the granting of powers by Parliament for the construction of new harbours it should be made compulsory that contributions shall be made towards the cost of the prevention of erosion, where it can be proved later that protection works are necessary, in consequence of such harbour projections.

BIRMINGHAM, SNOW HILL STATION ALTERATIONS.

By F. Gleadow, M.Inst.C.E., and C. E. Shackle, Assoc.M.Inst.C.E.

The railway, station buildings, and platforms recently removed from this site were erected in 1870 on the site of a still older station. It consisted of two principal platforms in direct connection with the streets on either side. The platforms and railway lines between the buildings on either side were covered with an iron roof, with crescent-shaped girders of about 92ft. span. The site of the new station, as well as that of the old, is bounded on the south by Colmore-row, on the east by Snow Hill, and on the west by Livery-street. The building adjoining Colmore-row, formerly a hotel, is now converted into offices, restaurant, etc., and an entrance has been made through it for foot-passengers, leading to the high level booking-hall. Entrances and exits for carriages are provided on the Livery-street and Snow Hill sides. From the above-mentioned booking-hall stairways lead down to the two main platforms, and lifts are provided for dealing with passengers' luggage. The roof over the main entrance and circulating area consists of steel arched ribs of about 70ft. span, with glazed screens at the east and west sides. Over the main platforms and buildings thereon the roof is of the "ridge and furrow" type, carried on steel girders, and resting on steel columns, cased, for appearance sake, with cast iron. Beyond this length of platform, and where the width of platform becomes much less, the type of roof is again changed to one generally known as the "umbrella" type, on account of it being supported by single steel columns, anchored below platform-level into concrete blocks. The buildings have been freely treated, from an architectural point of view, the material used being principally glazed red bricks, with buff-coloured terracotta dressings externally, and Carrara-ware dressings internally. The whole of the steel-work in the roof is designed to withstand a wind-pressure of 40lb. over the whole surface, and any individual portion of it to withstand a local gust of 56lb. to the square foot. Under no conditions can any of the steelwork be stressed to over six tons to the square inch in tension, or five tons in compression. The pressure upon the base of any foundation does not exceed three and three-quarter tons. The whole of the steelwork has been made by an open-hearth process.

A NEW TYPE OF WEIGHING MACHINE.

By H. S. Hele-Shaw, LL.D., D.Sc., F.R.S.

The object of this paper was to describe a new type of hydraulic weighing-machine and to give a short account of the results obtained with it. In the first place it must be pointed out that weighing-machines are of two main types, viz.:

(1) Suspended or Crane Weighing-Machines.

(2) Table or Platform Weighing-Machines.

The chief difficulties with hydraulic machines common to both the above types are two in number:—

The first and most serious results from the use of packing for the hydraulic pistons, or the employment of diaphragms. The second is in connection with the recording gauge, or other contrivance, the indication of which is necessary to measure the weight being recorded; and beyond these two difficulties there is yet a third which is peculiar to the machine of the platform type—viz., the necessity of dealing with the number (generally four) of different pressures at different points of the table or platform.

The means by which in the new machine the first difficulty is overcome is by taking advantage of the modern development of grinding, by which accurately-fitting cylindrical parts can be obtained at comparatively small cost, so that when oil is used as a fluid, cylinders and plungers can be employed to work together under very great pressures with comparatively small leakage, and with no appreciable friction. It may be said at once that if the condition of the fit of the plunger and cylinder are such as to insure a layer of oil between them, and thereby to avoid the friction which would otherwise occur between solid bodies in contact, there must inevitably be some slight leakage of the working fluid, and the chief feature of the new machine is a device for dealing with this leakage. This device allows a certain period of time during which weighing can take place, and when the limit of this period is reached it is merely necessary to take off the weight, and pick it up again in order to restore the oil which has leaked away, and thus bring the machine to its normal condition. There are two cylinders which take the form of caps, and which work respectively on two plungers joined co-axially together.

The amount of the load is recorded by a pipe communicating with the gauge or its equivalent from the larger cylinder. The object of the small cylinder is as follows:—The load is applied in such a way as to force the two-cap cylinders together, and it is obvious that there must be a greater pressure per square inch in the cylinder of smaller diameter. If there were a direct connection between the two cylinders through the stepped plunger itself it is clear that the small cylinder would be forced at once against the end of the stepped plunger adjacent to it, all the oil passing into the larger cylinder. If, however, the communication between the two is cut off when a certain desired position is obtained, it is clear that the large cylinder will be kept relatively in that position to the end of the plunger adjacent to it until the oil is exhausted from the smaller cylinder—that is to say, the

leakage between the end of the larger cylinder and the portion of the plunger working in it will be made up by the flow from the smaller cylinder. Sooner or later, according to the design, the supply is exhausted into a common reservoir from both cylinders, and the recording portion ceases to act.

The normal condition of the machine is regained as follows:—There is a spring between the cap of the smaller piston and the adjacent end of the stepped plunger. There is also a small inlet-valve communicating from the waste reservoir to the smaller cylinder. When the limit of weighing is reached the load is removed, and immediately the above spring forces out the smaller cap piston, filling it with oil. When the load is again taken the high pressure of oil in the small cylinder at once causes the plunger to travel to its limiting position in the large cylinder, thereby restoring the normal position of the contrivance. It will be noted that the spring in the smaller plunger does not in any way come into the problem of the total amount of fluid pressure, and, therefore, does not in any way affect the accuracy of the machine, and merely operates to restore normal conditions.

With regard to the other spring portions, the hydraulic weighing-machine lends itself to the employment, if desired, of a steelyard method of giving the results, though the indicator springs that can be used are now made of very great accuracy, and their reading can be relied upon, especially as in cases such as the present one, where the temperatures are normal; and it may further be pointed out that the use of oil has the great advantage of keeping the working pistons always under the same conditions, and preventing any corrosion of the working parts. The machine further can by a very simple process be put out of action when weighing is not required. From observations already made with both the suspended and platform types of machines it is clear that very accurate movements of a passing load can be recorded, since the inertia of the system is very small, while shocks appear to have no injurious effect on the machine, and as the plungers and pistons are submerged in oil, these parts can be made of cast iron, and the whole machine produced at a very low cost.

THE STREAM-LINE FLOW OF SOLIDS.

By Thomas Reid.

The geometrical laws that govern the deformation of plastic materials are mainly based on assumptions made in connection with the experimental researches of the late M. Tresca. In his experiment on the formation of a jet by the plastic flow of lead from an orifice in the end of a cylindrical die-block from which the lead, in the form of a cylinder of superposed discs, was forced out by means of a piston subjected to pressure in a hydraulic press, the lead flows radially towards the axis of the cylinder, displacing a core, which forms the jet by the concentric contraction of the cylinder. The author would point out that, although the lead under the particular conditions of the experiment referred to must flow in that manner, because the cleavage planes between the discs produce discontinuity in the material in the direction of the axis of the cylinder, and thus prevent flow taking place in that direction, it does not follow, however, that the flow of a solid cylinder of lead must be the same. With the object of determining the nature of the flow of solids, the author has carried out a series of experiments, which he believes prove that the flow in every case below a certain critical velocity consists of molecular irrotational and rotational motion, the direction of the flow being stream-line, and that the flow is steady, straightline motion until the stream changes its course in converging towards the orifice, and in the case of the extrusion of solid lead from an orifice there is no radial flow or concentric contraction, as has been assumed, until the stream-lines begin to converge towards the orifice. In fact, the solid material behaves exactly as a noncompressible viscous fluid. When the motion is very slow the flow is perfectly stable, and when above a certain critical velocity eddies tend to form, and turbulent motion results, and the temperature of the material undergoing extrusion rises.

The method of carrying out the experiment was as follows:—The various die blocks were made in two halves, definitely registered, and strongly bolted together and fitted with pistons, the sections of the die-blocks being parallel to the direction of flow. The lead cylinders for the experiments were similarly formed in two halves, which were compressed in the die-blocks by the pistons, with the orifice plugged so as to render the lead perfectly homogeneous and free from the possibility of local motion. The face of one of each pair of semi-cylindrical blocks thus formed was then grooved at regular distances apart by grooves parallel to their axes. Tin wires were then placed in the grooves, and the pairs of semi-cylinders again compressed in the die-block with the orifice plugged, which had the effect of fixing the wires securely in the grooves by compressing the lead round them, after which the plug was removed from the orifice, and the extrusion of the lead cylinder carried out. The compression and extrusion of the lead cylinders was done under the compression heads of a fifty-ton testing machine, which allowed stress-flow curves to be taken at various speeds of extrusion. The tin wires retain their position in the lead blocks, and show clearly the direction and general conditions of flow. The flow of lead in a cylinder with sudden concentric enlargement in the direction of flow, also the flow past a solid of revolution, was investigated, and in both cases the motion was found to be of stream-line order, as in the case of extrusion from an orifice. The effect of punching a solid block with and without shearing out the wad was also investigated, and the stream-line flow determined. The behaviour of other metals under suitable conditions was investigated, and the same results were found as with the lead.

DUBLIN TO LOSE SIR HUGH LANE'S PICTURES.

We regret that Sir Hugh Lane's munificent offer to present his collection of pictures to Dublin, and to give £45,000 towards the erection of a gallery on the site of the dilapidated Metal Bridge across the Liffey, which at present disfigures the view from O'Connell Bridge, was finally rejected on Monday at a special meeting of the Dublin Corporation. Another meeting is convened for Monday next to reconsider the question, but in the present spirit of the majority of that body there seems little hope for a reversal of last week's decision.

Councillor Miss Harrison moved a resolution guaranteeing towards the expenses of the gallery a sum equal to the difference between £22,000 and £45,000, approving of the Metal Bridge site and of Mr. E. L. Lutyens's designs for the gallery, and accepting Mr. Lutyens as architect in view of Sir Hugh Lane's offer guaranteeing any sum over £45,000 that may be required.

An amendment that no proposal for the erection of a municipal gallery could be contemplated which excluded Irish architects from competing was put, and 21 voted for and 21 against it. Several members objected to the employment of an English architect, and questioned the intrinsic art value of the pictures. The original motion was then put, and 21 voted for it and 23 against. The resolution was therefore lost by a narrow majority. The question has given rise to much correspondence in the Dublin newspapers. One of the writers, Sergeant Sullivan, hit the nail on the head when he said that if the opponents of the scheme were consistent, they would admit no picture to the gallery that was not painted by a Dublin member of the Union of Painters and Glaziers.

Dublin's loss will be London's gain—Sir Hugh Lane's collection of foreign pictures will be a welcome sight at the National Gallery to all who care for modern art. It has been the reproach of the National collection that no examples by Manet, Daumier, Puvis de Chavannes, and many other modern French masters can be seen there or in any other public gallery in London.

The pictures which Dublin has lost include some of the finest examples of these and other modern Continental painters. The collection probably numbers about forty pieces, many of considerable size. The following list of the chief examples will probably be found to be fairly accurate:—

Manet: The large portrait of Eva Gonzales seated at an easel, and the beautiful Tinterns Garden.

Degas: Group of a woman in a striped dress and a child seated on the sands.

Puvis de Chavannes: The large "Le décollation de S. Jean" and a small, but very beautiful, toilet scene.

Daumier: Don Quixote.

Corot: "Palais des Papes, Avignon," and a small green landscape.

Rousseau: A moonlit landscape.

Boudin: A seapiece.

J. Maris: The Birdcage—an early picture.

Courbet: The snowstorm, one of his strongest works, a forest scene, and another piece.

Monet: A snow scene.

Renoir: The large group "Les Parapluies."

B. Morisot: A portrait.

A. Stevens: A picture of a lady seated, touching a grotesque lion.

There are also several small pieces of sculpture by Rodin and Carpeaux.

SYNDICALISM IN CHICAGO, AND ITS LESSONS.

Just now, when the somewhat feebly-conceived attempt of the Painters' Union to enforce its demands by enlisting the aid of perfectly contented members of other trades is fizzling out, some recent experiences at Chicago, given in the Master Builders' Association of Boston July Monthly Letter, are not without interest.

At Chicago a strike, and consequent lock-out, in the building trades has been settled through a conference of representatives of the Building Construction Employers' Association and the Building Trades Council. The trouble arose as the culmination of a long series of strikes, which have been unmercifully annoying the contractors of Chicago, most of which resulted from jurisdictional fights between various unions. Another irritating condition which for several years beset builders in that city was the question of "maintenance men." These were men whom the Union of Electrical Workers demanded should be "employed" upon a building under construction ostensibly to see that the electrical equipment was maintained in working order. The custom first began in caisson work, where it was the plea that the safety of the workers demanded it. The custom then spread to other branches of electrical work, so that two or three men would be employed on the larger buildings with apparently nothing to do but draw their salaries. One or more other trades had made attempts to secure "maintenance men" also.

As long ago as October, 1909, the Builders' Association passed resolutions refusing to accede to the demands of the electrical workers for maintenance men, and last spring this resolution was re-affirmed and concurred in by the Chicago Masons and Builders' Association, the Carpenter Contractors' Association, and the Building Construction Employers' Association. As a result of this united action, and the discharge of "maintenance men" on one of the larger jobs, there was a sympathetic strike of other building trades, it being claimed, however, that they were striking in sympathy with marble setters, who had been out since March 1. The Building Construction Employers' Association thereupon notified the Building Trades Council that if the men in the trades involved did not go to work within forty-eight hours that they would lay off all men in their employ. As the men did not return to work, the lock-out, involving many thousand men, followed, and continued several weeks, being terminated by the agreement

arrived at by the joint conference committee above referred to.

According to the terms of the agreement, (a) many jurisdictional disputes are settled, (b) the electrical "maintenance men" are not to be forced upon a contractor against his will, (c) the marble setters and helpers secure an increase in wages of 25 cents and 15 cents per day respectively, and (d) a permanent joint arbitration board is to be formed to settle any future disputes which may arise. Those interested in Chicago building affairs are congratulating themselves upon the successful conclusion of the matter, and appear very optimistic, feeling that a new era has been entered upon in the building industry favourable to both employer and employee. It is our sincere wish, continues the "Monthly Letter," that the future may see this expectation realised, and that some failure of the parties to fulfil the agreements does not upset the apple-cart again. In passing, it may be noted that trades which struck sympathetically with the marble workers in Chicago did so in violation of agreements whereby they obliged themselves to work continuously, and to refer all questions in dispute to a standing committee of arbitration for definite adjustment! Will history repeat itself? The maintenance of such compacts is precarious. This results from the fact that industries are organised in separate camps, which too easily put on an attitude of hostility to each other. This is fundamentally wrong. The manual workman and the director of his energies (i.e., the employer) are factors of one trade, each absolutely essential to the purpose of the trade, and therefore they should be united in one organisation, making a perfected trade union at peace within itself. That this sort of thing is possible the "Massachusetts Societies of Masters and Craftsmen" have successfully proved.

Another point emphasised in connection with this Chicago strike is illustrated by the following text extracted from the Monthly Bulletin of the Building Construction Employers' Association:—

> The architects of the city whose work was stopped by reason of the difficulty should be extended a great deal of praise for the manner in which they treated the members of the association. In no instance did they fail to assist and leave things alone when it was put up to them, and in many instances without having to call their attention to it, they just left "matters alone."

This illustrates the all-powerful weight of the owner's influence in labour difficulties in general, for the architect is simply the owner's agent, and the attitude of the owners is reflected in the statement above. They were educated up to a rational view of the situation, or at least were amenable to reasoning from their advisers, the architects.

Apropos of the above, continues the "Monthly Letter," is it not a pity that owners do not always take a positive stand in opposition to the persistent, irrational, and totally unreasonable attitude of trade unions, especially in what is called "sympathetic action?" Instead of doing so, owners quickly and weakly succumb to pressure, and, worst of all, they frequently attempt to crowd or discipline the very party they should strenuously uphold. One of our members has recently been subjected to this treatment. This member had contract for certain work on a public building for a near by city; he was performing his work entirely in accordance with the contract; the workmen in other trades engaged on this building simultaneously stopped work, acting under direction of the officials of their various unions—the "reason" given being that our member was "working open shop." The mayor of the city and the architects thereupon proceeded to jump upon our member instead of jumping upon those who had stopped work. A concern that was living up to its contract was singled out for punishment. Officials and agents of the city persistently tried to compel our member to unionise his work; in other words, to abandon authority in the conduct of his business. It is pleasant to record that up to the present time this wholly unworthy attempt has been frustrated by and through the agency of this association. The mayor and the architect have been informed that this association will not permit its member to be abused, but will defend him to the uttermost through the courts.

AMERICAN QUANTITY SURVEYORS.

The August "Monthly Bulletin" of the "Quantity Surveyor," which is conducted under the auspices of the American Institute of Quantity Surveyors, is small in size; but there are worse crimes than that in the world. We were all small once. What a good thing it was we grew! The "Quantity Surveyor" is not being run for profit, but to support a principle.

Any architect, contractor, engineer, or other interested person who is in favour of better estimating methods, is eligible as an associate member of the American Institute of Quantity Surveyors. The total expense will not exceed three dollars a year, including this Bulletin service every month. Nation-wide co-operation of friendly character is cordially invited. The success of such a movement means greater confidence between all concerned, and better work on buildings, as the principal gambling element, under present methods, will be removed.

A number of San Francisco architects, engineers, and contractors held a preliminary meeting at the Palace Hotel on Tuesday evening, August 12, for the purpose of considering matters of interest appertaining to the quantity system of estimating, and to arrange for a San Francisco Council of the American Institute of Quantity Surveyors, a national association now in course of being established by persons interested in this subject throughout the United States. The meeting was called to order by Mr. William Mooser, who opened the proceedings with a brief outline of the present conditions of bidding, and the principal aims and objects of those who are interesting themselves in an effort to bring about a better method of estimating throughout the United States. Organisation was effected, and the following temporary officers were elected to serve until by-laws were framed and adopted—viz.: President, William Mooser; vice-president, G. Alexander Wright; secretary and treasurer, William H. Ferguson. Working committees will be appointed by the chair.

The objects of the society are to encourage better methods of estimating and dealing with bids, and to provide a forum where architects, engineers, contractors, and others may, as associate members, meet upon common ground and discuss methods of bidding upon contract work, and similar problems affecting the cost of buildings. The following report was then read, outlining the efforts made in the past to call attention to the necessity for adopting more modern estimating methods, and containing some suggestions for further action. The society will meet on the third Wednesday in each month, and notices will be sent to each member. Eighteen applications for membership were received, and we understand that other applications have since been made. Some members present seemed to think that any system would be better than the present method.

"It was in February, 1891," said Mr. Mooser, "over 20 years ago, in this city, that I received my first impressions of our estimating methods. Stranger as I then was to many things, some of which I afterwards partially learned in the University of Experience, I was astonished to find what an enormous waste of time and effort was incurred by contractors in figuring 'Quantities,' with, I may safely say, a looseness of method and a guesswork that was truly appalling to one fresh from an older community, where every item in a building, down to a solitary mitre on a 1 by 2 moulding, would be taken off and accounted for in an estimate.

"To-day we find conditions have improved so far as relates to the demand for greater care in the contractor's estimating department, the 'hub' of the whole business, from which should radiate the proper cost of work, ready to be handed to the architect in the form of a bid, and which is, or should be, an exemplification of three important elements—first, accurate quantities; second, living unit prices; and, thirdly, a legitimate profit. But these conditions are even now seldom fulfilled. The competition in estimating so called, between bidders is still based largely upon the quantity of material required, and I am more convinced to-day than I was twenty years ago that a complete change is necessary in our methods of estimating and handling bids, in the interests of all concerned, for with all our boasted progress we are still away behind the times in our estimating practices.

"It is, nevertheless, encouraging to find that among those architects, contractors, and engineers who have taken the time to consider the question, it is now recognised that the method in use is simply an inheritance that has come to us from past ages when the master mechanic leisurely did his figuring at night by the aid of his tallow candle, and when there were no such things to bother him as numerous blue prints or long typewritten specifications. It is no wonder, then, that such an obsolete, wasteful process is tottering to-day, and must eventually give way to those newer, better, time-saving, and saner methods such as are demanded by American progressiveness, and by the necessities attending improved methods of construction, which follow each other in rapid succession. And so a change of sentiment in this particular has of late years been developing. Slowly, perhaps, but none the less surely, and, gentlemen, the time is approaching when owners must take heed of the 'writing on the wall,' a notice from the bona-fide contractors, which will read, 'In the interests of all concerned, we decline to give free bids any longer, unless accurate bills of quantities are furnished for our use.'

"And this change will be brought about largely by the justice of it, for the protection of both owner and contractor, accentuated to some extent by national development and our characteristic desire to progress, a faculty with which we, as individuals, are endowed, and usually use, when we appreciate the direction in which the best results are obtainable. And then there is that ever-present desire to save time, effort, and unnecessary expense.

"One may be excused just here, perhaps, for mentioning, for the information of those gentlemen who are not already acquainted with the fact, that to San Francisco belongs the credit, or whatever you may choose to call it, of being the very first city in the United States in which systematic effort was ever made to supplant the old style of figuring, for the modern one of estimating upon bills of quantities, for it was in May, 1891, when, in the exuberance of comparative youth, I suppose, the writer was first tempted to address a body of contractors in this city upon the subject of quantities, and, perhaps unwisely, undertook to point out to these gentlemen the 'error of their ways'! Well, as I said to the General Contractors' Association the other day, I escaped with my life. But there were a few present, very few, who thought there might be something in this quantity business after all, with the result that some carefully prepared bills of quantities were secured by one or two bidders, and some of the largest and most profitable contracts ever awarded in those days were afterwards obtained as a result of these quantities. It was also in 1891 that I was invited to address the San Francisco Chapter of the A.I.A. upon this quantity system, and which I did. The educational process thus commenced, interest was aroused, and was destined to continue. For some years after that no opportunity was lost to talk quantities to every architect and contractor in this city who had time to, or cared to, listen. Many letters and some literature were sent broadcast. Articles appeared in the professional Press and building papers, and many were the letters received from Eastern contractors, and from architects also, approving my efforts and urging that the fight be continued for better conditions. This was the situation then, early in 1906, when I was about ready to suggest to certain gentlemen (some of whom I am glad to see here to-night) that a Quantity Surveyors' Society be organised, so as to bring about some better

methods of estimating and dealing with bids. Something, however, which occurred on the morning of April 18 in that year, and which some of us can still recall, somewhat disturbed my plans and arrangements. My dream of better methods had a rude awakening. The objects of such a society were intended solely to encourage higher ideals and business truth. These being fundamentally sound they were bound to survive, even earthquake and fire, and as they will still continue to do. And so, as opportunity permitted, the good work was resumed, until to-day the subject of 'better estimating methods' and the adoption of some form of the quantity system, adapted to American sentiment and practice, has become a frequent and popular theme from the Atlantic to the Pacific Ocean. A word of appreciation must be expressed to those building journals, trade and professional organisations throughout this country, who have given serious thought and publicity to this subject, and are now discussing the feasibility of adopting this method of submitting bids. Scores of letters have been received endorsing the system which I have advocated for so long, and which must eventually prevail, as soon as contractors, architects, engineers, and owners once realise its great benefits to each and every one concerned.

"A national society, the 'American Institute of Quantity Surveyors,' is now in course of organisation, and a movement to establish branches, or councils, in all large cities. Very shortly such councils will be at work in New York City, Chicago, and Seattle. As the movement grows other cities will undoubtedly have similar councils. It is proposed that the chairman, vice-chairman, and secretary of each council shall represent their council in the national body, and that one additional member of each council for every ten members it possesses in good standing, shall serve upon the national board, to insure efficient representation. The matter of constitution and by-laws is receiving consideration. When adopted a copy will be sent to each council. As conditions, trade customs, etc., vary in different parts of the country the by-laws will be largely suggestive, leaving each council free to make changes that local conditions and self-government may seem to justify.

"Each council to have upon its board a competent local attorney who has had experience with the Legislature of the State, and who may be willing to act in an honorary capacity. The services of such a gentleman practising in New York City willing to serve on the national board as chief counsel, have already been secured. The objects of each council to be:

"(1) To encourage better methods of estimating and dealing with bids.

"(2) To provide a forum where architects, engineers, contractors, and owners (as associate members) may meet upon common ground and discuss estimating, contract, and similar problems.

"Councils will be expected to take up the local standardisation of measurement in the various trades, so that all local engineers, architects, quantity surveyors, contractors, material men, etc., may adopt uniformity in descriptions and measurements. Encouragement should also be given to the standardisation of all specifications, thereby reducing their length, without loss of efficiency. It has been suggested that the attorneys of councils, in conjunction with the chief counsel on the national board, will constitute the legal department of the institute, having the following, among other objects, in view:

"First.—To promote Bills before the State Legislatures making it compulsory that when bids are invited for new State buildings, etc., that guaranteed bills of quantities shall be furnished to each bidder, and that such quantities shall represent the quantity of work to be contracted for.

"Second.—To also promote licensing Bills providing for the examination and registration of persons who desire to practise as quantity surveyors.

"Third.—To protect the interests of the institute and its councils. Arrangements have been made for the publication, under the auspices of the national society, of a printed bulletin of information about the quantity system of estimating, and which will be mailed to each member each month.

"Such, then, are some of the objects which it is considered can be attained. The whole trend of the quantity system of estimating is to promote confidence between owner, architect, and contractor, and which should always exist. It is, in the long run, against the interests of an owner to put a number of contractors to the trouble of figuring out quantities for a building which he may, or may not, ever build. A contractor cannot consistently be blamed for trying to break, even after a contract is signed, when he finds that certain quantities have been omitted. Our wretched 'methods,' and not the contractor, should be criticised in such cases.

"A great deal more might be said, but it is believed that the time has arrived when most men who think right, and wish to do right, can see that a change in our present estimating system is now necessary. Some way whereby a common understanding which shall form a fixed and true basis of a contract shall be adopted. Any person who approves of this much should be eligible for associate membership in the local councils of the American Institute of Quantity Surveyors."

Readers who approve of the concerted effort being made to bring about better estimating methods, as suggested, are requested to communicate with the secretary, 571, California-street, San Francisco.

CONDITIONS FOR COMPETITIVE DESIGNS OF GOVERNMENT BUILDINGS, OTTAWA.

Some time since the Public Works Department of the Dominion of Canada decided to add to the present preliminary and departmental buildings and provide for complete departmental equipment and courts buildings. In the courts building it has been decided to provide for the Supreme Court, the Exchequer Court, and the Royal Commissioners' Court. The new buildings are to stand on a bluff of the Ottawa River and the west of the present departmental group. Mr. Edward White, the English landscape architect, prepared a ground plan which has been accepted by the Government. In order to provide for the necessary buildings, it was decided to arrange for the submission of competitive plans, and Mr. T. E. Colcutt, past president of the Royal Institute of British Architects, together with Mr. J. H. G. Russell, president of the Royal Architectural Institute of Canada, and Mr. J. O. Marchand, A.D.G.F., member of the Royal Architectural Institute of Canada, were appointed assessors to draw up the conditions and instructions to the competing architects and to select from the preliminary sketches six designs. The authors of these designs are to be invited to submit final designs, and each of the five unsuccessful architects submitting a design in accordance with these conditions will receive an honorarium of 3,000 dollars.

CONDITIONS.

Promoter.—The Government of the Dominion of Canada promotes this competition, and is hereinafter referred to as the Government.

General Plan.—The Government invites architects to submit preliminary sketch designs in competition for the erection of certain buildings, which are to be included in the scheme for the development of complete departmental and courts buildings. The ground floor area of the departmental buildings must cover a space of about 200,000 superficial feet, this superficies to include all walls, outer and inner, corridors, staircases, lavatories, etc., the entire scheme to be shown on the block-plan, together with the lay-out of the adjacent grounds as terraces, footwalks, etc., etc.

Buildings to be Erected at Once.—It is the intention to build at once a certain portion of this complete scheme, viz.:—The Supreme Court, the Exchequer Court, the Railway Commissioners' Court, and the necessary offices in connection with these courts, as hereinafter scheduled, also a block, or blocks, of departmental buildings covering a ground floor area of about 100,000 superficial feet, and providing about 500,000 superficial feet of floor area, including all walls, etc.

Scheme of Site.—A scheme dealing with the site which is acceptable to the Government is shown. This plan, however, need not be considered as a final solution of the question.

The Government desires the competitors to have a perfectly free hand in the development of their designs.

Competitors.—The competition is restricted to architects who are British subjects, practising in the British Empire.

Delivery of Designs.—The designs in the first competition must be delivered in Ottawa (carriage paid) not later than twelve o'clock noon, second (2nd) of January, 1914, addressed to the Secretary of the Department of Public Works, Ottawa, Ont., and any design delivered later than that date shall be excluded from the competition, except only where delay is proved to the satisfaction of the Minister to have arisen in transit. The date for sending in the designs in the final competition will be determined hereafter, but a period of at least three months will be allowed for the preparation of such designs.

Award.—The award in the preliminary competition will be made within twenty-five days of the date fixed for receiving the designs, and a similar time will elapse between the time for receiving the final designs and the award to the successful architect.

Return of Drawings.—The whole of the designs submitted in the first competition will be returned to their authors, and will be seen only by the assessors and the Honourable the Minister of Public Works and his Deputy. No description or illustration of these designs shall be published or in any way made public.

Exhibition of Designs.—The final designs shall be publicly exhibited in Ottawa, with the names of the authors marked thereon, for seven or more days immediately subsequent to the award, and they shall be the property of the Government.

Inquiries.—All inquiries regarding the competition shall be addressed to the Secretary of the Department of Public Works, Ottawa, Ont., and all such inquiries must be typewritten and submitted on plain paper, without heading or signature, and must be received on or before September 12, 1913. They will be answered by identical communication to all competitors.

Exclusion of Designs.—No competitor shall submit more than one scheme for the solution of the problem in this competition.

Any design that does not give substantially the accommodation asked for will be excluded. The submission of drawings under these conditions shall signify the acceptance of all the conditions hereinbefore and hereinafter set forth.

Drawings Required.—The designs in the first competition are to be illustrated by plans, sections, and elevations drawn to a scale of 16ft. to 1in. (excepting block plan), and must include the following plans:—

a) Plans of each floor, except where one floor is the duplicate of another floor.

(b) Three elevations.

(c) Sections on such lines as may best show the elevation of the floors of each group of buildings affected by the varying levels of the site.

(d) A detailed drawing to a scale of 2ft. to 1in. of some portion or bay of the building as may best illustrate the general design, such detail not to exceed in length 30ft. or 35ft. on the plan.

(e) One perspective drawing not longer than 36in., which must conform in all particulars with the elevations and also with the terraces, etc., as may be shown on the block plan.

(f) A block plan, to the same scale as the plan of the site enclosed with these conditions:—

This block plan to show the whole scheme, as stated in clause two of these instructions.

A design would not be excluded from the competition should the authors exceed to a



THE SITE AS IT IS AT PRESENT.

moderate extent the outside line of cliff either for the building or the terraces surrounding it. The extra cost of any such projection, entailing, as it would, the building of retaining walls, etc., must be considered, however, as of much importance.

It should be borne in mind that some of the streets leading into Wellington-street may in the future be developed into important thoroughfares.

A space of at least 300ft. must be maintained between the proposed buildings and the present Departmental building. This space can be formed into terraces, etc., as competitors may think it necessary for the proper development of their designs.

Designs. The second competition to be illustrated as before-mentioned in Clause No. 15, and to consist of: -

(a) Plan of each floor, except where one floor is the duplicate of another floor.

(b) Three or more elevations illustrating the principal fronts.

(c) At least three sections, as required, to fully illustrate the designs.

(d) Detailed drawings of one external and one internal bay to a scale of 2ft. to 1in.

(e) One or two perspective drawings of the exterior. The length of such drawings not to exceed 36in. Perspective drawings must conform in all particulars with the elevations, and also the position of terraces, etc., as may be shown on the block plan.

(f) A block plan as before described.

Description of Drawings.—The whole of these drawings may be on paper or tracing paper (except in the case of the final designs, which must be on paper); all to be mounted on cardboard and without margin. They may be in India-ink or pencil. The floors to be coloured a light tint of India-ink. The walls in plans and sections to be of a darker tint. A flat grey tint may be put on the door and window openings of the elevations and sections, if desired. No ornamental features, such as cornices, floor patterns, etc., to be shown on the plans. Pencil or light grey wash may be used at will to present work on different planes, openings, shadows, and the texture of materials in the elevations and sections.

All rooms and corridors shown on the plans shall have dimensions figured thereon.

The titles of drawings shall be in Roman capitals, all other lettering, notes, and figures shall be in plain block type. The perspective drawing, or drawings, may be rendered in pen and ink, in pencil, or in monochrome wash, and may have a margin, not over 3in. in width. The drawings shall be sent in a plain portfolio.

Report and Schedule.—Each design to be accompanied by a short descriptive report, unsigned, either printed or typewritten on plain white paper of folio size, briefly describing the arrangement of the buildings and the materials to be used. The competitor shall present a schedule giving the total area and cubic contents of each block of buildings. The basis of the calculations for the cubic contents shall be taken from a point 2ft. below the finished floor of the lowest story used for offices to a height of 5ft. above the level of the topmost ceiling. The cubic contents not to include terraces or terrace walls.

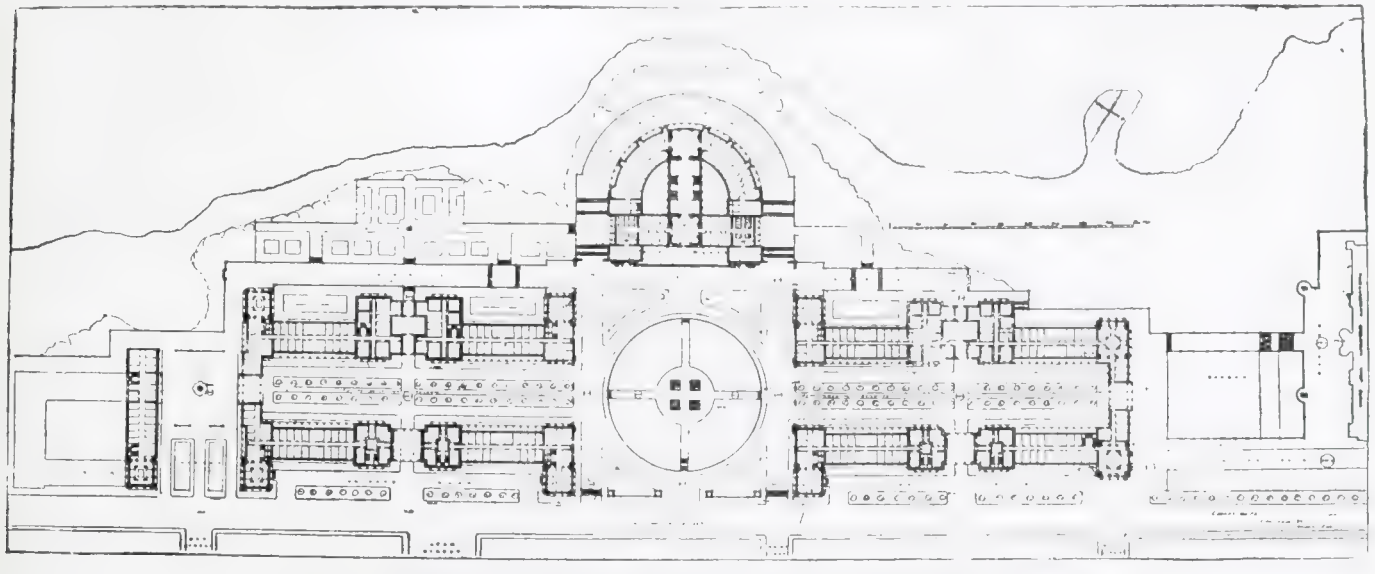
Name of Author.—The design, together with the descriptive reports, must be sent in anonymously, and the author's name and address, together with a declaration that the design has been prepared by himself and his staff in his own office, with the exception of the perspective (which may be prepared outside), must be enclosed and sealed in the envelope supplied with these conditions. Form of declaration required is enclosure No. 3. The case, and each of its contents as are unpacked, will be marked by an officer of the Department of Public Works with a number for identification; but no distinguishing mark, motto, or device is to be put on the drawings, report, envelope, or case by the competing architects or their agents. The sealed envelopes will not be opened until after the award has been made.

Disqualification. Any infringement of these regulations, or disclosures of identity of authorship to the assessors individually or collectively, or through any member of the Government, shall be held sufficient ground for exclusion from the competition.

Employment of Successful Architect. The author of the design placed first by the assessors in the final competition shall be employed by the Government as architect for the work to be done at once, as set forth in clause three of these conditions, provided that he can satisfy the assessors as to his possession of sufficient experience and ability to undertake and carry out the work to a successful issue. In case of his inability to so satisfy the assessors, it shall be within the power of the Government to call upon him to nominate, and he shall nominate, an associate architect, whose professional status and experience shall be such as to satisfy the assessors, and who shall be remunerated by the Government; but the amount of such remuneration shall be deducted from the commission otherwise payable to the successful architect.

Office.—The successful architect must maintain an office in Ottawa during the progress of the work.

Architect to Revise Drawings.—The architect who shall be awarded the work shall, if required, make such changes in his com-



THE SUGGESTED ARRANGEMENT OF THE GOVERNMENT BUILDINGS.

petition plans as shall be necessary to meet the views of the Honourable the Minister of Public Works.

The Architect's Services.—After the plans have been finally accepted, the architect shall prepare working drawings and specifications and shall supervise the construction of the buildings, and, subject to the approval of the Honourable the Minister of Public Works, he shall have control of all matters of arrangement, design, and execution.

Drawings and Specification.—All drawings and specifications, ss "instruments of service," shall remain the property of the architect, but one record copy on tracing linen of all contract drawings, together with a set of specifications, all amended to correspond with the work as carried out, shall be furnished to, and be the property of, the Honourable the Minister of Public Works on the completion of the work. Whenever the Government decides to erect other buildings, as set forth in section 2 of these conditions or otherwise, the Government shall have the absolute right to use such drawings and specifications in any way it thinks best.

Clerk of Works.—The architect shall appoint one or more clerk of works, approved by the Honourable the Minister of Public Works. The architect shall regulate the duties of each clerk of works, and shall have power to discharge him. Each clerk of works shall devote his whole time to the works, and shall be paid by the Government.

The Engineers and the Architect.—The Honourable the Minister of Public Works shall appoint a professional engineer, or engineers, to install the power plant, heating, ventilating, and illuminating systems. The fees of such engineering, entailing advice, specifications, and superintendence of the installation, shall be paid by the Government. The architect shall consult with the engineers on the general lay-out of their equipment and the construction of the ducts, foundations, and other matters incorporated in the architect's drawing and specifications. The architect shall receive 2½ per cent. commission on the cost of all the contracts for the aforementioned engineering work as a recompense for his services in consulting with the engineers and meeting their requirements in the arrangement of the building, as shown on his plans and described in his specification.

The Architect's Commission.—The architect shall receive for his services the usual commission of 5 per cent. on the whole cost of the building proper, as distinct from the engineering work above described. If no instructions are given him to proceed within twelve months from the date of his selection, or if the proposed works are abandoned by the Government, the selected architect shall receive payment for his services in connection with the preparation of the competition drawings (including the changes provided for in sections 23 of these conditions) of a sum equal to one and one-fourth per cent (1¼ per cent.) on the amount of the estimated expenditure. If the said architect shall be subsequently employed, the one and one-fourth per cent. (1¼ per cent.) previously paid to him shall merge in his ultimate commission.

Character of Proposed Building.—The style of the building is left to the discretion of the competitors. The construction shall be fireproof throughout. The precise materials to be employed can only be determined later. The competitors, however, shall prepare designs for buildings to be faced with Canadian stone. The buildings generally are not to exceed five stories in height. Vault accommodation for storage and space for power plant need not necessarily be considered, as there will be ample space in the basements. It will not be necessary for competitors to show a basement or sub-basement plan, as this space is to be in excess of that called for in the schedule.

TOTAL REQUIREMENTS FOR ALL THE DEPARTMENTAL BUILDINGS TO BE EVENTUALLY ERECTED ON THE PROPOSED SITE.

A total floor area, including all walls, corridors, lavatories, etc., of about 1,000,000 superficial feet. The arrangement of offices to be in large units for sub-division or rearrangement, as may be required.

REQUIREMENTS FOR COURTS BUILDING.

The competitors must use their discretion as to placing court rooms, either on the ground or first floor.

SUPREME COURT.

Court room	1		2,500
Conference room, near Court room, and to contain bookcases for Judges' Library	1		800
Registrar's room	1		400
Registrar's stenograph, adjoining Registrar	1		300
Clerk of the Court, adjoining Registrar	2 in all		800
Vault in connection with above			150
Registrar's Court (Chambers)	1		600
Judge's private rooms	9	400	3,600
Reporters' room	2	400	800
Sheriff	1		300
Secretaries to Judges	2	400	800
Waiting room, for Counsel to consult with lawyers, must be close to Court room	1	—	400
Barristers' and Counsel's room, wardrobes, basins, &c.	1	-	400
Messengers' room	1		400
Library, for the several branches and to have gallery	1	-	8,000
Clerical staff	3	400	1,200
Dining-room and kitchen	2 in all	—	500
			21,950

EXCHEQUER COURT.

Court room	1		2,500
Judges' private rooms	3	300	900
Registrar's private office	1	-	800
Registrar's public office	1	—	1,000
Chief Clerk, adjoining Registrar	1	—	800
Vault in connection with above offices		—	200
Registrar's Court (Chambers)	1	-	600
Deputy Registrar	1	-	350
Stenographers	1		300
Messengers' room	1	-	500
Lunch room and kitchen	2		650
Waiting room	1	—	400
			8,600

RAILWAY COMMISSION.

Court room	2,500
Commissioners' offices and library	12,000
Secretary's and assistant Secretary's offices and record room	10,000
Traffic Department, including record room	7,000
Chief Engineer's and Assistants' offices	5,000
Fire Department	2,000
Chief Operating Officers' Department	5,000
Law Department Offices	1,500
General offices	5,000
Total	50,000

Note.—Provision to be made in addition to above floor area for corridors, staircases, elevators, lavatories, &c.

A WARWICKSHIRE TOWN PLANNING SCHEME.

Mr. Thomas Adams, a Local Government Board inspector, conducted on Friday the final inquiry under the Housing and Town-Planning Act, at Bromsgrove, into an application made by the North Bromsgrove Urban District Council for the board's approval of a town-planning scheme with reference to certain lands within the growing village of Rubery.

The scheme was explained in detail by Mr. F. T. Levens, clerk to the urban council. The present proposals provided for the construction of fifteen roads, the width of which was to be 42ft., with footpaths and green spaces on either side of the 18ft. carriageway. No wide arterial roads were suggested at present. The scheme provided for either the council making the roads and charging the owners of the land according to their frontage, or for owners themselves to carry out the work. The amount recoverable from the owners where the council did the work was up to £1 15s. per yard. The period at which the council should take over the maintenance of roads made by private owners was when 50 per cent. of the frontages had been built upon. The number of houses proposed to the acre was a maximum of twenty and an average of twelve.

Mr. R. Green, consulting engineer, gave evidence in support of the council's suggested roads. The present population of the area was 701. In his sewerage scheme he had provided pumping arrangements and purification works for 1,750, but sewerage works for from 25,000 to 30,000, as it was expected Rubery would develop rapidly in the next twenty years.

Mr. G. Salway Nicol stated that the scheme had been considered by the council of the Birmingham Architectural Association (of which he is president), and they congratulated the promoters of the scheme upon the way in which the site had been developed under the scheme. The technical and other requirements were practicable. The scheme did not interfere with any special view or natural beauty, and after carefully examining the lay-out, the council of the association found the roads had reasonable gradients, which were suitable for natural development. The council, however, suggested improvements at the corners of some of the junctions by the setting back of the buildings beyond the general building line, and by the reservation of certain plots for the purposes of public buildings, or, preferably, open spaces.

Mr. T. Bryan (secretary of the Chadwick Estate Company) said his company owned over 250 acres in the area, and the directors were of opinion that the average number of houses to the acre should be reduced to ten, and the maximum to eighteen.

On behalf of Mr. Eboral, a local owner, Mr. Smith called Mr. Osborne, architect, of Birmingham, who deposed that Mr. Eboral would by the scheme be debarred from disposing of his land on the same lines as he had already developed part of the estate. Mr. Eboral did not require roads for the development of his land, and by the time he had paid for the construction of roads his loss would be £120 per acre.

AUCTIONEERS AND THE OPERATION OF THE FINANCE ACT.

The annual meeting of the Auctioneers and Estate Agents' Institute was held at Folkestone on Thursday and Friday in last week, In his presidential address Mr. B. I'Anson Breach referred to the proposed Registration of Auctioneers. He mentioned that a Bill had been drafted with a view to the establishment of registers in England and Wales, Scotland, and Ireland, of persons dealing professionally, as auctioneers and estate agents, with real estate. It proposed to constitute a Board to be composed of representatives nominated by the Board of Trade, the Auctioneers' and Estate Agents' Institute, and the Surveyors' Institution, and a certain number of co-opted members. It was proposed, after the expiration of a period long enough to allow of all qualified persons entering their names upon the register, to prohibit unregistered persons from acting professionally as valuers or auctioneers of land and buildings; but the Bill did not seek to restrict anyone from carrying on any other branch of auctioneering or estate agency. Persons possessing the necessary professional and personal qualifications to practise would be entitled to registration. The object of the measure was to provide a guarantee to the public that persons holding themselves out to act with regard to real estate valuation, sale, and agency, should be both competent and trustworthy.

THE LAND TAXES.

Speaking of the developments arising out of the Budget of 1909, Mr. Breach said that they would all agree that there was scope for real reform of taxation—not a mere effort to wring money out of a particular class by methods which seemed devised to penalise them—but the sooner an attempt was made to bring the procedure into accord with common-sense and the teachings of experience, the better it would be both for the Exchequer and the taxpayer. In a single month, that of July last, the realisations officially registered at the Estate Exchange were, roundly, one million sterling less than in July of last year. That decrease was, to a large extent, attributable to inability to sell ground rents and other urban investments owing to the prevailing uncertainty and irritation arising in connection with the land taxes. Under the head of ground rents alone the depreciation of property must have amounted to many millions of pounds. The future was fraught with possibilities which buyers and their advisers regarded with grave misgiving. They knew that it was next to impossible to dispose of building land. In one week recently every lot offered at Token-

house Yard failed, with one small exception, to change hands, and that was a common experience. The need for an amendment of the Revenue Bill of 1913 was imperative. The suggested amendments of the Finance Act contained in the Revenue Bill, as it stood at the time it was dropped, did not go nearly far enough. For example, provisions were inserted with a view to the exemption of the small owner, whose income was under £160 a year, from the payment of increment value duty on sales of property of less than £500 in value. This seemed like a sop to working-class purchasers who had bought through building societies. The working-man, who escaped Income-tax, and whose position enabled him to participate in various kinds of State aid, was favoured; while the man with, say, £200 a year from trade or comparatively precarious employment, from whom Income-tax was taken, remained subject to the operation of the tax if he had to sell a property. Enormous damage—ruin in some cases had been brought about during the last few years. The building trade and all the industries connected with it had suffered to an alarming extent, and vast sums lent on mortgage had been withdrawn. All this had been foretold by practical men, whose views, it might have been thought, would have carried some weight in the early stages of this legislation. The avowed aims of the promoters of the Finance Act had not been realised. The taxes had yielded little or nothing to the State; they worried owners, and inflicted heavy losses upon them; and they had not stimulated, but had restricted, dealings in property. Prices had declined, but even at the lower level buyers were not eager. The tangibility of real estate made it fatally easy as a target of taxation. Given the machinery, there would be an irresistible temptation to future Chancellors of the Exchequer to use property in making up deficiencies. The national liabilities were increasing by leaps and bounds, the money must be found somewhere, and these factors were naturally taken into account by buyers of property. The sensitiveness of the market was shown in the falling off of Sales at the Mart during the second quarter of the year. The returns showed a decrease, largely attributable, in his opinion, to the anxiety of owners and investors as to the "land campaign" being resumed. It was to be hoped that the Revenue Bill of last session, which contained certain amendments, but which had to be dropped, would be introduced early next session, and he hoped it would contain a comprehensive series of amendments to the Finance Act. The need was imperative.

PROSPERITY OF THE INSTITUTE.

On the subject of Registration of Title, the president remarked that further legislation was desirable, on the lines of the recommendations of Lord St. Aldwyn's Commission, and this was promised in the Lord Chancellor's Real Property and Conveyancing Bills. The Institute continued to flourish. Its membership was close upon 3,000, and it was financially in a very sound condition. Its branches now numbered fourteen. He concluded by urging the members to act up to the high ideals of the Institute, and to see that their practice coincided with their implied beliefs and obligations as members.

STATE-OWNED RAILWAYS.

Much information regarding state-owned railways is given in a return published by the Board of Trade last Friday. Regarding British possessions, it is stated that in Australia, New Zealand, and South Africa the policy of State ownership and operation of railways has been adopted, with the result that private railways play a part which is relatively extremely small. In Canada, on the other hand, although the Dominion Government has owned and operated railways since the Confederation, State railways have hitherto formed a comparatively insignificant portion of the railway system of the Dominion. In Newfoundland by far the greater portion of the railways are State-owned, but leased to a private company.

Canada had in 1911 26,278 miles of privately-owned and operated lines, against 2,018 miles State-owned and operated, and 102 miles owned by the State and privately operated. Australia had 16,079 miles State-owned and 1,934 privately owned, South Africa 7,548 miles State-owned and 545 privately owned, New Zealand 2,808 miles State-owned and 29 privately owned, and Newfoundland 723 miles State-owned but privately operated, and 47 privately owned. India at the time had 32,839 miles of railways, of which 6,874 were State-owned and operated, 18,245 State-owned but privately operated, 1,662 owned and operated by native States, and 1,648 owned by native States but worked by companies. In 17 other British colonies and Protectorates there were 3,525 miles of railways privately owned, 2,351 miles of the latter belonging to the Rhodesian Railway operating in Rhodesia, the Bechuanaland Protectorate, and Portuguese East Africa. The only colonies and Protectorates possessing railway systems in which there are no Government-owned lines are Barbados, British Guiana, Nyasaland, the Bechuanaland Protectorate, the Settlement of Labuan, and Rhodesia.

Forty-two foreign States are covered by the return, in 32 of which the railways are owned, either wholly or in part, by the respective Governments. As regards working, the general rule is for the State itself to operate the lines it owns, but in the Netherlands and Peru the whole of the State lines are operated on lease by private companies; this is also the case with the larger part of the Brazilian Government lines. On the other hand, in Australia and Hungary a large extent of privately-owned lines are operated by the State railway administrations. The United States is not covered by the return, but it is stated that that country has 249,902 miles of railway in operation, all privately owned and operated. The returns show a total of 174,917 miles of lines owned and operated by Governments, and 424,233 miles owned and operated by private enterprise.

Belgium, Bulgaria, Egypt, Germany, Italy, Japan, Nicaragua, Panama, Roumania, Servia, and Siam are given as the countries which have practically only State systems; those in which the State-owned lines are predominant in extent but private owned lines form an important part are Chile, China, Denmark, Honduras, the Netherlands, Peru, Russia (with Finland), and Switzerland; while the countries in which privately-owned lines are predominant but the State-owned lines form an important part are the Argentine Republic, Austria-Hungary, Brazil, Costa Rica, France, Portugal, Sweden, and Turkey.

Most of the railways in the British possessions included in the return show surpluses, but the only systems where the financial results are tabulated are those in India, where of 25 lines 17 showed a gain on the year's working, while the others showed decreases ranging up to £247,201 in the case of the Madras and Southern Mahratta Railway.

THE WOOD MARKET.

Messrs. Denny, Mott, and Dickson, Ltd., report that business during August was of a dull and dragging character, for which the holiday season is perhaps sufficient explanation. At the same time the impression that the slackening in the general demand is due to the trend of the volume of trade to recede is gaining ground.

Teak.—The landings in the docks in London during August consisted of 195 loads of logs and 331 loads of planks and scantlings, or a total of 526 loads, as against 350 loads for the corresponding month of last year. The deliveries into consumption were 53 loads of logs and 268 loads of planks and scantlings—together 321 loads, against 1,199 loads for August, 1912. The dock stocks at date analyse as follows:—

Logs: Burmah and Siam, 2,363 loads, as against 1,892 loads at the same date last year; Java, 254 loads, against 307. Planks and Conversions: Burmah and Siam, 3,109 loads, against 2,432; Java, 266 loads, against 486. Total, 5,992 loads, against 5,117 loads at the same date last year. As shown by these figures, the inquiry for logs during last month was practically negligible, and although a very modest amount of planks went into consumption, the market as a whole was in a very inanimate condition.

Mahogany. This market remained very firm during August, very high prices having been paid at auction for the moderate supplies to hand. The demand, if not great in volume, remains more than sufficient for the present rate of imports. For all descriptions during August: The landings in the docks in London were 7,071 logs; and deliveries from the docks in London were 2,156 logs; whilst the stocks in the docks were 19,941 logs.

Canadian Timber. For Wane Pine the market remains very quiet, with few inquiries. The shipments of contract timber in Oak are coming forward slowly owing to the difficulties experienced in getting supplies down to Quebec. There will be no surplus over contract commitments, and the market is very firm. The shortage in supplies of Elm is very marked, and the position of holders of stock is a strong one. In Spruce, owing to the Riga strike, and the partial suspension of shipments from there, combined with the firmer freight position, prices are stronger, but the demand leaves much to be desired.

Pitch Pine.—The market is decidedly stronger, and increased c.i.f. prices are being asked by shippers. Freights continue firm, and with the deckload season coming to an end, higher rates are being asked to U.K. Stocks, especially in the North, are still heavy and selling prices remain at an unremunerative level, owing to keen competition; but with lighter imports the position should improve during the next few months

Oregon Pine.—Prices are firm and supplies are in no quarter excessive. The demand, although not large, is encouraging and the general outlook is sound.

Odessa Oak.—There has been a fair demand for wood from landed stocks and prices remain very firm.

Baltic and White Sea Goods.—The past month, owing to holidays, has been somewhat quiet as regards spot goods; but the imports have been considerable, with exceptionally big deliveries overside. The market remains very firm, and it now seems fairly certain that there will be a tendency for prices generally to advance. Shippers stock-notes are small, and the effect of so much stock being lost by the series of fires, mostly in the White Sea district, will certainly strengthen the position of holders on this side. Freights remain steady, but boats are more plentiful, which points to rates being a shade easier before the close of the season.

PREVENTING EARTH AND ROCK SLIDES.

One may well believe that earth and rock in the natural slopes of hills or mountains have been a long time in reaching equilibrium, subject, as such materials may be, to the effects of precipitation, freezing, thawing, and other atmospheric influences. That such equilibrium can in many cases be easily overthrown, engineers very well understand, and especially railway engineers. The cutting of a roadbed into the natural slope of a hill, or into the toe thereof, has very frequently resulted in the sliding of large quantities of material from the slope above, and usually repeated sliding, and the clearing out of such slides has cost railroad companies countless sums of money. A like cause—removal of material essential to maintain equilibrium—in the Culebra cut of the Panama Canal has resulted in slides of enormous quantities of material into the excavated channel, and the nature and extent of the trouble which these slides will cause in the future, if they continue (and there is no reason to suppose that they will not continue unless a remedy can be found), is a matter of no small concern to engineers and others who have given the subject careful thought.

In a paper on "Suggested Methods of Preventing Rock Slides," presented before the Western Society of Engineers during May this year, Mr. Geo. S. Rice proposes certain

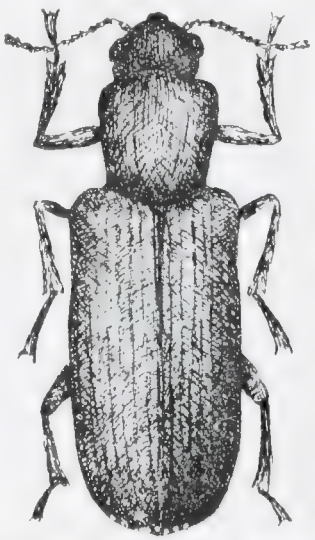
methods of treating subterranean strata to prevent rock slides. The particular instances of heavy sliding which he cites as illustrations are the sliding of the whole side of Turtle mountain upon the town of Frank, Alberta, ten years ago, and the recent slides into the Culebra cut of the Panama Canal. In both of these instances the sliding material was rock, and the cause of sliding was the disturbance of equilibrium by the hand of man. While in most cases of trouble to railroads from slides the moving mass has been earth of some sort (usually clay), or a mixture of earth and rock, especially in tunnels and in deep through cuts, yet we think that these proposed remedies and the discussion of them found in the paper may be of interest from the standpoint of the railroad engineer.

Briefly stated, the methods which Mr. Rice proposes are, in one case, the cementation of fissures or other cavities in the rock, which has been practised to considerable extent surrounding the lining of tunnels and shafts; and the anchoring of toe-walls into firm material beneath the slope, by means of strong rods placed in drilled or bored holes. The holes are sprung at the bottom, by shooting, and then filled up with concrete. From a construction standpoint there is nothing very difficult or bold in this latter method, the main consideration in the prosecution of the work being that of the expense involved, and the efficacy of such a method should be demonstrable by experiment.

The anchoring of a retaining-wall at the toe of an unstable slope in a railroad cut could be undertaken by this method, and in many cases the material at workable depths below the level of sub-grade might be found firm enough to hold the wall thus anchored; otherwise it might not be able to withstand the lateral pressure of material that has a tendency to slide. In many situations of this kind, piles have been driven at the foot of slope to serve as backing for a timber cribbing, and usually such construction suffices to hold the slope. In some cases, however, the pressure has been found too great for piles to withstand unaided by some means, and in a few instances of the kind piles so driven have been backed up by heavy timbers placed underneath the track, to act as struts between piles at the foot of slope on opposite sides of the track. Drainage applied to subterranean strata of earth or rock is a method commonly resorted to by engineers to lessen the tendency of slopes to slide; but in some instances drainage is not feasible, and in any case Mr. Rice's methods would seem worthy of consideration.—*Railway and Engineering Review.*

TIMBER-BORING INSECTS.*

These insects, a considerable variety of which make our houses their foraging quarters, are well known, and one of the most important sections is that of "Wood-Borers." Wood-Borers often commit great depredations in the beams and other woodworks used in the framework of houses, as well as in floorings, articles of furniture, etc., and produce the result known as "Worm-eaten." The external indications of the presence of these destructive insects are usually twofold; small circular perforations in the surface of the wood, and little heaps of yellow dust on the ground beneath them. The perforations are the entrances to, or rather exits from, long cylindrical tunnels traversing the wood in various directions, generally in that of its length, and often to so great an extent as to leave the narrowest of partitions between the tunnels, and so reduce the whole interior to a mere network, which is so fragile that it will crumble away on the slightest touch, while the outside still remains intact except for the few perforations, and gives the wood the appearance of being almost as sound as when first put up. The beetles are not very often seen, as they spend a large proportion of their life in the burrows. During the course of their life, they pass through a series of transformation, which is called collectively "metamorphosis." First of all is the egg, secondly the lava, grub, or caterpillar, thirdly the chrysalis or pupa, and fourthly the perfect insect or imago. I will first describe the most important timber-boring insect of the whole variety—viz., the Furniture or Powder Post Beetle (Lyctus brunneus, Stephens). This small beetle, which is dark brown, and sometimes almost black, in colour, measures 2 lines in length. It is unfortunately too well known to timber merchants, architects, builders, householders, furniture manufacturers, to need much description. The female deposits her eggs on the outside, underside, and ends of the timber; the eggs hatch very quickly, and the larvæ at once commence to work into the wood. These insects are easily detected, as when boring through the timber they pass sawdust through them, which is usually collected in small heaps. One instance where it is almost impossible to detect them before the damage is done is when they commence boring underneath the boards, joists, etc., of buildings. They cannot be noticed until the timber begins to fall to pieces. It is difficult to say with accuracy how many broods of these insects there are in a year, but from



Lyctus Brunneus ("Furniture Beetle")

my experience I should say that there are four. However, careful consideration will have to be given to this matter before it can be definitely settled. The perfect insects are found in the timber all the year round. Occasionally in hot weather they may be seen emerging in large numbers from wicker-work and rattan furniture, and thence transferring their attention to any kind of timber that is handy. The back of book-cases, cupboards, and the inside woodwork of pianos are particularly liable to attack. Ordinary table-legs and wicker-work furniture seem to be favourite breeding-places for these insects. Should these insects be noticed in numbers on the curtains and blinds of houses, it would be advisable before they commence their boring operations to have the whole place fumigated with hydrocyanic acid gas or bisulphide of carbon. Several houses have recently been treated with this process, and the results have been most satisfactory. It would be advisable when using these chemicals to obtain the services of an expert, as great care is required in using them. During the last few years, this insect has undoubtedly made much headway in many parts of Australia, and in this State we have had our share of its depredations, principally owing to the fact that badly-infested timber, tool-handles, bamboo furniture, etc., have been allowed to be imported into Australia. It has been stated in the Press and by others that imported timber on arrival here is infested on the wharves, but such is not the case, as I have examined large shipments of timber on arrival here, and found them to be badly infested with these insects. This beetle is found in most parts of the world, and has been known to science since 1862. It was probably first introduced into Australia in wicker-work, rattan, or bamboo furniture, tool handles, or timber from abroad. I have seen wicker-work baskets absolutely crumbling away through the work of this borer, and it is from such articles that houses are often infested, and no end of trouble caused. Not long ago I was asked to visit a house to see a clothes-basket, which I was told was full of grubs. On visiting the store room where the basket was kept, I noticed a sawdust-like material falling from the basket, and on pressing the sides it completely collapsed. The insects had eaten out the centre of the wicker-work, leaving only the shell, and had thence transferred their attentions to something else. As coconut matting was on the floor, it was removed to see if the insects had started on the flooring boards. Nothing could be seen on the top of the boards, but on opening the cellar and examining the underneath part of the boards it was found that they were completely riddled with these insects, and in a short time would have collapsed. These insects prefer to work in the dark, much after the manner of white ants, and it would be advisable to have manholes in the ceilings of all buildings, so as from time to time an examination of the roof supports could be made. One fine house in particular, which I visited close to Melbourne, had nearly every joist in the roof attacked. After attacking the joists, the borers had transferred their attention to the furniture in the dining and other rooms. In this instance the wood had been affected before it had been placed in the building, as the house had only been erected a short time. However, all the infested timber had to be taken out, and replaced by the builder at his own expense. In my opinion, all timber, tool-handles, bamboo blinds, wicker-work, and other furniture arriving here from abroad should be examined on arrival, and if found to be badly infested with borers, it should be condemned and destroyed; but if only slightly affected, it should be treated with some of the remedies which I will enumerate at the end of these notes. It may not be generally known that the Furniture Borer (Lyctus brunneus) is proclaimed under our Victorian Vegetation Diseases Acts, so the departmental inspectors will sooner or later be called upon to make an inspection of the timber yards in Melbourne and the suburbs, as the borer is certainly on the increase, and is causing considerable damage to public and other buildings in the city and elsewhere. Architects, builders, and others should carefully examine all timber for building purposes. All the hardwood timber that I have seen affected with these insects has only had the sapwood attacked, so if our Victorian and Tasmanian timber merchants see that the sap is removed from the hardwood, builders and others need have no fear in using this fine timber. I wish to make it clear to all that the furniture borer attacks almost any kind of timber, especially the softer kinds, and does not confine itself to the sapwood only. As stated above, hardwood timber appears to be one of the very few timbers in which the sapwood alone is attacked. These borers often attack old timbers in dwellings, and in a very short space of time reduce them to sawdust. Examples of infested timber taken from dwellings can be seen at the Entomological Museum connected with the Department of Agriculture. Many statements have been made that borers only attack hardwood, but such is not the case. They will attack almost any kind of timber, such as hickory, cedar, N.Z. kauri, blackwood, ash, deal, oak, and many others. The beetles and their larvæ feed in the timber As the results of the Powellised wood process against white ants have been so successful, there is no doubt that the same process would be successful against timber borers. The difficulty experienced in destroying the different kinds of wood-boring beetles in the various stages of their existence is very great, because in some cases the damage is done before the insects are noticed. In some cases the wood is infested with the larvæ of the beetles before it is cut up and used for building purposes, or made into

* A paper read before the Royal Victorian Institute of Architects by CHARLES FRENCH, jun., Government Entomologist, June 2, 1913.

furniture. All timber should be dried as soon as possible, and not allowed to remain closely packed in timber yards for any length of time. Unfortunately, some timber merchants allow the timber fresh from the forest to be packed with timber which has lain in the yard for a considerable length of time. This is a bad habit, as it is sometimes from such places that infestation occurs. A good system, which is adopted in Tasmania, is to allow the timber to remain in the open air for a period of about 18 months. This allows the hardwood to get thoroughly dried. In Victoria, there is a process of artificially seasoning timber, which is called the House Process. The inventor, Mr. House, of the Forest Department, Melbourne, states that the process comprises an insulated chamber into which the stacked timber is run on trucks, and subjected to moist and dry heat from a system of steam pipes and cells, the temperature and humidity being regulated by drop doors and ventilators. The chamber and its accessories form practically an easily adjustable machine, saturating the timber, washing out the free water in the cells, and the other chemicals of the sap of green timber, and so doing Nature's work of five years in sixteen days. From the time the timber is cut from the tree until it is dried ready for use occupies a period of from 12 to 16 days—the former for 1in. planks, and up to the latter for 1¼in. planks. Naturally the time required varies with the thickness of the timber. Personally, I know little of this process, but Mr. J. Mann, of the University Engineering School, an expert regarding timber matters, says, "that the timber dried by this process does not appear to be damaged in any way, the colour being good, and the fibres normal. I consider the results equal to anything yet put on the market in the way of artificially seasoned timber for flooring boards." Another source from which clean timber imported from the other States and abroad is liable to infestation is in some of our own timber yards. I have seen several yards with the timber badly infested with these insects, and as the timber merchants in the other States, especially Tasmania, are taking every precaution to remove all sapwood, and send us absolutely clean timber, it behoves the timber merchants in Victoria to do their utmost to keep their yards free from the borer trouble, otherwise the fine imported timber which we now receive will become infested. This would create another scare, and do a great injustice to our inter-State neighbours. In connection with Tasmanian timbers, no doubt some of the members of the Institute of Architects are aware that recently I was requested by the Tasmanian Government to visit Tasmania to examine the forests, timber yards, and sawmills there to see if I could find any trace of the borer. After a thorough examination I forwarded a report to the Tasmanian Government, and, amongst other items, I stated that the borer trouble existed only in three timber yards, and this only to a small degree. From what I have seen at the various sawmills and timber yards, with the exception of the three mentioned above, everything is most satisfactory. I saw many fine hardwood logs being sawn up, and the greatest care was exercised that no sap remained in the wood. This is a very satisfactory fact, as I have found the borer only in the sap of Tasmanian hardwood. The sawmillers and timber merchants in Tasmania have at present at their disposal a magnificent lot of timber which is absolutely free from pests of any kind, and which I can with confidence recommend to builders, timber merchants, and others. As Mr. Little was in Tasmania at the same time as myself, and his mission being also to inspect the timbers, I will not say anything further regarding Tasmanian timbers, as Mr. Little will no doubt give you some interesting information concerning them. As the bark on the trees is a favourite breeding-place for most wood-boring insects, it should be removed as soon as the tree is felled. Firewood cut in the forest and left on the ground is often attacked by borers. This timber is placed in sheds, rooms, etc., and is often the cause of timbers and furniture being attacked. Telegraph poles, flooring boards, mine props, etc., if attacked, or to prevent attack, should be treated with one of the following chemicals:—Corrosive sublimate, linseed, or other preservative oils, kerosene, benzine, creosote, white ant preservative, carbolic acid, white ant exterminator, benzine mixed with carbolic acid, and carbolinium, etc. Axe, spade, and other tool-handles, spokes, etc., infested by borers should be treated by being soaked in preservative oil for 24 hours. Preservative oil is highly recommended by Mr. W. W. Froggatt, Government Entomologist of New South Wales, who states that floor joists, after they are laid, should be thoroughly dressed with the oil, to which has been added one pound of arsenic to one gallon of oil. Personally, I do not like recommending arsenic for treatment of timber against borers (especially in buildings), but as my friend Mr. Froggatt, who has had a long experience with timber borers, has recommended this treatment for years, and no harm has been done to those using same, I am quoting him. I have used preservative oil without the arsenic, and the results have been very satisfactory. The oil penetrates into the timber, and destroys any insect in the tunnels. Floor joists that have been creosoted are immune from the attacks of borers. Dr. A. D. Hopkins, in charge of Forest Insect Investigations, Department of



Anobium Domesticum ("Pinhole Borer").

Agriculture, U.S.A., who has devoted much time to the study of forest insects, writes as follows:

TIMBERS AND WOODWORK IN STRUCTURES.

(1) Use nothing but heartwood for the concealed parts most likely to damage. (2) If it is necessary to use any part sapwood material, attack can be prevented by treating the sap portions with kerosene, coal-tar, creosote, or linseed-oil. Facilities for future treatment can be provided wherever the rough or finished woodwork is exposed, as in out-buildings, bridges, etc., if care is taken to expose the sapwood. (3) If the untreated timbers and woodwork in old buildings show evidence of attack, the affected portions should be given a liberal application of kerosene.

THE PIN HOLE BORER (ANOBIUM).

Another insect which causes considerable damage to timbers, etc., is the "Pin-hole Borer." It is scarcely one-sixth of an inch long, of a dark brown colour, and, like most of its allies, has the head well sunk in the thorax, which causes it to resemble a hood or cowl. When viewed sideways it has a most quaint appearance, and reminds one of a bonnet almost enveloping the head. The adults of this class of wood-boring insects place their eggs on the wood. The minute worms hatching from the eggs bore directly into the wood, forming at first holes so small that they are scarcely visible to the naked eye. They do not stop in the sapwood as some kinds do, but extend their burrows to the heart of the tree or further, each worm making for itself a separate burrow, in which it remains until matured. The borings, excrements, and surplus secretions from the wood are pushed out from the original entrance by the borers, as they move backwards and forwards, which they must frequently do, both for the purpose mentioned, and in order that they may each time slightly enlarge the burrows to accommodate the increasing size of their bodies. Thus the holes made by these insects are found to vary in size, and to extend several feet through the wood. In its larval condition this insect is a thick, fleshy grub, somewhat curved and swollen at each end. It is of a whitish colour, as might be expected in a creature which spends its time in the darkness of a tunnel. These larvæ are very seldom seen, as in order to get at them the wood in which they are domiciled must be pulled to pieces; but to destroy the insects in the wood various chemicals can be used to penetrate through the wood. Their food consists of the wood itself, which, by their powerful though tiny jaws, is bitten off in minute particles, many of which are left uneaten, and either clog up the burrows or are ejected at their openings, where they constitute the tiny heaps of yellow dust referred to above. No wood is so old and dry that they cannot extract nourishment from it; in fact, the older and drier it is the better they like it. They become a chrysalis in their burrows, and envelop themselves in a silken cocoon in which are the interwoven particles of the dust they make. The tunnels made by these insects are about twice the size of those made by the "Furniture Borer," and look as if they had been burnt out. At times this Pin-hole Borer bores right through the timber, the holes made by them often being so straight that a string could easily be passed through the openings for several inches. When found in woodwork out of doors, the direct damage insects of this kind do by the actual excavation and devouring of the wood is not the only injury for which they are responsible, for damp air enters the substance of the wood through the burrows, and meeting with the excrement, which is stored in great quantities in the burrows, renders it a good basis for the growth of fungi, whereby the decay is rapidly accelerated. These beetles have been known to attack red gum, mahogany, beech, oak, deal, red pine, etc. I fully agree with Mr. J. Mann, of the University, who has carefully studied the borer question, that very few timbers are totally immune from the attacks of these insects. The prevention and remedies recommended for the Furniture Borer will suffice for this species also. In conclusion, I wish to state that I shall at all times be pleased to assist any member of the Institute of Architects with information regarding timber insects, and further to inspect any timber intended for building purposes, which is thought to be infested with borers or other insect troubles. At the Entomological Museum in connection with the Department of Agriculture, we have a most complete collection of timber-boring insects from all parts of the world, and should any member of your institute care to inspect same, I shall be only too pleased to show him the collections, and afford any information I can on the exhibits. Some of the interesting notes contained in this short paper were obtained from the works of Messrs. E. A. Butler and W. W. Froggatt.

The corporation of Bridlington have decided to expend £50,000 on the extension of the Prince's-parade and the erection of a floral pavilion.

The New Club, Mansfield, has had a basement floor which stood in waterlogged ground successfully treated with a Pudlocd cement rendering on the top of concrete.

In our issue of the 5th inst., under "Engineering Notes," we mentioned the opening of the Wood Bridge, Guildford, on Monday week, but omitted to mention, because we did not know it, that this was designed by The Trussed Concrete Steel Co., Ltd., and that the Kahn System of Reinforcement was used in the construction.

In the gallery of the old church of S. Maria del Soccorso at Livorno there has been discovered an "Assumption of the Virgin" by Andrea del Sarto. Professor Calza, the Government representative, estimates the value of the picture at £8,000. It is much damaged from damp, as it has been lying in the gallery of the church for sixty years.

The vicar and churchwardens have suspended the ringing of Oswestry church bells, in consequence of the dilapidated state of the venerable tower, which is of Norman foundation with walls as thick as 7ft. 6in. in the lowest story. The ringing of the bells is much missed, and at a recent wedding their place was taken by a gramophone, which was concealed in a tree. Mr. Basil Stallybrass, architect, reports that if the restoration of the tower is not carried out at once, most serious injury will result. The work, which is estimated to cost about £500, will be commenced at an early date.

NOTES ON ELECTRIC LIFTS.

We may emphasise our general remarks elsewhere this week on safety with electric lifts by the reminder that, as there stated, the architect and his client are safe enough with the standard makers, and the recommendation to all not to miss the fourth edition of Messrs. Smith, Major, and Stevens' "Notes on Electric Lifts," just published.

No leading makers have had a more extensive experience in all classes of elevators, and their remarks on the respective merits of hydraulic, belt-driven, and electric lifts will be read with interest, especially as regards economy of power and maintenance.

Messrs. Smith, Major, and Stevens have recently built new works at Northampton, which have four times the capacity of their London premises. If the goodly list of buildings, etc., of the first class in which their lifts are installed grows as it has done lately, and is doing, as evidenced by the numerous illustrations in their "Notes," they are likely soon to need to enlarge both their premises and equipment, and deservedly. For to no firm are English users more indebted for the perfecting of an appliance which, American in origin, and imitated in Germany, they have brought to a type in which simplicity of design, sturdiness in construction, and continual and successful improvement have combined to insure satisfaction.

The remains of the round Church of the Knights Templars, on the Western Heights at Dover, are being restored by H.M. Office of Works.

New premises are about to be erected in Russell-street for the Institute of Chemistry. The contractors are Messrs. Higgs and Hill, and the amount of the contract is £14,000. Mr. J. J. Burnet, A.R.S.A., of 1, Montagu-place, Bedford-square, W.C., is the architect.

In memory of the Dorset poet, the Rev. William Barnes, B.D., an eagle lectern has been placed in the parish church of Sturminster Newton. Surrounding the shaft below the eagle are figures of the Four Evangelists under canopies. The lectern has been executed by Messrs. Harry Hems and Sons, of Exeter.

The definite rebuilding of the Loggetta of Sansovino, at the foot of the Campanile in Venice, has been begun. When the new Campanile was inaugurated, a portion only of the Loggetta was ready. The missing sides were substituted by wooden imitations painted to resemble marble. The whole is now being rebuilt in marble. The work will take nine months to complete.

The Church Army's modern men's lodging home at Middlesbrough, which contains 105 separately-lighted and windowed cubicle rooms, is just out of the builders' hands, and ready for its occupants. A kitchen, writing-, recreation-, reading-, and bath-rooms, and a chapel are among the conveniences included in the cost of 3s. a week for residence. This is the twenty-fourth of the society's lodging-homes for independent working-men. It is heated throughout with hot water.

The Electricity and Tramways Committee recommend the Corporation of York to carry out further extensions to the electrified tramway system, including a new track from a junction with the existing system at Nessgate, proceeding along Coppergate, Piccadilly, Walmgate, Lawrence-street, and Hull-road, the terminus being at the Bees Wing Hotel. The estimated cost, including equipment and cars, is £20,220. It is also proposed to extend the present terminus at Acomb to the centre of Acomb village and Haxby-road terminus to White Cross Hill. It is proposed to apply for powers to run trackless trams to link up Heworth, and from Nessgate viâ Huntington-road to Haxby-road.

Considerable additions have been made to the equipment of the London School of Tropical Medicine at the Royal Albert Dock partly through funds subscribed by the public, and partly through the Exchequer grant made by the Board of Education. New buildings have been erected consisting of a laboratory accommodating 60 students, and of a hostel with provision for 25 residents. The new laboratory is continuous with the old one, and is a square, single-story building, lighted by a weaver roof. The accommodation set free by it has rendered possible the formation of special laboratories, of preparation-rooms, of the director's room, and of incubation-rooms.

OBITUARY.

We regret to record the death of Mr. George Tinworth, suddenly on Wednesday, on his way home from his studio at Messrs. Doultons. He was in his seventieth year, having been born on November 5, 1843. Of his humble origin and indomitable perseverance many stories have been told. Of his works our own back volumes have many illustrations. He leaves no family, and his later years were overshadowed by the severe illness of his wife, who survives him.

The death of Mr. Ernest Edward Briggs, R.I., occurred at his residence, Dalbeathie House, Dunkeld, on Thursday in last week. Mr. Briggs, who was in his forty-eighth year, was educated for the profession of mining engineer. Abandoning that career, however, he studied art at the Slade School under Professor Legros and in Italy, and in 1889 exhibited his first picture, a water-colour, at the Royal Academy. Since then he has been a regular contributor at Burlington House, and also of recent years at the Royal Institute of Painters in Water-Colours, of which he was a prominent member. Mr. Briggs's subjects were generally of river scenery in the Highlands of Scotland. This year one of Mr. Briggs's drawings was included among the Chantrey purchases.

We regret to hear of the death of Mr. A. E. Geary, manager and director of Messrs. Ellis Geary and Co., Ltd. Mr. Geary was probably one of the best-known wood-block flooring contractors, having been in business as such nearly thirty years. Mr. Edward Evans, who was co-manager and director with Mr. Geary, will continue to carry on the business.

We also regret to have to announce the death of Mr. F. Dashwood, the secretary of the Incorporated Clerks of Works' Association, which occurred at his residence, 2, Littledown-road, Bournemouth, on Wednesday morning, the 10th inst., after a long illness.

CHIPS.

Mr. C. Whitworth, of Melton Mowbray, has been appointed by the Spilsby Rural District Council inspector of nuisances and sanitary surveyor for No. 2 (Burgh) district at a salary of £150 per annum.

The Bridlington Town Council have decided to increase the salary of Mr. E. R. Matthews, borough surveyor, from £350 to £400 per annum from Jan. 1, 1915; and that of Mr. A. J. Beckett, borough electrical engineer, from £350 to £375 from Jan. 1, 1914.

The formal opening of the new boys' school in connection with St. Bede's Roman Catholic Church, South Shields, took place on Sunday. The cost of the building and site has been £7,000, and the school, which has been built to the designs of Mr. James Page, South Shields, provides accommodation for 500 children.

Mr. T. Powell, surveyor and sanitary inspector to the Wem Urban District Council, has just had forwarded to him from the War Office a medal for the Zulu Campaign of 1879. Mr. Powell served in that campaign as a member of the King's Dragoon Guards. The medal carries with it a pension of 7s. a week after the age of sixty-five.

The last authorised section of the electric tramway extensions of the Birmingham Corporation, that along the Hagley-road, is on the eve of completion. The length of the line of tramway from Five Ways, where a junction is formed with the Ladywood system, is two miles 308 yards. The contractor is Mr. George Law, of Kidderminster.

At the New Palace of Peace at the Hague, on Friday, Sir Alan Johnstone, the British Minister, unveiled a bust of King Edward VII. The bust, which is executed in white marble, stands in the main gallery on the first floor of the Palace, and represents his Majesty in evening dress, wearing the Grand Cordon of the Victorian Order. Mr. A. Bruce-Joy is the sculptor.

At the last meeting of Dumfries Town Council, the question of a new traffic bridge being erected at the south end of the town, to span the river Nith between Dumfries and Maxwelltown, and to replace the present suspension-bridge, was again discussed, and it was eventually agreed by thirteen votes to seven to proceed with the erection of a new bridge, in conjunction with Maxwelltown, at a cost not exceeding £5,000.

COMPETITIONS.

HOUSING SCHEME, LOW WALKER.—The Newcastle upon Tyne housing committee and their assessors have made their award. The first premium has been awarded to a local firm of architects, Messrs. E. Cratney and S. Kaye, who receive £50; the second premium of £30 goes to Mr. Malcolm Bennett, of Brighton; and the third, of £20, to Messrs. Slater, Andrews, and Wheeler, of Colchester. The winning design shows the lay-out of the eighty acres entirely on garden-city lines, in which careful consideration has been given not only to aspect and traffic facilities, but to the future development of adjoining land, so that ultimately it becomes one harmonious whole. The main roads run generally S.E. by N.W. across the contours, and owing to the proximity of Walker Park it has not been thought advisable to devote any portion of the estate to open spaces. Altogether it is proposed to erect 1,195 houses in blocks of two, three, four, five, and six. Three types have been adopted, containing one, two, or three bedrooms respectively; the principle of providing one large cross-ventilated living-room, with small scullery adjoining, has been used throughout. Baths are provided in all the houses, and in those of two and three bedrooms separate bathrooms have been placed on the first floor, thereby insuring complete privacy where there are families. A covered yard for washing purposes has been provided in the larger houses, thus enabling the sculleries to be kept small and prevent them being used as living-rooms. All doors, windows, finishings, and fittings are standardised throughout the whole scheme, which keeps the cost down. Due care has been given to the upkeep, and it is proposed that the houses should be built with 11in. hollow walls faced with hard local bricks burnt grey, with arches, sills, and dressings in red sandstocks; roofs, which are in simple straight lines, would be covered with Green's French pantiles laid to a 4½in. lap. All foundations would be of Portland cement concrete. Internally all walls are to be plastered and distempered, and the finishings simply designed, so as not to harbour dust and to permit of easy cleaning. The chief idea underlying the proposals is to provide houses of varying types with suitable garden ground attached, at rentals which will be within the reach of all.

SLOUGH. Mr. Winter, architect, Sheffield, has been awarded first place in an open competition for designs for new Primitive Methodist church at Slough. The church is to cost £2,500 and to seat 350 persons.

The partnership hitherto subsisting between S. Devitt and H. Dowden, carrying on business as builders and decorators, at Brookdale Hall, Brookdale-road, Catford, under the style of Devitt and Dowden, has been dissolved.

The Featherstone Urban District Council have decided to approve the surveyor's estimate in respect of the housing scheme near St. Thomas's Church, Purston, and submit it to the Local Government Board. They intend building 149 houses. Borrowing powers to procure £31,705 are to be sought.

Mr. W. H. Collin, an inspector of the Local Government Board, conducted on Tuesday and Wednesday in last week housing inquiries at Corfe Castle and Langton Maltravers, and sat at the schoolroom, Studland, on Thursday, to inquire into the application of the Wareham and Purbeck Rural District Council for leave to borrow £2,400 for the purpose of building houses for the working classes. The plans, since the last application, had been prepared, and were explained by Mr. W. W. Fookes, architect and sanitary inspector to the council.

The new dock now being constructed for the Port of London Authority south of the Albert Dock, will cost over £2,000,000. It will have a water area of 65 acres, and a depth of 38ft., and will be entered by a lock 800ft. long between gates, and 100ft. wide. Its length will be about 4,500ft., tapering in width from 700ft. at the eastern end to 500ft. at the western end. The north side will have a straight length of quay of nearly 4,000ft., and on the south side there will be seven jetties. The new dock and the Albert Dock will be connected by a passage 100ft. in width.

Currente Calamo.

The auctioneers seem sanguine that their Registration Bill will pass ere long. They, of course, only seek to prohibit unqualified persons from acting as valuers or auctioneers of land and buildings. That is certainly necessary for the protection of the public—more so now than ever, in view of the vagaries of some of Mr. Lloyd George's surveyors. Mr. Breach, the President of the Auctioneers' Institute, also dealt fully last week, at the annual meeting at Folkestone, with the present depressed condition of the real estate market. We give the gist of his remarks on another page, and have already commented on the facts he rehearsed. The worst of it is, landholders are comparatively so few that the rest of the community do not yet realise their coming share in the mischief that will result from the phenomenal depreciation in the most tangible form of property which Mr. Lloyd George's legislation has wrought. When the next slump in trade comes, the masses will find out what it means, and one result is certain reduction of national expenditure somehow, or the taxation of the masses, at last, on a to them ruinously high scale that may provoke revolution.

We hear that the stupid failure of the Dublin Corporation, after five years looking a gift-horse in the mouth, will probably result in the loan of such of Sir Hugh Lane's pictures as have not absolutely been given to Dublin, to the National Gallery, London. In an interview on Monday with a representative of the *Manchester Guardian*, Sir Hugh Lane said that he hoped that the exhibition in the National Gallery might lead to the realisation of the establishment in London of a permanent collection representative of modern international art, including the work of living men. This question has been discussed between him and Lord Curzon, and Lord Curzon has suggested that the loan exhibition in London might be the starting-point of a movement to this end. It is possible an appeal may be made to the public for funds, and that in time we may have an international gallery worthy of London. Discussing the Dublin negotiations, Sir Hugh Lane complained of the vacillating attitude taken up by the Dublin authorities, and pointed out that in the early part of this year the corporation actually decided to accept the bridge site. It was difficult to understand the objection that the erection of a beautiful art gallery across the river would spoil the view. He indicated that he was not particularly impressed by the view across the Liffey as it exists at present.

As regards the architecture of the new Art Gallery, in Sir Hugh Lane's opinion the only architect competent to design a modern art gallery, having regard to the beauty of the outside and to the planning of the interior construction, was Mr. Lutyens. He had therefore insisted that Mr. Lutyens's design, which we published in our issue of July 4 last, should be adopted. He has been greatly impressed by the two galleries erected from Mr. Lutyens's plans—the Johannesburg gallery and the gallery which housed the art section at the Rome Exhibition. He did not consider it practicable to accede to the request made by the Dublin authorities that there should be an open competition in which Irish architects should be allowed to take part along with Mr. Lutyens. For one thing, it is doubtful whether Mr. Lutyens would compete under such conditions; for another, he was not greatly impressed by the "patriotic" argument, and he pointed out that the most beautiful and characteristic buildings in Dublin, erected in the times of Irish Independence, were, almost without exception, the work of English architects. Sir Hugh Lane mentioned that it had been his intention to have paid Mr. Lutyens's fees himself. He dwelt upon the difficult question of the redistribution of the £11,000 which had been already raised for the building of the proposed Dublin art gallery.

If the report, on another page, for which we are indebted to the *Halifax Guardian*, is correct, we are glad the case it refers to has been adjourned for a month, because we cannot but think the "nominal penalty" it is intimated may be imposed will be found uncalled for. We certainly do not understand the assumption in the report that if the corporation allowed the projecting eaves, which are 10ft. 6in. above the level of the footpath, to remain, they could not subsequently object to another projection in the same building say of a bow window beneath the eaves. Litigation about comparative trifles is always unwise; but it seems to us that if a conviction follows, this is really a case that should be carried further. We understand and admire the determination of the Halifax Corporation that no favours shall be shown to their own councillors; but we venture to submit that slight deviations of the kind in question—some seven inches more than shown on the plan, and made solely to save unsightliness and spoiling the appearance of the road—are well within the legitimate discretion of any Authority.

The Amalgamated Society of Carpenters and Joiners is now taking the ballot on political action under the Trade Unions No. 2 Act, and the voting is being attended with bitter controversy regarding the policy of the Labour Party. Criticism against the party is most concerned with its support of the Insurance Act, and in the London district hundreds of members are making their disapproval of the party's attitude the excuse for voting against political action altogether. This feeling is not confined to the joiners. In other unions, where the same trouble has cropped up, feeling in favour of excluding politics from trade-unions altogether is steadily growing. Mr. Robert Williams, of the Transport Workers' Federation, some time ago placed himself at the head of a movement having for its object the divorce of the political and industrial functions of trade-unionism, and this policy is now commending itself to many union leaders, who see that the continual wrangling over the merits or demerits of the Labour Party does not make for harmony and progress in the societies.

The New York skyscraper will rival Babel soon. To forestall the possibility of new building by-laws which might limit future construction, the Pan-American States Association has prepared the plans for a structure that will overtop the present world's record (the Woolworth Building) by 150ft. That is to say, it will rise fully 900ft. from the ground. Its main section will have thirty-two floors, and above them the floors will be narrowed, as is usual in the most recent skyscraper schemes, into a lofty tower. It is estimated that the building will contain 21,000,000 cubic feet of material, and will cost from £1,700,000 to £1,800,000. Its chief function will be to provide a permanent place for the exhibition of products of Latin-American countries. Space will also be devoted to showing the products of the United States for the benefit of visitors and buyers from the countries to the south. There will be abundant office-room for exporters and merchants engaged in Latin-American trade, and, of course, the usual equipment of dining-rooms, conference-rooms, club suites, etc. The projectors hope to have the building ready for opening simultaneously with the Panama Exhibition at San Francisco in 1915.

The Life of Robert Fulton, "Engineer and Artist," by Mr. H. W. Dickinson, A.M.I.M.E., Assistant Keeper of the Science Museum, South Kensington, which Mr. John Lane, of the Bodley Head, Vigo-street, W., has just published at half a guinea, is interesting. It is possible that neither here nor in America are people concerned sufficiently about Fulton to care much whether he was more genius than charlatan, as most of his biographers have labelled him—according to their American or British prejudices. In all probability he was neither; but, as Mr. Dickinson says, a cosmopolitan who, born a British subject in a British colony, spent the seed-time of his life in England, of which the fruition took place in France, and the harvest was reaped in America. Fulton died early—in his fiftieth year, on February 15, 1815. He certainly seems to have had a keen and proper eye to his own interests perhaps that was why he was more generously dealt with by the British Admiralty than most native inventors. He certainly was a better engineer than artist, in spite of advantages which may have facilitated his early career, derived from his relationship to Sir Benjamin West, who was his uncle. Why, indeed, he threw up art so suddenly is not clear. Probably he knew there have been few Leonardo da Vincis, and that he was not one of them. On his subsequent career Mr. Dickinson throws a good deal of fresh light, and, while Fulton hardly always shines to advantage, he seems to have regarded the world as his oyster, with, at any rate, as much warrant as some who more successfully made bounce do duty for brain.

Two American engineering works, which are probably known to some of our readers, have reached their fourth editions. Both are published here by Messrs. Chapman and Hall, Ltd., 11, Henrietta-street, W.C. The first is Wolcott C. Foster's "Treatise on Wooden Trestle Bridges and their Concrete Substitutes," according to the present practice on American railroads. The price is a guinea, and a good deal of new matter is added. The other is Professor G. F. Gebhardt's "Steam-Power Plant in Engineering," first published in 1908. It is issued at seven shillings. Many chapters have been added or rewritten, and over three hundred new illustrations are given. The rapid development of steam plants, even here, where owners and users are more conservative, but perhaps less really economical, than in America, will insure this book its welcome by students, and should that of engineers in practice.

We are glad to announce that the Cambridge University Press will shortly publish the series recently contributed to these pages by Mr. C. F. Innocent, A.R.I.B.A., expanded into a "History of English Building Construction," for a new Cambridge Technical Series which is forthcoming. The articles were much appreciated by many readers, who, we are sure, will be glad to possess the volume.

The borough council of Mount Eden, New Zealand, have adopted a scheme for the provision of a drainage system at a cost of £27,100.

It is proposed to begin the restoration of the parish church of Graveney, Kent, half the estimated amount required, £2,000, being in hand. Mr. W. D. Caröe, F.S.A., F.R.I.B.A., is the architect.

The Government of Western Australia have acquired Savoy House, at the corner of Savoy-street, Strand, for the erection of new offices, and will take possession of the property at the end of this month.

Mr. John Richard Clayton, of Broomfield House, Fairfax-road, Hampstead, head of the firm of Messrs. Clayton and Bell, glass painters, who died on July 5, has left £74,682. Testator left £100 to the Artists' General Benevolent Institution.

Miss Standering is undertaking the erection in the north transept of Selby Abbey Church, of a St. Germanus stained-glass window of seven lights. Miss Standering is the last surviving member of the old Selby family of shipowners. The cost of the new window will be £1,000.

The "Falls of the Rhine at Schaffhausen," one of the finest of Turner's early pictures, has recently been secured for the Museum of Boston, Mass. Exhibited at the Royal Academy in 1806, it was purchased by Sir John Leicester, afterwards Lord de Tabley, in whose family it has been ever since.

At a special meeting of the county council of Holland Lincolnshire, held at Spalding the other day, sanction was given for the borrowing of £27,235 for the purchase of five farms at Fishtoft, Brothertoft, Kirton, and Tydd St. Mary, with an aggregate area of 573 acres, for small holdings.

Mr. Samuel Beal, of Tulse Hill, S.W., a Liveryman of the Plumbers' Company, and a member of the Court of Common Council, chairman of Messrs. Edward Dean and Beal, Ltd., engineers and brassfounders, left estate of the gross value of £22,101, of which the net personalty has been sworn at £14,971.

Statistics are given in Vol. XIX. of the Proceedings of the County Councils' Association of Scotland, of the cost per mile for maintenance of the roads of Scotland, and the road rate for each Scottish county. The cost varies from £4 15s. 6d. in Ardarmochan District, Argyll, to £214 10s. in suburban Midlothian, and the road rate from 2d. in the Cambrae District, Buteshire, to 2s. in Sutherland.

The old town-hall, a prominent feature of St. Mary's-street, Cardiff, is now in process of demolition. The site has been acquired by the local co-operative association, for a new building. The town-hall, which has a stone frontage, Greek in character, is one of the principal works of the late Sir Horace Jones, a former architect to the City Corporation of London, and president of the Royal Institute of British Architects from 1882 to 1884.

The linking-up of the District Railway, the Bakerloo, and Hampstead and Highgate Tubes at the new Charing-cross Station now being built on the Underground, at the Embankment, has made considerable progress, and it is expected that the works will be completed by the New Year. The Hampstead and Highgate Tube is being extended from its present terminus in the courtyard of the Charing-cross Station of the South-Eastern and Chatham Railway to the Embankment.

Devenish Church, Co. Fermanagh, was recently reopened by the Bishop of Clogher after extensive improvements. A carved oak reredos has been erected. A stained window, designed by Miss Geddes, and executed at Miss Purser's works in Upper Pembrokestreet, Dublin, has also been placed in the nave as a memorial. The church was designed by Sir Thomas Drew, and is dedicated to St. Molaise, patron of the parish. The stone mullions of the east window of the 15th century Island Church are incorporated in the plan, and the ancient font is also in use.

PROFESSIONAL AND TRADE SOCIETIES.

ARCHITECTURAL ASSOCIATION. The following is the list of papers to be read at the meetings of the Architectural Association at 18, Tufton-street, S.W., during the ensuing session, 1913-1914:—

1913, Oct. 27 Annual General Meeting. President's Address and Distribution of Prizes W. Curtis Green, F.R.I.B.A.
Nov. 10 "Nationality in Art," by H. M. Fletcher, M.A., F.R.I.B.A.
Nov. 20 Conversazione at 8 p.m.
Nov. 24* "Our Debt to the Greeks," by L. March Phillips.
Dec. 8 "Portuguese Architecture," by W. H. Ward, M.A., A.R.I.B.A.
1914, Jan. 19* "The Neo-Greek Movement in Architecture in the Eighteenth and Nineteenth Centuries," by Professor C. H. Reilly, F.R.I.B.A.
Feb. 2—Subject to be announced. Professor W. R. Lethaby, F.R.I.B.A.
Feb. 16 "The Serious Art of Thomas Rowlandson," by Professor Selwyn Image, M.A.
March 2 — "Architecture and Environment," by W. S. Purchon, A.R.I.B.A.
March 16*—"The Wonder of Work," Joseph Pennell.

*Combined meeting with the Camera, Sketch, and Debate Club. The above Lectures will be illustrated by lantern slides.

TASMANIAN ASSOCIATION OF ARCHITECTS.—The annual meeting was held at Peterson's Chambers, Hobart, on July 15. A satisfactory balance-sheet showed a credit balance of about £20, only two members being unfinancial. The annual report stated that legal advice had been obtained as to the possibility of a Bill being passed through Parliament to obtain Registration for architects, with the result that it was recommended to submit a Bill as a Government measure. Failing Registration being obtained in this direction, a private Bill could be got through, incorporating the institute as a company. Two public competitions were held during the year, for which the conditions of competition were drawn up by the institute. A protest was lodged with the Minister of Public Works against public works officers undertaking private work, which elicited an assurance that such practice would be prohibited. The resignation of the hon. secretary, Mr. F. J. Heyward, owing to ill-health, was received with regret, and thanks were tendered to the hon. treasurer (Mr. R. W. Koch) for carrying on the duties during Mr. Heyward's absence from Hobart for several months. Three new members were elected as associates. The consideration of amending the rules, etc., was held over until the next general meeting. The following officers were elected for the ensuing twelve months:—President, Mr. R. W. Koch, F.R.V.I.A. (Licentiate R.I.B.A.); vice-president, Mr. Thos. Tandy (Launceston); hon. treasurer, Mr. R. W. Koch; hon. assistant secretary, Mr. A. H. Masters (Launceston); council, Messrs. A. C. Walker, A.R.I.B.A.; H. R. Hutchison, and R. F. Ricards, F.R.V.I.A. On the suggestion of Mr. Walker, Mr. Koch agreed to act as hon. secretary pending the office being filled at a future meeting.

ASSOCIATION OF MASTER HOUSE PAINTERS AND DECORATORS.—The twentieth annual convention of the National Association of Master House-Painters and Decorators is to be held the week after next at the town hall, Leamington. On the opening day, Tuesday, the 23rd inst., there will be, at 10 a.m., a reception of the members and visitors, by the president and officers, in the town-hall, and an inspection of the work sent in for the Apprentices' Exhibition, and the work executed in Italy by Stanley R. Sleep, Plymouth, and Ernest Sanderson, Burnley, in fulfilment of the Travelling Scholarship. At the subsequent business meeting greetings will be conveyed from the Association of Master Painters in Scotland by Mr. T. Kershaw Bomar, of Edinburgh, president; and from the corresponding association in Ireland by Mr. W. Morrow, of Belfast, president. The annual reports from the secretary, treasurers, the education committee, the paper-hangings and materials committee, the adjudicators on the apprentices' competition, will be received and considered. In the afternoon an address will be given by Mr. Howard C. Cleaver, "First Impressions of Russia and her Peasant Arts and Industries" (with sketch illustrations). At the evening session a lecture will be delivered on "The Future of Decoration as Applied in the Form of Paint," by Mr. John Scott. On the second day, Wednesday, the 24th inst., the annual general meeting will take place at 10.30 a.m., when the annual report, balance-sheet, and treasurer's statement of finance will be adopted and officers will be elected for the ensuing year. In the afternoon Professor W. R. Lethaby, F.R.I.B.A., will give a lecture on "House Painters' Work—Ancient and Modern." In the evening the annual dinner will be held at the Regent Hotel. On Thursday, the 25th, an excursion will be made to Oxford.

SANITARY INSPECTORS AT LLANDUDNO.—The annual conference of the Sanitary Inspectors' Association was opened at Llandudno, under the presidency of Sir James Crichton-Browne, whose suggestive address on the dangers of dust we summarise elsewhere. The general council, in their report, record a net increase of membership during the year of over one hundred, the total membership in all classes now amounting to 1,737. They stated that the Local Government Board has decided to place the society's certificate on the same level as that of any other certificate for a similar purpose, thus showing the Board's appreciation of the practical standard of qualification required by the association. Next year's conference will take place at Leicester.

The memorial-stones of an enlargement of the Wesleyan schools at Earls Barton have been formally laid. The buildings will cost £1,000. Messrs. Ellson and Knight, of Earls Barton, are the contractors.

The contractors, Messrs. Thompson and Co., of Peterborough, have commenced operations for making additions and improvements to the Great School at Oundle, at an estimated cost of £15,000.

The Isle of Wight Chamber of Commerce has passed a resolution in support of the proposal of the Cowes Harbour Commissioners to construct a breakwater across the Shrape Bank for the protection of yachts and other shipping in the harbour.

In the Wandsworth Bankruptcy Court, on the application of John Wright Hallett, Lyvedon-road and Furzedown Market, Mitcham-road, Tooting, builder and contractor, the debtor's discharge has been suspended for two years as from June 10, 1912.

The parish church of Ladyvan, Cornwall, which has been restored at a cost of £2,500, has been formally opened. Messrs. St. Aubyn and Wadling, Lamb-buildings, Temple, E.C., were the architects, and Mr. George Miners, of Marazion, was the contractor.

A new elementary school for the town of Holywell, built by the Flintshire Education Committee, is nearly completed. It will replace a school, built some 50 years ago, which has become unfit for use. The new edifice is of brick, with stone ornamentation, and has cost £5,000.

On Friday some 300 members of the Edinburgh Association of Science and Arts inspected the new Usher Hall, now approaching completion, under the guidance of Mr. John Darge, the clerk of works. The constructional and decorative work in the entrance-halls, main corridors, and crush-rooms in the three levels of the building is practically finished, while considerable progress has been made in the ornamentation of the ceiling and other parts of the hall. It was originally intended that the hall should seat some 3,500 people; but alterations have been made which will reduce the seating accommodation to provide for 3,000 people.

The corporation of Wallasey have under consideration a revised scheme for the erection of workmen's dwellings prepared by the borough engineer. The proposal is for the erection, on a site between Poulton-road, Gorsey-road, and Lateral-road, 51,912sq.yd. in area., of from 80 to 100 houses, the greater proportion of which will be rented at 4s. 3d. per week, all clear. The houses are to be built in pairs; but without having the appearance of flats. Each house will have a separate entrance, one family occupying the two upper rooms, and another family the two lower ones. A separate garden for each will be provided, together with recreation-grounds in common.

Our Illustrations.

R.C.A. TRAVELLING STUDENTSHIP PRIZE DESIGN FOR A NON RESIDENTIAL COLLEGE FOR A UNIVERSITY TOWN.

The subject was a non-residential college in a University town, to embrace Faculties in Art, Philosophy, Classics, Theology, Languages, and Music. The site, on the north bank of a river, is assumed to have a slight fall from north to south. In determining the lay-out, the central, dominant position of the large auditorium hall, and the subordination of the lines of the various blocks to this effect, have been of primary consideration. Circular in plan, and following in type the Classic amphitheatre, the hall has a seating capacity of 1,000. A suspended velarium provides against acoustic difficulties, and lighting is from the top. The approach is by the entrance-hall, centrally placed in the north front. The College of Art forms the north wing of the court of which the hall occupies the central area, while at the east and west ends respectively are the common- and dining-rooms and gymnasium and swimming-bath. The general class- and staff-rooms are situated in two parallel wings extending south from the hall, and enclosing a terraced forecourt; these wings are marked at their extremities by porticoes, being entrances to lecture theatres, chapel, and library. The buildings for the most part comprise two stories within the Order, and a lofty rusticated basement, in the latter being accommodated the administrative and general offices.

J. H. FARRAR.

HOUSE ON ST. GEORGE'S HILL, WEYBRIDGE.

This house is to be erected on the St. George's Hill Estate. The walls are to be of white roughcast, the chimneys will be of 2in. grey stock bricks; all the woodwork is to be of English oak, left rough and its natural colour. The roofs are to be covered with hand-made rough sand-faced tiles of dark colour. The work will shortly be put in hand by Mr. W. G. Tarrant, who will also lay out the gardens and grounds to the design of the architects, Messrs. Tubbs, Messer, and Poulter, Woking and Bexhill.

THEOLOGICAL HOSTEL, VINCENT SQUARE, S.W., FOR KING'S COLLEGE, LONDON.

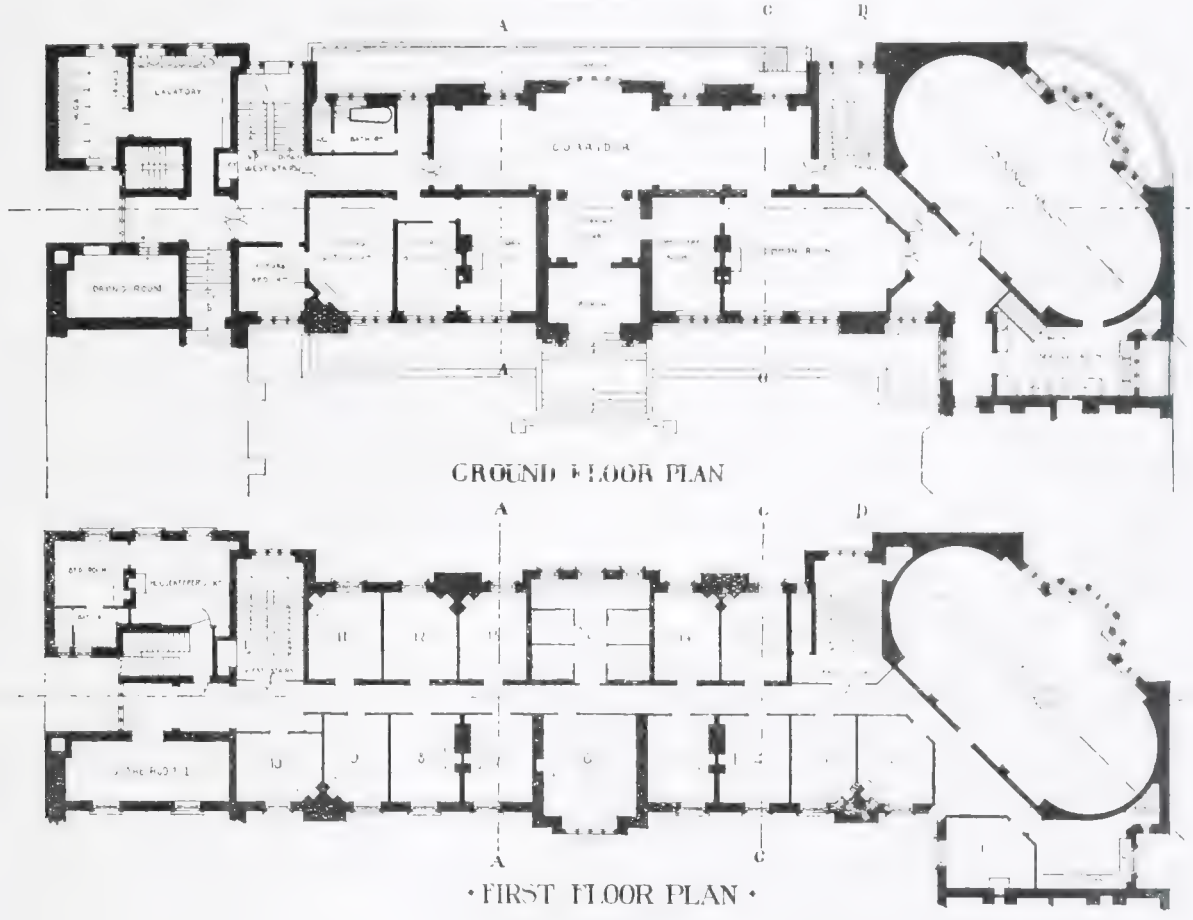
The contractors for the foundations of this building were Messrs. Dove Bros., and for the superstructure, Messrs. Foster and Dicksee. The materials used are as follows: Facing bricks are 2¼in. by 9in., varying in colour, with red quoins. The stone is brown Portland. The Hostel is intended for residential purposes only, and no lectures will be given there. Each of the sixty students has a bed-sitting room, while there are ample common rooms and a large dining-hall on the ground floor. The east block, which is now being erected, contains a private house for the Warden and rooms for two resident tutors are provided in the main building. The west block will contain another ten rooms, a large library, and, on the top floor, a chapel. Funds do not allow of all this being built yet. The foundation-stone was laid on May 6 last by H.R.H. Princess Louise (Duchess of Argyll). The building is to be open for the students on October 1. Mr. Arthur C. Martin, F.R.I.B.A., 11, Hart-street, W.C., is the architect. The foundations rest on concrete piers reaching to ballast found 16ft. below ground level. Basement level, 5ft. below ground, was as low as was possible, on account of the shallowness of the sewer. This drawing was shown at the Royal Academy this summer.

INSURANCE OFFICES, TORONTO.

This drawing was exhibited at the recent Royal Academy Exhibition, and shows a fine block of offices proposed to be erected in Toronto. Messrs. Darling and Pearson are the architects, who, up to the time of going to press, have not sent us any particulars.

DETACHED VILLAS AT MORLEY.

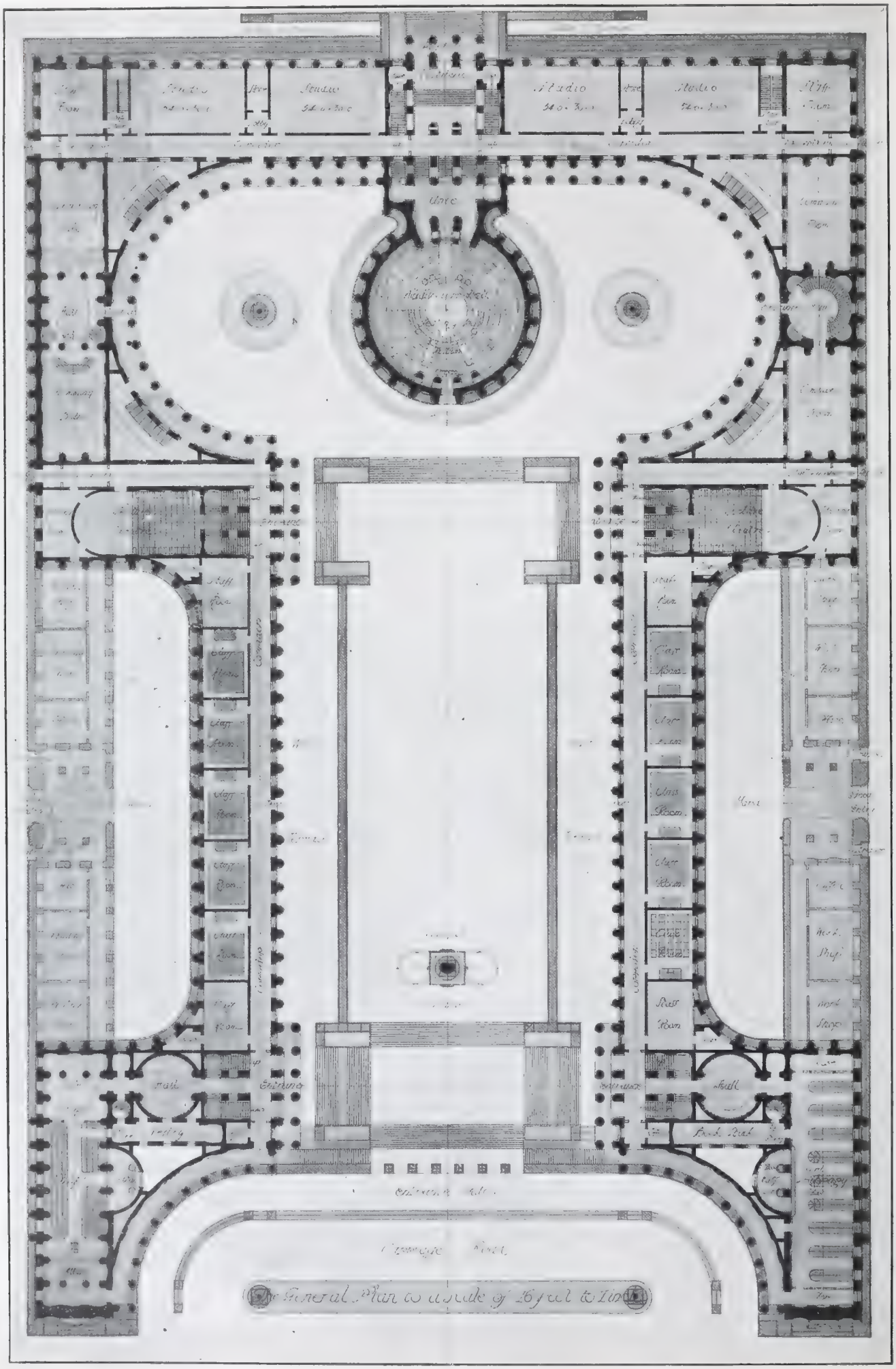
These buildings are to be erected on a plot of ground with a frontage to the Morley Public Park, and practically facing due south. The ground floors are raised about 2ft. above the road level. The materials employed are: ground-floor height in local screed wallstones, the remaining height being in dark brown pebbledashing. The roofs are covered in dark red roofing-tiles. The porches and vestibules are finished in Austrian oak, and the internal face panelled in the same material. The sitting halls and staircase halls are finished in half-timbered work, of pine stained. The ceilings throughout are panelled with fibrous-plaster panels. To all lavatories, kitchens, sculleries, etc., tiling is extensively used. The fireplaces are to be of a simple character and quiet in design. The decorations are intended to be finished in self colours, with all paintwork finished unglazed. The electric lighting will be carried out throughout in a system of semi-indirect lighting, alabaster bowls being used in the ground-floor rooms. The external painting is to be finished in white and bright green. The grdens are intended to be laid out with tennis court at the back, with an open space between the two villas. The borders being finished in herbaceous bedding, and the front part, which is slightly sunk, will be laid out as a rose-garden. It is inteded to trellis the lower part of the houses, and plant with crimson ramblers and veitchi. Messrs. Walter Hanstock and Son, of Batley, are the architects.



THEOLOGICAL HOSTEL, VINCENT SQUARE, S.W., FOR KING'S COLLEGE, LONDON.

Mr. William Edward Kerby, of 26, Hill View-road, Oxford, retired builder, who died on April 10 last, aged 75 years, left estate of the gross value of £1,038 13s. 7d., of which £209 8s. 1d. is net personalty.

At Redland, Bristol, a new girder bridge was substituted on Sunday in three hours for one which has done duty since the opening of the Clifton Extension line forty years ago. The new bridge, which has a footway adjoining the parapet, has been constructed and erected by Messrs. E. Finch and Co., Ltd., of Chepstow, Mon., with Mr. T. W. Ellis as contractor.


Studio
Studio
Studio
Entrance
Entrance
Entrance



THEOLOGICAL HOSTEL FOR KING'S COLLEGE, VINCENT SQUARE, S.W.
Mr. ARTHUR C. MARTIN, Architect.



INSURANCE OFFICES, TORONTO.—Me



. DARLING and PEARSON, Architects, Toronto.

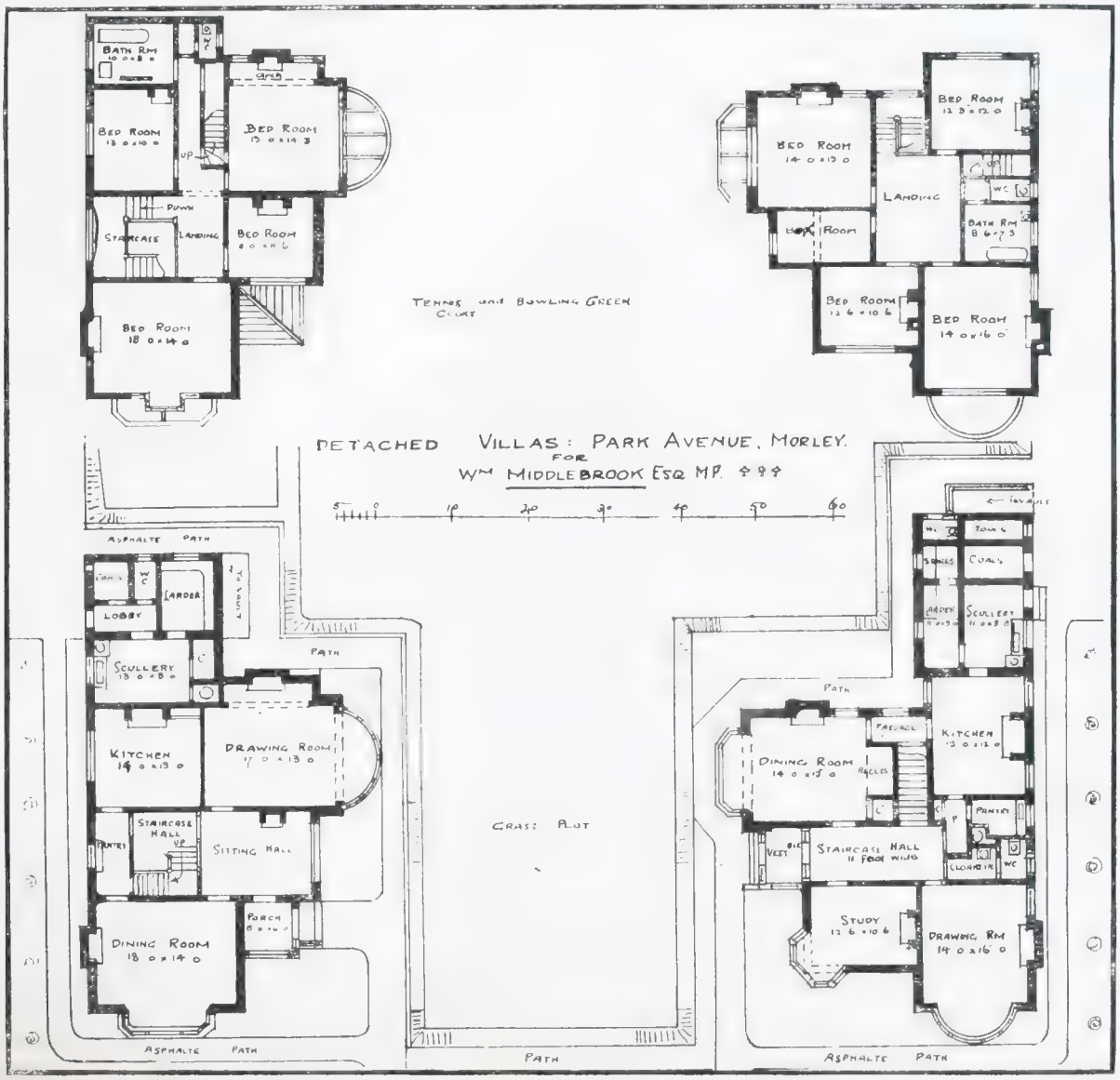


ROYAL COLLEGE OF ART TRAVELLING S



DENTSHIP DRAWINGS.—By Mr. J. H. FARRAR.




BATH RM
BED ROOM
BED ROOM
BED ROOM
STAIRCASE
LANDING
BED ROOM
BED ROOM
TENNIS and BOWLING GREEN COURT
BED ROOM
BED ROOM
LANDING
BED ROOM
BATH RM
BED ROOM
BED ROOM
DETACHED VILLAS: PARK AVENUE, MORLEY.
FOR
WM MIDDLEBROOK ESQ MP
ASPHALTE PATH
LOBBY
LARDER
SCULLERY
KITCHEN
DRAWING ROOM
STAIRCASE HALL
SITTING HALL
DINING ROOM
PORCH
PATH
GRASS PLOT
ASPHALTE PATH
PATH
COALS
SCULLERY
KITCHEN
DINING ROOM
STAIRCASE HALL
STUDY
DRAWING RM
PATH
ASPHALTE PATH

Building Intelligence.

BRISTOL.—A new workhouse infirmary is being built at Southmead for the Bristol Board of Guardians. It occupies a site behind the old buildings, which are to be principally set apart for convalescents, and are being altered with that intention in view. The new infirmary consists of administrative block and three blocks for patients, each two-storied buildings. In the angle are the children's wards, and at right angles stretches a double block, with a maternity ward adjacent. The administrative department provides a new boiler-house, engine-room, battery room, and an extension of the laundry. There will be a new heating installation both in the old infirmary and the new, and the whole of the buildings will be lit by electricity manufactured on the premises. Rainwater is collected in a reservoir now being made. The new buildings, which are built of local Pennant stone with brick facings, stand on somewhat elevated ground. Mr. W. S. Skinner, of Bristol, is the architect, and the builders are Messrs. Pettard and Sons, Langport.

MAIDSTONE.—The new county hall is designed in the Renaissance style. Surrounding the entrance archways and the plinths up to the ground floor there is rusticated work in grey granite; while the central three-storied portion is faced with Portland stone, the wings of the building and the whole of the fronts facing the inner court being constructed of Kentish rag and Portland stone. The internal construction throughout is fireproof, the floors being in reinforced concrete and the staircases in stone. The council chamber, 52ft. in length and 39ft. in width, is placed at the north corner of the site on the first floor, and is approached by a stone staircase. The ground floor of the right wing is occupied by the elementary and higher departments of the Education Committee and the school architect and staff. On the first floor the office of the clerk of the county council is placed at the end of the wide corridor, his staff being in the centre building adjoining. The education secretary's office is in the right wing, with the general office and finance department beyond. Two rooms for the land agent have also been provided in this wing. The left wing is occupied by the county accountant's department, and that of the medical officer of health. Designed by Mr. F. W. Ruck, of Maidstone, the county architect, the building has been erected by Messrs. Wallis, of the same town.

PERSHORE ABBEY.—At the Shire Hall, Worcester, on Saturday, the Earl of Coventry, Lord Lieutenant of the county, presided at a meeting arranged to appeal for funds for the preservation of Pershore Abbey Church. Fresh and serious danger has been found by the architect for the restoration, Mr. Harold Brakspear, F.S.A., A.R.I.B.A., of Corsham, and in order to place it in a thoroughly secure position a sum of £4,000 is required, towards which £1,500 has been subscribed. The presbytery of the Abbey, which is almost unmatched in beauty, has an Early English arcade of five bays and a unique treatment of triforium and clerestory. Upon the 13th-century walls there is a 14th-century stone vault which has no rival in English churches. It is in this part that the danger exists. Some ribs are loose and, in at least one place, are almost ready to fall. Last year £2,000 was asked for in order to make secure the lantern tower and the Early Norman south transept, and most of the work is completed, or nearly so. About £1,530 has been paid or promised. To make secure the presbytery roof will require another £2,000, so that £2,470 has still to be raised.

WALLSEND.—The workmen's hotel which has been erected by the Simpson's Hotel Company, of Newcastle and Glasgow, on a site in Buddle-street, Wallsend, and near to Messrs. Swan Hunter, Wigham Richardson, and Co.'s shipyard, was opened on Monday. The hotel has accommodation for 350 persons of the artisan class, while it will also be utilised as a restaurant. The building is constructed of fireproof material, heated by steam, and has electric light throughout, including each separate bedroom. The electric power is generated by plant in the building. There is also a laundry, dining-room, billiard-rooms, reading- and writing-rooms, sitting-rooms, bathroom, and lavatory accommodation. The building was designed by Mr. Percy L. Browne, architect, Newcastle, and the contractor was Mr. T. Lumsden, of Jarrow.

CHIPS.

The city council of Liverpool have received the formal sanction of the Local Government Board to the borrowing of £10,000 for the reconstruction and improvement of the Prescot-street Police-station.

A city mission-hall is being built in Lord-street, Belfast, from plans by Messrs. Young and Mackenzie, of Donegall-square West, Belfast. The builder is Mr. W. Dowling, of Cromwell-road, in the same city.

The Much Woolton Urban District Council, on Monday evening, accepted with thanks the offer of the chairman (Mr. Arthur S. Mather) to restore the village cross in front of the council offices, and to defray the whole cost of the same.

The Clacton Urban District Council have decided to purchase and improve the Pier Gap, and erect a bridge over it at a cost of over £8,000, and are considering the question of providing a floating bathing pavilion off the East Cliff.

Major J. Stewart, R.E., on behalf of the Local Government Board, has held a public inquiry at the Sevenoaks Urban Council Chamber regarding the council's proposal to borrow £938 for works for storm-water drainage. There was no opposition to the application.

The improvements at Earl's Court now in progress for the District Railway Company, at a cost of £70,000, are nearing completion. Three lines are being provided each way instead of two, to obviate crossing over; one set of lines will, in future, be raised over the others. The tunnel between Earl's Court and West Kensington is being removed, and will be replaced by a girder bridge.

The Eastern District Committee of Dumbartonshire County Council decided on Friday to apply to the Local Government Board for authority to prepare a town-planning scheme for an area extending from the burgh of Dumbarton to the Glasgow boundary, excluding the burghs of Clydebank and Milngavie, and including the villages of Milton, Bowling, Old Kilpatrick, Duntocher, Drumchapel, and Bearsden.

At the last meeting of the Spalding Urban District Council, the principal item of business was the consideration of the surveyor's estimate for the construction of new sewerage works, at a cost of £23,843. The council, after discussion, decided to apply to the Local Government Board for sanction to borrow the money required; also £5,400 cost of land, and £306 cost of borrowing the money, making a total loan of £29,550.

Mr. W. M. Cross, an inspector of the Local Government Board, held an inquiry at Bewdley relative to an application by the town council to borrow £3,000 for an extension of the waterworks. The town clerk (Mr. S. H. Hemingway) said the present waterworks were constructed in 1901. Mr. E. W. Berington, the engineer, outlined the scheme, and said it would effect a saving of over £300 a year over the existing plant.

A Presbyterian Church is to be erected in Oxford on the site of the old Mitre Stables in Alfred-street. The edifice, which is to be in the Tudor Gothic style, from the designs of Mr. T. Phillips Figgis, F.R.I.B.A., Old-square, Lincoln's-inn, will consist of a nave and chancel, accommodating 250 persons. Provision has been made for an organ-chamber, a vestry, and a committee-room. The site and church are estimated to cost £9,500, and towards this the sum of £6,200 has already been promised.

At Chelmsford a Local Government Board inquiry has been held by Mr. Edgar Dudley as to applications to borrow £6,575 for wood-paving and £267 for the Rectory-lane improvement. The town clerk (Mr. G. Melvin) said the subject-matter of the first portion of the application was for laying down wood-block paving in High-street, Moulsham-street, and Springfield-road, to be carried out under the direction of Mr. P. T. Harrison, the borough surveyor. The tender of Messrs. Griffiths and Co. has been accepted at £6,775.

Intercommunication.

GUINEAS FOR BEST REPLIES.

We offer a prize of one guinea every week for what we deem the best reply to any query appearing in this column.

Replies must be sent in over real name and address. No others can receive a prize. The Editor's judgment is final.

This competition is restricted to buyers of the paper, and with each reply a coupon cut from our front page must be enclosed.

Any number of replies can be sent, but a coupon of this date must accompany each.

All else being equal, brief replies will stand the best chance. We emphasise this, as some correspondents ignore the fact that querists want terse facts, not long essays. Any necessary illustrations must be in line only—no tints or washes—and about twice the size they are meant to be reproduced. We are unable to avail ourselves of replies that contain illustrations unless we receive them by first post on Tuesdays.

The right to withhold the prize in the event of no reply being received worthy of it is reserved by the Editor, who also claims the right to publish any other replies he may deem useful.

QUESTIONS.

[13131.]—SCHOOL LAUNDRY CLASS-ROOMS.—Would some reader of experience in the arrangement of small laundry class-rooms, suitable for say, twenty-four pupils, be good enough to give a plan showing how best to arrange the washing tubs and ironing tables for efficient supervision and tuition in this subject? If the tubs are set against the walls under the windows, the instructor is always behind the scholar at a disadvantage, and if there is a gangway behind the range of fixed tubs, much space for ironing tables is lost, just where room is most necessary. In "Domestic Science Centres" it is uncommon to find laundry class-rooms provided, particularly in girls' secondary schools, where the subject has foolishly been hitherto treated as if it were of less consequence than cooking. Laundry classes in elementary schools are common enough, but very few examples of such an arrangement for more advanced children are to be seen, therefore a good illustrated answer to this enquiry would be valuable to many besides myself.—Educationalist.

Mr. Sydney Ford, surveyor under St. Columb Rural District Council, was on Friday appointed surveyor of Camelford Rural District at a salary of £125 a year.

The Norfolk County Council have agreed to apply to the Local Government Board for sanction to borrow £30,000 for rebuilding damaged highway bridges.

The Barnet Board of Guardians have instructed Mr. Williams, their architect, to prepare plans and specifications for building a home for the children under their care. The building is estimated to cost £12,000, and the board have decided to advertise for a quantity surveyor.

At the Dewsbury Town Council meeting on Friday, a recommendation to enter into an agreement with the National Electric Construction Company for the construction and leasing of tramways to Shaw Cross and Dewsbury Moor was adopted by a large majority.

The Darlington Corporation have appointed a special committee to consider the provision of additional accommodation for the staff. At present the routine work is very often disorganised by the fact that the various departments are scattered all over the town, and are totally unadapted for carrying on the work.

The town council of Worthing decided on Tuesday night, by 21 votes to 5, to purchase the Beach House estate as a winter garden. The house has a spacious lawn overlooking the English Channel, and its acquisition will enable the council to extend the marine drive along the sea-front. Provision will also be made for additional bowling-greens and tennis-courts. The price asked by Sir Edmund Loder for the estate of 18½ acres was £20,000. But the net cost, after allowing for re-sale of land and other contemplated receipts, is estimated at about £10,000.

The professional connection as an architect and surveyor of the late Mr. J. B. Corby, M.S.A., of Stamford, has been succeeded to by Mr. William Pywell, F.R.I.B.A., of Hanwell. Mr. Pywell, who is a native of Stamford, and was articled with Mr. Corby, has carried on his profession in London for about 33 years, his works including the restoration of Hanwell parish church (one of Sir Gilbert Scott's earliest churches) after fire, the church of St. Lawrence, Brentford (consecrated in July last), the erection of the Church of St. James, Ealing (accommodation 750), and the building of schools for the Middlesex County Council.

LEGAL INTELLIGENCE.

A BUILDER ACQUITTED OF MANSLAUGHTER.—Benjamin Jewell, builder, of Stroud Green-road, Stroud Green, surrendered to his bail at the Central Criminal Court on Monday, before Mr Justice Rowlatt, to answer an indictment charging him with the manslaughter of his daughter Nora. He pleaded Not Guilty. Mr A H Boikin and Mr Percival Clarke prosecuted, and the defendant was represented by Mr G C Kingsbury and Mr H H Curtis Bennett. The case for the prosecution was that the child, who was seven years of age, was suffering from diphtheria, and that the defendant, a Christian Scientist, had failed to call in medical aid. Mr Justice Rowlatt, on the ground that the medical evidence showed that the child was suffering from an uncommon form of the disease, and that no symptoms indicating her condition to be serious had appeared, directed the jury to return a verdict of Not Guilty. The defendant was accordingly discharged, the judge beseeching him to be more rigidly careful in any future case of illness.

HALIFAX BY-LAWS AND AN ALLEGED BREACH.—An interesting case was brought before the Halifax Borough Bench last Monday morning, when Councillor C. H. Smithson was summoned at the instance of the Halifax Borough Corporation, for a breach of the building regulations in regard to the house Fentercroft, Savile-road, Halifax. Mr. James, assistant solicitor to the corporation, appeared for the prosecution, and defendant was represented by Mr E W Norris, of Messrs. Hill and Norris. Mr. James, in opening the case, said the proceedings were taken under Section 58 of the Halifax Corporation Waterworks and Improvement Act, 1868, the defendant having built a house which was not in accordance with the plans approved by the town council. Section 63 of the same Act provided for a penalty of £5 for each offence. Councillor Smithson, through his architect, submitted plans for a new house called Tentercroft, in Savile-road, on March 25, 1912. Those plans showed the house, and also a motor garage which was going to be built, and abutting on Savile-road. The roof of the garage was shown to be the ordinary roof, and slightly projecting over the road. The plan was approved, and the building operations were commenced. Some time in March of this year the building inspector paid a visit to the building, and found that the roof of the garage had not been built in accordance with the plans, the eaves projecting about 18in. over the pavement. The defendant's attention was drawn to the fact in a letter from the borough engineer, and the architects were asked to remedy the defect. Although every opportunity was given to have the work carried out, nothing was done, and the council decided to take proceedings. It put the council in a somewhat difficult position if they passed it over, because, in that event, they would not have any logical reason to prosecute in any breach of the by-laws when the occasion arose. It put them in a difficult position in this case especially, seeing that the defendant was a councillor and a member of the borough corporation. There had been a considerable correspondence between the parties; but he would only refer to two letters. On May 21 the borough engineer wrote to Messrs. Walsh and Nicholas, the architects, stating that the house had been inspected, and calling attention to the fact that the motor garage roof had not been constructed in accordance with the plans which had been approved. On September 1, Messrs. Hill and Norris replied, stating that it did not appear to them that there had been any breach of the by-laws, nor was there any inconvenience to the public, or any interference with the public rights. To remove and remedy the roof, as suggested, would make the house unsightly, and would detract from the appearance of Savile Park-road. That letter would seem to show that the defendant admitted he had constructed the building not in accordance with the plans. Those were the facts of the case, and, if the Bench was satisfied that a breach if the by-laws had been committed, they would have no alternative than to convict. The defendant's architects had admitted that there was a breach, because, some time after the buildings had been finished, they sent in an amended plan, showing the projecting eaves. These plans were disapproved by the council. Under Section 63 of the Act he had referred to, the Bench were given power to impose a continuing penalty for the offence until the offence had been done away with. He was going to ask the Bench to impose a continuing penalty until the roof had been made in accordance with the plans. Otherwise it would pay people to commit breaches of the by-laws, and then come to court and pay whatever fine the Bench might impose, if it ended there, and they need do nothing further. Mr. Norris: Are you going for the continuing penalty or just a penalty for the offence? I do not wish to take any objection to the jurisdiction; but I raise the point that we are charged in the summons with having built this roof within the last six months. The roof was constructed before the last six months.—Mr James: The expiration of the six months would not debar us from going for the continuing penalty. We can only find out about a house when the house is finished and we get the architect's final certificate. That is the only lay we can fix the date of the final certificate.—The Clerk: The time will run from the date of that certificate.—Mr. Norris: I shall not go into the details now; but I should like to know what my friend is going for, and then I shall know what I have to defend.—Mr. James: We are going for a penalty for the offence, and a continuing penalty as long as it is not remedied. John Saville Goldthorp, building inspector to the corporation, said the plan of the house in question was first disapproved by the improvement committee on March 9 last year. It was afterwards amended and approved. The roof of the motor-house was an ordinary roof, with roof troughing 4½in. to 5in. wide. He inspected the house the day after the notice of completion was received. He found that the eaves of the motor-house overhung the pathway to the extent of 18in. The eaves had projected some 7in. on the approved plan. Cross-examined: He agreed that the projecting eaves of the motor-house did not make the house any less fit for habitation, and did not contravene the by-laws made under the Public Health Acts.—Mr. Norris: The effect of the borough engineer's letter is that the house cannot be granted a certificate as fit for occupation?—Witness: He could not sign the certificate because the approved plans had not been conformed to.—You think that this is a material reason for refusing to certify the house as fit for occupation?—Yes; because where one was allowed to do it, many others would come along and want to do it. They would say "If a councillor is allowed to do this, why can't we?"—Then you think it is material because a councillor is concerned?—No; but that fact makes it more material.—But leaving out that question, do you consider that the deviation from the approved plan by the spouting projection about 10in. more than in the approved plan is a substantial and material deviation from that plan?—Yes; in a main road. Do you know that the house formerly occupied by Mr. J. T. Riley in the same street projects a great deal more than this one?—The gable there is a great deal higher, and the roof would have to project 4ft. or 5ft. to project as much proportionately. That house was also built before the existence of the present by-laws.—Mr. Norris: Not before the date of this Act, 1868?—Witness: No.—Mr. James: have you known plans to be passed with eaves projecting like this since you have been here?—No.—How long is that?—Fourteen years.—I think your objection is also based on the fact that if the corporation allowed this to pass, they could not object to another projection in the same building—to the putting in of a bow-window, for instance, below this projecting roof?—That is so.—Mr. Norris submitted that the deviation in the plan was not a substantial or material one, the only deviation being the projection of the roof troughing a few more inches than was shown on the plan. It was at the discretion of the Bench under the Summary Jurisdiction Act, if the matter was trivial or trifling, to dismiss the case without proceeding to a conviction. In this case, it was admitted that the only deviation that was taken exception to was the slight projection of the roof, which he submitted was not a material deviation. Mr. Norris cited several cases in support of his contention. The witness Goldthorpe had practically admitted that if it had not been on the street side, he himself would not have considered it a material deviation at all.—After consultation the Bench decided to adjourn the case for one month. If in the meantime the roof was made in accordance with the plans, nothing further would be heard of the matter. If the work was not carried out, then they would proceed to impose a nominal penalty.

PEACEABLE PICKETING.—At Westminster Police-court on Saturday, before Mr. Francis, Walter Alexander, forty-two, of Kensington-buildings, Earl's Court-road, was charged with assaulting Edward Roche, of Sotherton-road, Hammersmith, by presenting a revolver at him. The prosecutor, a painter and decorator, said he was on strike. About mid-day on Friday, he was at Prince's-gardens, South Kensington, interviewing a member of his Trade Union who had broken away from the organisation. The defendant was apparently at work at the house.—Mr. Francis: What right had you there?—The prosecutor: I was appointed a delegate from the Hammersmith branch of my union. What business had you to trespass there? I went there and ordered a man upstairs. Surely that is not trespass. I was discussing the matter with the foreman, saying he had done wrong in going back to work. The foreman said he was in an awkward position. He asked me if I had interviewed any of the other foremen who had broken away, and I said I had. While we were discussing [illegible] Was this on the premises at Prince's-gate? Exactly. I wonder they didn't kick you out. While we were discussing the defendant intervened with some nasty remark concerning Trade Unionism. He said he had stood down for a week on principle and got nothing for it. I told him I was not aware that a man who acted on principle wanted anything for it. The defendant then put his hand in his pocket, pulled out a revolver, and said: "I will shoot your brains out." Not knowing whether it was loaded or not, I thought it advisable to call in a police-sergeant who was in the vicinity. The defendant handed him the revolver, and I afterwards preferred a charge of threatening to shoot me. On being examined, the revolver was found to be unloaded. The defendant on being asked if he wished to question the prosecutor replied: "I don't think it is worth while. He has told a parcel of lies. He threatened to smash my face in. I told him I would not leave work for him or anyone else. He called me a dirty dog." The prosecutor: I should not call him a dirty dog, because that would be a libel on dogs.—Mr. Francis: This shows the sort of individual we have to deal with.—The defendant: My idea was simply to frighten the man. I have been worried and annoyed so much. I knew the weapon was quite harmless.—Police-sergeant Ash said when he was called to the scene, the defendant at once handed over the revolver—a seven-chambered weapon—and witness saw that it was unloaded, and that the hammer was broken. The defendant said nothing when charged. The witness added that the painters had been holding a meeting that day at Barham-gate to protest against the action of the firm in whose employ the defendant was. So far as witness could learn from the men, they were being paid a halfpenny more per hour than the strikers demanded; but the masters refused to sign any agreement. It was in consequence of this that the bother arose. The defendant, from the witness-box, said he had recently joined the Painters' Union. That afternoon the prosecutor came and endeavoured to persuade them to leave their work. The foreman said he had a good job, and hardly knew what to do. He (the defendant) said he would not leave the job under any conditions, as he was receiving 11d. an hour. The prosecutor told him he was "a dirty dog," and threatened to smash his face in so that he would not be able to do any work at all. As the prosecutor raised his hand, he (the prisoner) took the useless revolver from his pocket, and held it up, simply to frighten him. This was the first day he had carried it; but he had been much annoyed by these people. Mr. Francis dismissed the charge, and the prisoner was discharged. Mr. Francis: And I am not at all sure that the prosecutor is not a person who ought to be bound over. The employer of the prisoner, who was prepared to give him a good character, said the men in his employ were awkwardly placed, and hardly knew what to do.—Mr. Francis: Yes. I dare say Alexander would have been justified in asking for a summons for threats. But I can only deal with the matter before me.

LITIGATION OVER TILES.—Sheriff-Substitute Guy has issued judgment in an action at the instance of the Marsden Tiles (Limited), Fairfield Works, Burslem, Staffordshire, against Allan and Sons, marble and tile merchants, 3, George-place, Leith-walk, Leith, for payment of the balance of an account for tiles supplied by the pursuers to the Royal Scottish Academy. His Lordship had granted absolvitor, with expenses. In a note, his Lordship said that the pursuers supplied the tiles on the instructions of his Majesty's Board of Works. The pursuers chose to supply the tiles to the order of the Board of Works, and they now took up the position—possibly for the purpose of securing further orders—that the Board of Works were not their debtors. If that were so, and their attitude were businesslike throughout, they ought themselves to have made someone responsible by agreement. They did make inquiries as to who the contractors were; but the persons whom they were informed were the contractors were the defenders. The letter of the defenders asking the pursuers to send invoices to them was, in his opinion, not sufficient to infer liability for the whole, or, indeed, any part of the account.

LONDON.—After interviewing trade-union delegates on Tuesday, the London Master Builders' Association passed a resolution agreeing to meet the painters with regard to working rules, but only on condition that all existing

strikes shall first cease, and work be resumed, and no strike to take place in future until the dispute has been submitted to the Conciliation Board. The strike committee considered the masters' resolution the same night, but arrived at no definite decision. Yesterday a meeting of the strike committee discussed a scheme of settlement, which is being ballotted on to-day, and the result will be made known to-morrow. Meanwhile the London Labourers' Council, a hybrid body which the Master Builders have never recognised, and from which the United Builders' Labourers' Union withdrew twelve months ago, is looking for trouble. The United Builders' Labourers are not in the least likely to strike to please the rest of the half-dozen or so unions with which they have little in common. The conviction of the Master Builders, that all this unrest is simply the work of agitators, who are making capital out of the professed desire to coerce all non-unionists into the unions, is justified, and if any really serious trouble ensues, which is not likely, they are quite ready to resist that demand to the uttermost.

The Winnipeg Municipal Council has passed a by-law involving the expenditure of 13,000,000dol. for the construction of a water system from Shoal Lake.

Mr. George N. Abernethy, engineer-in-chief to the Fraserburgh Harbour Commissioners, has been appointe l consulting engineer to the Public Works Loan Board.

The day and evening schools of the Glasgow School of Art, of which Mr. Francis H. Newbery is the director, open on Tuesday next, the 16th decided to apply to the Local Government Board

The foundation-stone has been laid of a Wesleyan chapel in Pellon-lane, Halifax. The architects are Messrs. Hebblethwaite and Utley, of Halifax, and Messrs. Parker Bros., of Hipperholme, are the builders.

The death is announced of Mr. Joseph Johnson, A.R.I.B.A., 47, Mark-lane, E.C. Mr. Johnson, who had been an Associate of the Institute since 1882, was the architect for the Gravesend Jubilee clock tower.

The partnership hitherto subsisting between J. M. Gething and J. M. Gething, carrying on business as architects and surveyors, at Kidderminster and Stourbridge, under the style of Gething and Son, has been dissolved.

The Worcestershire County Council received on Monday a report from the Small Holdings committee, stating that they had agreed to purchase 41a. 1r. 28p. of land at Offenham, for the sum of £3,750. It was proposed to sell this land under the provisions of the Small Holdings and Allotments Act to local applicants who would pay down one-fifth of the purchase money, and the balance within a period of forty years, with interest at the rate of £4 per centum per annum.

The town council of Cheltenham have secured the sanction of the Local Government Board to the proposed purchase for £5,500 of five houses in the Promenade, with a view to their adaptation as municipal offices. It is estimated that the alterations will involve an outlay of another £4,500, and should this prove somewhere near the mark, the town will obtain adequate and efficient accommodation under one roof for all its departments at a yearly cost no larger than is now being expended by way of rental on scattered premises.

At Peasedown St. John, on Monday, the Countess Waldegrave opened the new council schools. Provision is made for 655 children, but four additional classrooms, sufficient for a further 208 children, can at any future time be added at a very low cost. The amount of the contract, including teacher's house, was £7,250. The actual cost of the building, excluding the teacher's house and the conversion of other premises at the rear, was £6,515, equivalent to £9 19s. 3d. per head for the present accommodation, and the building worked out at 5¾d. per cubic foot.

Pollokshields Parish Church, near Glasgow, was reopened on Sunday, after extensive alterations, including a new organ given as a memorial. The instrument has been erected by Messrs. Harrison and Harrison, of Durham and London. It has been divided and enclosed in a carved oak case, designed by Mr. H. E. Clifford, F.R.I.B.A., St. Vincent-street, Glasgow. The organ, with case, cost £1,800. Mr. Clifford has also designed and carried out the other alterations to the church. These include the formation of a chancel paved with rich marble, and the entire renovation, repainting, and relighting of both church and halls. This work has cost £1,200.

WATER SUPPLY AND SANITARY MATTERS.

SPALDING.—A special meeting of the Spalding Rural District Council was held on Monday to consider tenders for the laying of water mains, in connection with the council's water scheme. The works purchased from the South Lincolnshire Water Company include the bore at Pinchbeck West and a section of 7in. main already laid from the borehole to Pinchbeck Hall; also a similar main through Moulton Parish. To bring the scheme into operation it is necesary to carry out further work in various parishes, according to plans and specifications prepared by Mr. E. J. Silcock, water engineer, of Leeds. The tenders ranged from £10,518 to £14,870. After discussion, it was resolved to further consider them at another meeting.

CHIPS.

A receiving order has been made in the case of Joseph Bickley, Lillie-road and Seagrave-road, Fulham, builder and contractor.

The new joint secondary school and technical institute at Waterfoot, which has been erected at a cost of £26,000, to serve the boroughs of Bacup and Rawtenstall, is now completed.

The fifty-second annual exhibition of the Royal Glasgow Institute of the Fine Arts will be opened at the Galleries, 270, Sauchiehall-street, Glasgow, on Monday week, the 22nd inst.

The Wesleyan chapel at St. Day, Cornwall, was reopened on Friday, after renovation and reseating, carried out at a cost of £400, from plans by Mr. Sampson Hill, architect, of St. Austell.

A Congregational chapel, built in Poplar-road, Tredegar, at a cost of £1,000, has been formally opened. Mr. A. F. Webb, of Blackwood, Mon., was the architect, and Mr. Rees Edwards, of Tredegar, the contractor.

The corporation of Plymouth were informed on Monday that the sanction of the Local Government Board had been given to the borrowing of £8,000 for the widening and improvement of Weston Park-road.

The Queen's Hall Cinema, in Northumberland-street, Newcastle-on-Tyne, was opened by the Lord Mayor of that city on Monday. It has been built from plans by Messrs. Hope and Tasker, architects, of New Bridge-street, Newcastle.

Water was let in at the new joint dock at Hull last week, and the dock, which is the largest on the East Coast, will be open to shipping shortly. It has been constructed by the North Eastern and Hull and Barnsley Railway Companies, at a cost of £2,000,000.

The Minnesota State Board of Control have been notified that Mr. Clarence Johnson has been selected by the State Historical Society as the architect for its new building at St. Paul, Minn., for which the Legislature has appropriated 500,000dol., plans of which will be at once drawn.

In connection with the water supply scheme of the Leeds Corporation, it was announced on Tuesday that the waterworks committee proposed to supply not only the town of Doncaster, but also several rural districts in the West Riding, including Tadcaster. The construction of Colsterdale reservoir is to follow that of Leighton reservoir, which is now in progress.

The wooden highway bridge over the River Ouse, connecting the villages of Magdalen and Watlington is being reconstructed in iron for the Norfolk County Council. The new bridge will be of three spans, and will cost over £6,000. Messrs. Archibald Dawnay and Son, of London, are the contractors, and the lesser contract, for the temporary wooden bridge, was taken by Mr. William A. Bardell, of Lynn.

The Bridlington Town Council have unanimously decided to proceed forthwith with a seaward extension of the Royal Princes' Parade, in accordance with plans prepared by their borough engineer, Mr. E. R. Matthews, A.M.Inst.C.E., F.R.S.E., and at an estimated cost of £50,000. Mr. Matthews designed and carried out the last extension of the parade, which cost nearly £40,000.

President Woodrow Wilson has sent to Congress a report by the commission of fine arts, outlining a plan for beautifying the Panama Canal. This includes two monuments and impressive architectural features at the entrance. Mr. Daniel C. French, the New York sculptor, and Mr. Frederick Law Olmstead, landscape architect, of Boston, Mass, spent two weeks on the isthmus, and the report submitted is based on their recommendations. The commission does not find the canal construction work to be of architectural beauty.

Our Office Table.

Remarkable evidence of the lack of adequate office provision in the Sheffield town hall was given at a Local Government Board inquiry on Tuesday, conducted by Mr. R. H. Bicknell, M.Inst.C.E., inspector, when sanction was sought for the borrowing of sums amounting to over £50,000, of which nearly £43,000 was for extensions to the town hall, from plans prepared by the city architect. In support of this particular application, Alderman Stephenson said he regarded the extension as overdue. He believed that an undue amount of sickness in the town-hall staff was attributable to the overcrowded conditions in which they worked. The staff numbered 458, as compared with 220 in 1897, after the building was opened. Mr. G. H. Wilkinson, chief assistant overseer, said it was not infrequent at specially busy times for members of the staff to faint, and within the last eighteen months two had had to be carried out. There were frequent complaints from people who experienced long delays when paying their rates, and the place was sometimes so crowded they could not pass out. The original cost of the site and building of the town-hall, which was built from the designs of the late Mr. E. W. Mountford, F.R.I.B.A., selected in open competition, was £187,587.

Mr. Thomas Adams, Local Government Board inspector, held an inquiry on Monday into the application of the Birmingham City Council to prepare a town-planning scheme for North Yardley and Stechford. The town clerk stated that the scheme dealt with an area which included 3,176 acres, of which 2,065 were in Birmingham, 1,108 acres in the parish of Castle Bromwich, and three acres in the parish of Minworth. Several portions of the area mentioned were not likely to be built upon for some years. The village of Stechford had been excluded from the scheme as being already built up, and another area of 48¼ acres near the Coventry road had been excluded for similar reasons. Mr. Neville Chamberlain, chairman of the Birmingham town-planning committee, gave evidence in support of the scheme. Mr. Joy, barrister, pointed out that, while the owners of property might be willing to fall in with the town-planning scheme, they would like to know what the corporation proposed to do. Section 56, sub-section 2, provided for co-operation between the local authority and owners interested in the land proposed to be dealt with under a scheme. The inspector promised to convey the council's representation to the Board.

The University Extension Board have arranged for the delivery during the coming session of a fully-illustrated course of from ten to twenty lectures on "The Art and Craft of Architecture," to be given at the Central School of Arts and Crafts, Southampton-row, W.C., on Thursday evenings at 8 p.m., beginning on October 2, when Professor W. R. Lethaby, F.S.A., will occupy the chair. In the Michaelmas term Mr. S. C. Kaines Smith, M.A., will deal with the growth of decorative arts from 1050 A.D. to 1550 A.D. These will be followed by twelve lectures on the art and craft of English architecture, by Mr. Theodore Fyfe, F.R.I.B.A., in which, from an historical point of view, the application of stonework, woodwork, and brickwork to decorative uses in English buildings will be fully dealt with.

A report by Mr. F. C. Eeles, ecclesiological expert of the Royal Commission on Ancient Monuments in Scotland, shows that the ancient church of St. Cormanell, Buittle, Kirkcudbrightshire, is in a condition which makes it imperative that steps should be taken at no distant date to save this interesting old building from further decay. In all probability the church, which dates back to the 13th century, is one of the many buildings which Galloway owes to the Lady Devorgilla, mother of King John Baliol. It is an exceptionally fine example of a mediæval parish church—certainly the finest in Galloway or Dumfriesshire - and its decadence to absolute ruin would mean an irre-

parable loss. An application to H.M. Board of Works to take the church under its care was made without success some months ago. Since Mr. Eeles's report was received another application has been made to the Board, but should this second petition be in vain, an appeal will be made to the public for funds for the preservation of the church.

The present Government of the Commonwealth of Australia do not intend, as had been asserted, to reverse the policy of their predecessors in regard to the establishment of the Federal capital at Canberra. The Federal Ministers accept the main principles of the scheme for laying out the city adopted by the expert advisers of the Home Affairs Department, with such modifications as may be considered advisable. They will endeavour to introduce such economies and businesslike supervision as may be expected to make the capital pay for itself in the end. Although the work is still in its infancy, considerable progress has been made at Canberra. The expenditure on the territory, which covers nearly 567,000 acres, is already approaching half a million pounds. At the end of June the total outlay was over £420,000, while contracts in course of execution at that time involved about £90,000. The present revenue derived from the territory is about £5,000, over half of which comes from rates. The total expenditure mentioned includes the outlay in connection with the naval and military colleges.

Mr. Cook, the Prime Minister of Australia, states that Mr. W. B. Griffin, the Chicago architect, who won the £1,750 first prize offered by the Commonwealth for the capital city designing competition, has been invited to visit Australia in order that all doubts may be removed as to whether the plan prepared by departmental officers is really the best that could be secured, and to review his scheme in the light of local circumstances. Mr. Cook points out that the "accepted" plan was really a collection of what were regarded as the best points in each of the premiated schemes, which had been rearranged and adjusted by officers of the Home Affairs Department. The various stages of development of Canberra already provided for are as follows:—First: Country roads and bridges, railway connection with Goulburn-Cooma line; brickworks, limekilns; timber (first instalment), generation and transmission of power for construction. Second: Water-supply, storm-water drainage, sewerage outfall works, main sewer, sewerage district for workmen, timber (second instalment), railway bridge over the Molongo River. Third: Street tunnels, power plant (permanent station and distribution), construction of housing for workmen, service reservoirs, impounding weir on Cotter River. Fourth: Public buildings (offices for use during construction), gasworks, compensating weir on Queanbeyan River, railway to Hall (Queanbeyan to Yass line), impounding weir on the Molongo for ornamental water, erection of public offices and buildings, erection of Parliament House, completion of city roads.

Last year cremations in the United Kingdom numbered 1,064—the largest number recorded since cremation was first practised in this country in 1885. Of these 15 were at Woking, 149 in Manchester, 44 in Glasgow, 52 in Liverpool, 27 at Hull, 15 at Darlington, 14 at Leicester, 521 at Golder's Green, 40 in Birmingham, 24 at Leeds, 32 at Ilford, 12 at Sheffield, and 9 at Bradford. Since 1885 the total number of cremations has been 11,047—namely, at Woking, 3,565; Golder's Green, 3,486; Manchester, 1,733; Liverpool, 603; Glasgow, 435; Birmingham, 270; Hull, 254; Ilford, 167; Leeds, 143; Leicester, 131; Sheffield, 91; Darlington, 87; and Bradford, 82. The first crematorium in England was opened in 1885 at Woking, where three bodies were cremated. Several large cities afterwards at intervals established crematoria, and the Golder's Green Crematorium was opened in 1902. The City of London Crematorium at Ilford was established in 1905.

The Municipal Council of Venice will hold next year, from April 15 to October 31, its Eleventh International Art Exhibition. It will contain pictures, sculptures, miniatures, drawings, engravings of all kinds, and, on special invitation, a collection of specimens of decorative art. The exhibition is founded by, and is under the administration of, the municipality. It will be divided into Italian, Foreign, and International rooms. Artists who have figured prominently in national and foreign exhibitions are invited to the exhibition, and their works are not submitted for examination by the jury of admission, as are the works of artists not so invited. The municipality, with the liberal aid of public administrations and private citizens, will allot a considerable sum for the purchase of works of art, which will be placed in the International Gallery of Modern Art of the city. Works intended for exhibition must be notified not later than January 1, 1914, and exhibits must be delivered at the premises of the exhibition not later than March 10, 1914. All communications should be addressed to the Secretary, Office of the Exhibition, Municipio di Venezia.

By a recent enactment of the legislature of the State of Massachusetts, every city of the Commonwealth and every town of over 10,000 population is authorised and directed to create a city planning board. The Act outlines the duties of the board, in the making of studies and investigations of resources, possibilities and needs of the district under their control, with particular reference to any conditions that might injuriously affect rented dwellings. The board is further empowered with reference to proper housing conditions. In cities the boards are to be appointed by the mayor, subject to confirmation by the common councils, while in towns the members of the board will be elected by the voters at the annual meetings.

The *Birkenhead Advertiser* last week celebrated its diamond jubilee, the first number having been issued on September 3, 1853. In commemoration of its sixty years' existence, the proprietors and publishers, Messrs. B. Haram and Co., issued a handsome souvenir along with the ordinary publication of the newspaper. The history of the "Advertiser" is practically the history of Birkenhead, which, sixty years ago, was a very insignificant place. During the whole term of its existence the newspaper has maintained a go-ahead policy, and has been identified with the remarkable progress of the town throughout the past half-century. The history of the town is sketched in an interesting manner in the souvenir, and there are numerous reproductions of old prints, showing the quaint character of the streets and river front in the early days. Portraits of makers of Birkenhead, past and present, are also given, together with a photographic facsimile of the first issue of the "Advertiser."

Messrs. E. and F. N. Spon, Ltd., send us the twenty-seventh edition of "Molesworth's Pocket-Book," which is enlarged to 944 pages and issued at 5s. Also "Building Supervision," by G. W. Grey (2s. 6d. net), which relates some funny, but useful, stories about the "Reinforced Concrete Specialist" and others, and is generally well worth reading. Also the third edition of Mr. D. B. Butler's well-known book on "Portland Cement" (16s. net), which was last issued in 1905, and naturally needed bringing up to date.

A council school at Glossop, built at a cost of £7,000, has been formally opened. Mr. H. Cooper Anderson was the architect.

The town council of Gillingham, Kent, have decided to increase the borough surveyor's salary to £450, rising to a maximum of £500 by annual increments of £25 per annum.

The first meeting in connection with the town-planning proposals of the Smethwick Town Council was held at the council-chamber on Tuesday night. The area proposed to be dealt with is 330 acres, and the suggestion is to follow the borough boundary on the west side from Thimblemill-lane, along West Smethwick Park, and on the other side down Devonshire-road and Cooper's-lane, so that the area will practically adjoin that which is to be dealt with on town-planning lines by the Oldbury District Council.

MEETINGS FOR THE ENSUING WEEK.

SATURDAY To-morrow.—Junior Institution of Engineers. Visit to Works of R. Waygood and Co., Ltd., Falmouth-road, S.E., 10 a.m.

Northern Architectural Association. Excursion to the Gateshead Asylum, Stanhope. Tea. Assemble at Morpeth Station, on arrival of 3.27 p.m. train from Newcastle.

SATURDAY Sept. 20.—Royal Photographic Society. "Geologists with a Camera," by J. Martin Duncan. Suffolk-street, Coliseum, Haymarket, 8.30 p.m.

Institution of Municipal and County Engineers. Eastern District Meeting at Hounslow.

The salary of Mr. Percy Horsley, borough engineer, of Hartlepool, has been increased by £40 per annum.

A new higher elementary school at Pontardawe, built at a cost of £12,500, has been formally opened. The contractors were Messrs. R. Wilkins and Sons, of Bristol.

At Monday's meeting of Aberdeen Harbour Commissioners, the salary of Mr. Hugh R. Barr, assistant harbour engineer, was raised from £250 to £300 per annum, with a further advance of £50 next year.

At Bangor County-court, Edward Foulkes, now a joiner, and formerly a builder, of Colwyn Bay, was granted his discharge in bankruptcy on Monday, subject to judgment for £70 being entered against him.

The directors of the Associated Portland Cement Manufacturers, 1900, Limited, announce a dividend on the ordinary shares—the first since the company was formed—of 5 per cent., for the year ended June 30.

The corporation of Stockport have received sanction to borrow £49,254 for the extension of the sewage-disposal works; £3,927 for machinery, sprinklers, etc.; and £7,000 for ferro-concrete work, and for piling the river bank.

Lack of cottage accommodation was discussed at Wednesday's meeting of the Epsom Rural Council, and an offer from the Tattenham Park Land Co. to sell 2¾ acres of land in Station-road, Tadworth, at the rate of £250 per acre as a site for dwellings, was accepted.

The Board of Trade has sanctioned the Rhyl Urban Council's plans for a new landing jetty on the foreshore, and the town-clerk is in communication with the Board as to the charges to be made for using the jetty. Tenders have been received, and it is hoped to get the structure ready for next season.

The building committee of the National Museum of Wales at Cardiff met on Tuesday at the Westminster Palace Hotel, London. Four tenders for the erection of the shell of the southern block of the new building were received and considered, and that of Messrs. Henry Wilcock and Co., of Wolverhampton, was accepted at £65,895.

The Bristol City Council adopted on Tuesday a report of the docks committee recommending that Parliamentary sanction be sought for spending £45,000 on new berths at the City Docks. It was explained that the amount does not include equipment. The expenditure of £25,000 on another berth at the Royal Edward Dock at Avonmouth, to accommodate a new branch of the oil trade, was also approved.

The 400th anniversary of the death on Flodden Field of James IV., who founded Ladykirk Parish Church, Berwickshire, was celebrated at Ladykirk on Monday by the dedication of a new churchyard and gateways. The King, in gratitude for his army's safe passage of the Tweed at Ladykirk, when they advanced to sack Norham Castle, vowed a church to the Virgin Mary, and founded Ladykirk in 1500.

The excavations at the Roman ampitheatre at Dorchester, the cost of which is borne by public subscription, have been again renewed for the fifth year under the direction of Mr. St. George Gray, of Taunton Castle. Some remarkable finds have been made, the chief feature being a deep pit or well cut in the virgin chalk on the edge of the arena. Mr. Gray is having the cavity, which is about 4ft. in diameter, cleared out and thoroughly searched.

The members of the Royal Commission appointed to inquire into the housing of the industrial population of Scotland, rural and urban, and to report what legislative or administrative action is, in their opinion, desirable to remedy the existing defects, visited Moffat and Beattock on Monday and Tuesday, in the course of their inquiries. The members of the Commission were presided over by Sir Henry Ballantyne, Peebles. Other parts of Dumfriesshire have been visited during the subsequent days of this week.

Trade News.

WAGES MOVEMENTS.

CRICCIETH.—The unrest among carpenters and joiners, which has resulted in a strike at Holyhead, is making itself felt also at Criccieth. The master builders have received formal notice from the local carpenters and joiners that, owing to the continuous increase in the cost of living, they will with reluctance stop working on November 3 next unless their wages are advanced by 1d. to a minimum of 5s. 4d. a day.

OXFORD.—The builders' labourers' section of the Workers' Union at Oxford went out on strike on Monday morning. Employers have had a month's notice with regard to the application for an increase of wages by 1d. an hour and new working rules. They offered a ½d. rise in November. The recognised rate is 5½d. an hour. The men say that, owing to bad weather stoppages, the average amount earned all the year round is from 17s. 6d. to 18s. a week instead of 24s. In consequence of the strike, the Long-vacation work on various colleges, and the new buildings for Pusey House are at a standstill. About 400 men are out.

DISPUTE IN THE GLASSWORKERS' TRADES.—Under the auspices of the London Labour Conciliation and Arbitration Board, friendly conferences have been held between the London Employers Plate Glass Trades' Association and the National Amalgamated Furnishing Trades' Association (Glassworkers' Section), at the offices of the London Chamber of Commerce, Mr. C. E. Town, assistant secretary of the London Chamber of Commerce, at the request of the parties, occupied the chair. As a result of the discussion of the various points in difference, an agreement has been arranged by which all the points in dispute have been settled by mutual consent. The agreement, signed by the parties concerned, provides for the future conditions of employment in the Glass-workers' trades, fixes the number of hours, the rates of wages, payment of overtime, allowances for meal-times, number of apprentices, etc., provides for the settlement of future differences between the parties, and remains in operation for 12 months, subject to due notice of termination thereafter. The men who have been on strike for the past six weeks returned to their employment on Monday morning.

The death is announced of Mr. Charles Ratcliffe, surveyor of main roads at Stroud.

A large laundry has been built at Wymondham, Norfolk, from plans by Mr. J. W. Fisher, of that town.

An intermediate school for girls at Aberdare, built at a cost of £14,000, has been formally opened. Mr. J. H. Phillips, of Cardiff, was the architect, and Mr. S. F. Howells, of Cardiff, was the contractor.

Mr. C. F. Wike, the city engineer of Sheffield, has prepared a scheme for covering over the River Sheaf in connection with the new street work and markets improvements. The estimated cost is £10,439, and instructions have been given for the work to be carried out.

In Carlisle Cathedral on Wednesday the Speaker of the House of Commons unveiled a memorial bronze medallion of Sir James Graham, of Netherby, a leading statesman and Member of Parliament for Carlisle and Cumberland constituencies, whose death occurred fifty-two years ago.

Mr. Henry Criswell, who has held an appointment on the engineering staff of the county surveyor for West Sussex, has been appointed chief roads engineer to the Peruvian Government at a salary of £1,200 per annum. Mr. Criswell, who has signed a three years' contract, sailed for Peru on Wednesday.

The municipal school of art at Nottingham is about to be enlarged from plans prepared by the city architect. The plans of the extension have been approved by the Board of Education, and the council have sanctioned the expenditure of £3,500. The city architect is at present engaged in getting out the conditions of contract, so that the work may be undertaken within a very short time.

The session of the Glasgow School of Architecture, which is under the superintendence of a joint committee representative of the Royal College and School of Art, opens on Tuesday next, the 16th inst. The director of architectural studies is Professor Eugène Bourdon, B.A.; Mr. Alexander McGibbon, A.R.I.B.A., is the Professor of Architectural Design; and Mr. Charles Gourlay, B.Sc., A.R.I.B.A., of the History of Architecture, assisted by a large staff.

LATEST PRICES.

IRON.

Steel Joists, Belgian and German (ex steamer, London)	per ton	£6	2	6	to	£6	5	0
Steel Joists, English		7	10	0	,,	7	12	6
Wrought-Iron Girder Plates		7	0	0	,,	7	5	0
Steel Girder Plates		7	2	6	,,	8	2	6
Bar Iron, good Staffs		6	5	0	,,	8	10	0
Do., Lowmoor, Flat, Round, or Square		20	0	0	,,	0	0	0
Do., Welsh		5	15	0	,,	5	17	0
Boiler Plates, Iron—								
South Staffs		8	0	0	,,	8	15	0
Best Snedshill		9	0	0	,,	9	10	0

Angles 10s., Tees 20s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £8 15s to £9.
Ditto galvanised, £11 to £15 10s. per ton.

Galvanised Corrugated Sheet Iron—

	No. 18 to 20.	No. 22 to 24
6ft. to 8ft. long, inclusive gauge	Per ton. £13 0 0	Per ton. £13 10 0
Best ditto	13 0 0	14 0 0

Wire Nails (Points de Paris)—

3 to 7	8	9	10	11	12	13	14	15	B.W.G.
8/3	8/9	9/3	9/9	10/3	11/-	11/9	12/6	13/6	per cwt.

	Per ton.					Per ton.		
Cast Iron Columns	£7	10	0	to	£9	0	0	
Cast-Iron Stanchions	7	10	0	,,	9	0	0	
Rolled-Iron Fencing Wire	8	5	0	,,	8	10	0	
Rolled-Steel Fencing Wire	7	5	0	,,	7	10	0	
,, ,, Galvanised	8	15	0	,,	9	5	0	
Cast-Iron Sash Weights	5	0	0	,,	5	5	0	
Cut Floor Brads	9	15	0	,,	—			
Corrugated Iron, 24 gauge	16	0	0	,,	—			
Galvanised Wire Strand, 7 ply, 14 B.W.G.	14	5	0	,,	—			

B.B. Drawn Telegraph Wire, Galvanised—

0 to 8	9	10	11	12	B.W.G.
£10 10s.	£10 15s.	£11 0s.	£11 5s.	£11 15s.	per ton.

Cast-Iron Socket Pipes—							
3in. diameter	£6	2	6	to	£6	7	0
4in. to 6in.	6	0	0	,,	6	5	0
7in. to 24in. (all sizes)	5	7	6	,,	6	0	0

[Coated with composition, 5s. 0d. per ton extra, turned and bored joints, 5s. 0d. per ton extra.]

Pig Iron—	Per ton.		
Cold Blast, Lilleshall	110s. 0d.	to	117s. 6d.
Hot Blast, ditto	70s. 0d.	,,	75s. 0d.

Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—

Gas-Tubes	75 p.c.
Water-Tubes	72½ ,,
Steam-Tubes	67½ ,,
Galvanised Gas-Tubes	65 ,,
Galvanised Water-Tubes	62½ ,,
Galvanised Steam-Tubes	57½ ,,

OTHER METALS.

Spelter, Silesian	Per ton	£21	1	3	to	£21	3	9
Lead Water Pipe, Town		25	0	0	,,	—		
,, ,, ,, Country		25	15	0	,,	—		
Lead Barrel Pipe, Town		26	0	0	,,	—		
,, ,, ,, Country		26	15	0	,,	—		
Lead Pipe, Tinned inside, Town		27	0	0	,,	—		
,, ,, ,, ,, Country		27	15	0	,,	—		
Lead Pipe, Tinned inside and outside, Town		29	10	0	,,	—		
,, ,, ,, ,, Country		30	5	0	,,	—		
Composition Gas-Pipe, Town		28	0	0	,,	—		
,, ,, Country		28	15	0	,,	—		
Lead Soil-pipe (up to 4½in.) Town		28	0	0	,,	—		
,, ,, ,, Country		28	15	0	,,	—		
[Over 4½in. £1 per ton extra.]								
Lead Shot, in 28lb. bags		24	15	0	,,	—		
Copper Sheets, sheathing & rods		89	0	0	,,	89	10	0
Copper, British Cake and Ingot		78	0	0	,,	79	0	0
Tin, English Ingots		201	10	0	,,	202	0	0
Do., Bars		202	10	0	,,	203	0	0
Pig Lead, in 1cwt. pigs (Town)		22	0	0	,,	—		
Sheet Lead, Town		24	10	0	,,	—		
,, ,, Country		25	5	0	,,	—		
Genuine White Lead		30	15	0	,,	—		
Refined Red Lead		25	10	0	,,	—		
Sheet Zinc		29	0	0	,,	—		
Old Lead, against account		19	10	0	,,	—		
Tin	per cwt.	11	0	0	,,	—		
Cut nails (per cwt. basis, ordinary brand		0	11	6	,,	—		

TIMBER.

CONSTRUCTIONAL.

Yellow Pine Deals, Quebec, per standard:—								
1st quality		£38	0	0	to	£45	0	0
,, ,, ,, 2nd ,,		26	0	0	,,	32	0	0
,, ,, ,, 3rd ,,		16	0	0	,,	18	10	0
Spruce Deals: St. Johns		10	0	0	,,	11	10	0
,, ,, Miramichi		9	10	0	,,	10	10	0
,, Boards: Swag		11	0	0	,,	12	0	0
Red Deals: rchangel 1st quality		21	0	0	,,	24	0	0
,, ,, ,, 2nd ,,		16	0	0	,,	19	0	0
,, ,, ,, 3rd ,,		12	0	0	,,	14	0	0
,, ,, St. Petersburg—								
,, ,, ,, 1st quality		16	10	0	,,	18	0	0
,, ,, ,, 2nd ,,		14	10	0	,,	15	10	0
,, ,, Wyburg & Uleaborg		12	10	0	,,	15	0	0
,, Gefle, Gothenburg, and Stockholm		12	10	0	,,	17	0	0
White Deals: Crown		14	0	0	,,	15	10	0
,, ,, Seconds		11	10	0	,,	13	0	0
Flooring: White and Planed—								
1st and 2nd quality mixed		10	15	0	,,	11	15	0
1st, 2nd, & 3rd quality mixed		10	5	0	,,	11	0	0
Red Planed, 1st quality		14	10	0	,,	17	0	0
Pitch Pine: Prime Deals and Boards		18	0	0	,,	23	0	0
Lignum Vitæ	Per ton	7	0	0	,,	14	0	0
	Per cubic foot.							
Yellow Pine Logs (waney board)		0	5	0	,,	0	5	6
Pitch Pine Logs		0	2	0	,,	0	2	6
Birch: Quebec Logs		0	2	3	,,	0	2	9
Oak: Austrian Wainscot		0	7	0	,,	0	8	0
Mahogany: Gaboon		0	2	0	,,	0	2	3

FURNITURE AND HARDWOODS.

Teak: Burmese, per load, 50ft.		£20	0	0	to	£25	0	0
Teak: Java, per load, 50ft.		16	0	0	,,	21	0	0
	Per cubic foot.							
Oak Planks: U.S.A., imported		0	1	9	to	0	2	6
,, Boards ,, ,, Prm.		0	3	0	,,	0	3	6
,, ,, ,, ,, Mdm.		0	2	6	,,	0	2	9
Sequoia (Californian Redwood)		0	2	4	,,	0	3	6
Birch: Quebec logs		0	2	3	,,	0	2	9
,, ,, sawn planks		0	1	3	,,	0	2	0
Oak: Austrian Wainscot		0	7	0	,,	0	8	0
Walnut: Prime boards and planks		0	6	0	,,	0	6	6
Walnut: Mdm. ,, ,,		0	3	6	,,	0	4	6
Greenheart: Hewn logs		0	3	3	,,	0	4	0
Cedar: Cigar box		0	4	9	,,	0	5	6
Satin Walnut: Imp. sawn boards, prime		0	2	4	,,	0	2	9
Orham: Imp. sawn boards, prime		0	2	0	,,	0	2	3
Mahogany: St. Domingo, Cuba, and Honduras		0	6	0	,,	0	9	0
,, African, Assinee, &c.		0	5	0	,,	0	6	6
,, Lagos and Benin		0	4	6	,,	0	6	0
,, Sekondi and Cape Lopez		0	3	0	,,	0	4	0
,, Gaboon		0	2	0	,,	0	2	3
Satinwood: West Indian		0	10	0	,,	0	14	0
Rosewood	Per ton	8	0	0	,,	13	0	0
Lignum Vitæ	,,	7	0	0	,,	14	0	0

STONE.*

Red Mansfield, in blocks	per foot cube	£0	2	4
Darley Dale, ditto	,,	0	2	3
Red Corsehill, ditto	,,	0	2	2
Closeburn Red Freestone, ditto	,,	0	2	0
Ancaster, ditto	,,	0	1	10
Greenshill, ditto	,,	0	1	10
Chilmark, ditto (in truck at Nine Elms)	,,	0	1	10½
Hard York, ditto	,,	0	2	0
Ditto ditto 6in. sawn both sides, landings, random sizes	per foot sup.	0	2	8
Ditto ditto 3in. slab sawn two sides, random sizes	,,		1	3

* All F.O.R. London.

Bath Stone, delivered on road waggons, Paddington Depot	per foot cube	0	1	7½
Ditto, ditto, Nine Elms Depot	,,	0	1	9½
Beer Stone, delivered on rail at Seaton Station	,,	0	1	0
Ditto, delivered at Nine Elms Station	,,	0	1	6

Portland Stone, in random blocks of 20ft. average:—

	Brown Whit Bed.	White Base Bed
	Per foot cube.	
Delivered on road waggons at Paddington Depot, Nine Elms Depot, or Pimlico Wharf	£0 2 3	£0 2

SLATES.

	in.	in.	£	s.	d.	per 1,000 of
Blue Portmadoc	20	× 10	13	12	6	1,200 at r.stn.
,, ,,	16	× 8	6	12	6	,, ,,
Blue Bangor	20	× 10	13	2	6	,, ,,
,, ,,	20	× 12	13	17	6	,, ,,
First quality	20	× 10	13	0	0	,, ,,
,, ,,	20	× 12	13	15	0	,, ,,
,, ,,	16	× 8	7	5	0	,, ,,
Eureka unfading green	20	× 10	15	17	6	,, ,,
,, ,,	20	× 12	18	7	6	,, ,,
,, ,,	18	× 10	13	5	0	,, ,,
,, ,,	16	× 8	10	5	0	,, ,,
Permanent green	20	× 10	11	12	6	,, ,,
,, ,,	18	× 10	9	12	6	,, ,,
,, ,,	16	× 8	6	12	6	,, ,,

BRICKS.

(All prices net.)

First Hard Stocks	£1	15	0	per 1,000 alongside, in	
Second Hard Stocks	1	11	0	,, ,,	[river.
Mild Stocks	1	9	0	,, ,,	,,
Picked Stocks for Facings	3	5	0	,,	livered at rly. stn.
Flettons	1	10	0	,, ,,	,,
Pressed Wire Cuts	1	18	0	,, ,,	,,
Red Wire Cuts	1	14	0	,, ,,	,,
Best Fareham Red	3	12	0	,,	,,
Best Red Pressed Ruabon Facing	5	0	0	,, ,,	,,
Best Blue Pressed Staffordshire	3	15	0	,, ,,	,,
Ditto Bullnose	4	0	0	,, ,,	,,
Best Stourbridge Firebricks	3	14	0	,, ,,	,,
2¾in. Best Red Accrington Plastic Facing Bricks	4	10	6	,, Net, delivered in full truck loads in London.	

* Accrington Best Red Plastic Facing Bricks per 1,000	£2 10 0
3½" ditto Second Best Plastic ditto	2 2 6
Ditto Ordinary Second Bricks	1 11 3
Ditto Plastic Engineering Bricks	1 17 6
Sewer Arch Brick not more than 3½" in thickest part	2 0 0
3½" Chimney Bricks fit for outside work	2 6 0
3½" ditto ditto through and through	2 0 0
3½" Beaded, Ovolo and Bevel Jambs; Octagons; 2¼" and ½" radius Bullnoses; Stock patterns	3 7 6
Accrington Air Bricks, 9" × 3 course deep, each	0 0 6
Ditto ditto 9" × 1 course ,,	0 0 3

Accrington Camber Arches:—

3 course deep, 4½" soffit, per foot opening						0	1 3
4	ditto	4½"	ditto	ditto	ditto	0	1 8
5	ditto	4½"	ditto	ditto	ditto	0	2 1
6	ditto	4½"	ditto	ditto	ditto	0	2 6
3	ditto	9"	ditto	ditto	ditto	0	2 1
4	ditto	9"	ditto	ditto	ditto	0	2 11
5	ditto	9"	ditto	ditto	ditto	0	3 9
6	ditto	9"	ditto	ditto	ditto	0	4 6

Net free on rail or free on boat at works.

GLAZED BRICKS.

HARD GLAZES, (PER 1,000.)

White, Ivory, and Salt Glazed. Best.	Seconds.	Buff, Cream, & Bronze.	Other Colours.	Second Colours.
Stretchers—				
£13 7 6	£10 17 6	£13 17 6	£17 17 6	£13 7 6
Headers—				
11 17 6	10 7 6	13 7 6	17 7 6	11 17 6
Quoins, Bullnose, and 4½in. Flats—				
15 17 6	14 17 6	17 17 6	21 7 6	15 17 6
Double Stretchers—				
17 17 6	16 7 6	20 17 6	24 7 6	17 17 6
Double Headers—				
14 17 6	13 7 6	17 17 6	21 7 6	14 17 6
One side and two ends, square—				
18 17 6	17 7 6	21 17 6	26 7 6	18 17 6
Two sides and one end, square—				
19 17 6	18 7 6	22 17 6	26 17 6	19 17 6
Splays and Squints—				
17 7 6	15 17 6	21 17 6	24 17 6	17 7 6

Plinth and Hollow Bricks. Stretchers and Headers—5d. each 4d. each 6d. each 6d. each 5d. each

Double Bullnose, Round Ends, Bullnose Stops—5d. each 4d. each 6d. each 6d. each 5d. each

Rounded Internal Angles—4d. each 3d. each 5d. each 5d. each 4d. each

MOULDED BRICKS.

Stretchers and Headers—8d. each 8d. each 8d. each 8d. each 8d. each

Internal and External Angles—1/2 each 1/2 each 1/2 each 1/2 each 1/2 each

Cill Bullnose, Stretchers and Headers—5d. each 4d. each 6d. each 6d. each 5d. each

Majolica or Soft Glazed Stretchers and Headers ..... Per 1,000 £22 17 6

" Quoins and Bullnose... 27 17 6

Compass bricks, circular and arch bricks of single radius £6 per 1,000 over above list for their respective kinds and colours } Not exceeding 9in. by 4½in.

Camber arch bricks, any kind or colour, 1s. 2d. each } Not exceeding 9in. by 2½in.

Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.

* These prices are carriage paid in full truck loads to London Stations.

	s.	d.	
Thames Sand	7	6	per yard, delivered
Pit Sand	7	0	" "
Thames Ballast	6	6	" "

	s.	d.		Per ton,
Best Portland Cement	36	0	to 41	0 delivered
Ground Blue Lias Lime	21	0	per ton delivered.	

Exclusive of charge for sacks.

	s.	d.		s.	d.	Per yard,
Grey Stone Lime	13	6	to	14	0	delivered

Stourbridge Fireclay in sacks 27s. 0d. per ton at railway station.

TILES.

	s.	d.		Dlvrd. at
Plain red roofing tiles	42	0	per 1000	ry. stn.
Hip and Valley tiles	3	7	per doz.	" "
Broseley tiles	50	0	per 1000	" "
Ornamental tiles	52	6	"	" "
Hip and Valley tiles	4	0	per doz.	" "
Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000	" "
Ornamental do.	60	0	"	" "
Hip tiles	4	0	per doz.	" "
Valley tiles	3	0	"	" "
Selected "Perfecta" roofing tiles :—Plain tiles (Peake's)	46	0	per 1000	" "
Ornamental do.	48	6	"	" "
Hip tiles	3	10½	per doz.	" "
Valley tiles	3	4½	"	" "
"Rosemary" brand plain tiles	48	0	per 1000	" "
Ornamental tiles	50	0	"	" "
Hip tiles	4	0	per doz.	" "
Valley tiles	3	8	"	" "
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000	" "
Hand-made sand-faced	45	0	"	" "
Hip tiles	4	0	per doz.	" "
Valley tiles	3	6	"	" "
Hartshill" brand plain tiles, sand-faced	50	0	per 1000	" "
Pressed	47	6	"	" "
Ornamental do.	50	0	"	" "
Hip tiles	4	0	per doz.	" "
alley tiles	3	6		" "

OILS.

Rapeseed, English pale,	per tun	£28 15 0	to	£29 5 0	
Do., brown	" "	26 15 0	"	27 5 0	
Cottonseed, refined	" "	29 0 0	"	30 0 0	
Olive, Spanish	" "	39 10 0	"	40 0 0	
Seal, pale	" "	21 0 0	"	21 10 0	
Cocoanut, Cochin	" "	46 0 0	"	46 10 0	
Do., Ceylon	" "	42 10 0	"	43 0 0	
Do., Mauritius	" "	42 10 0	"	43 0 0	
Palm, Lagos	" "	32 5 0	"	33 5 0	
Do. Nut Kernel	" "	35 0 0	"	35 10 0	
Oleine	" "	17 5 0	"	19 5 0	
Sperm	" "	30 0 0	"	31 0 0	
Lubricating U.S.	per gal,	0 7 0	"	0 8 0	
Petroleum refined	" "	0 0 6½	"	0 0 6½	
Tar, Stockholm	per barrel	1 6 0	"	1 10 0	
Do., Archangel	" "	0 19 6	"	1 0 0	
Linseed Oil	per gal.	0 2 4½	"	—	
Baltic Oil	" "	0 2 8	"	—	
Turpentine	" "	0 2 7	"	—	
Putty (Genuine Linseed Oil)	per cwt.	0 9 0	"	—	
Pure Linseed Oil "Stority" Brand	"	0 10 0	"	—	

GLASS (IN CRATES).

English Sheet Glass :	15oz.	21oz.	26oz.	32oz.
Fourths	2d.	3d.	3½d.	4½d.
Thirds	2½d.	3½d.	4½d.	5½d.
Fluted Sheet	2½d.	3½d.	6½d.	7d.
Hartley's English Rolled Plate :	¼in.	3/16in.	¼in.	
	2½d.	2½d.	3d.	
Figured Rolled and Repoussine	White. 3½d.	Tinted. 5d.		

VARNISHES, &c.

	Per gallon.
Fine Pale Oak Varnish	£0 8 0
Pale Copal Oak	0 10 0
Superfine Pale Elastic Oak	0 13 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of churches	0 14 0
Fine Elastic Carriage	0 13 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flatting Varnish	0 18 9
White Copal Enamel	1 4 0
Extra Pale Paper	0 13 9
Best Japan Gold Size	0 10 9
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 0

TRADE NOTES.

Under the direction of Mr J. L. Peacock engineer, Newtownards, the "Boyle" system of ventilation (naturally embracing Boyle's latest patent "air-pump" ventilators has been applied to the Board Room, Market House, Newtownards.

The most valuable trophy offered in motoring competition has just been won by a Talbot car. This is the Dunlop 200-guinea challenge cup, the principal prize in the Rosslare Speed Trials promoted by the Irish Automobile Club on Sept. 5 and 6. The competing Talbots had a remarkable run of success, for the 12H.P., 15H.P., and 25H.P. cars won each of the three open events they contested, followed by the unusual spectacle of the winners' event for the 200-guinea cup being contested by three cars of one make. The 15H.P. Talbot proved the winner on handicap, this being the third occasion on which Talbot cars have won this coveted trophy.

PILKINGTON & CO.

(ESTABLISHED 1838.)

DEPTFORD WHARF,

190 & 192, CREEK ROAD, DEPTFORD, S.E.

Registered Trade Mark,

POLONCEAU ASPHALTE

Patent Asphalte and Felt Roofing

ACID-RESISTING ASPHALTE.

WHITE SILICA PAVING.

Seyssel Asphalte direct from the Mines.

TELEPHONE NOS.: NEW CROSS 1102 (2 Lines).

FOR

Olivers'

Seasoned

Hardwoods,

APPLY TO—

WM. OLIVER & SONS, Ltd.,

120, Bunhill Row, London, E.C.

TENDERS.

*** Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

CARDIFF.—For the erection of the shell of the southern block of the National Museum for Wales :—

Pittard, H., and Son, Longport	£73,500 0 0
Minter, J. G., Putney	70,758 0 0
Turner, E., and Sons, Ltd., Cardiff	66,649 0 0
Wilcock, H., and Co., Wolverhampton (accepted)	65,895 0 0

CREWE.—For constructing four steel girder bridges required at the sewage disposal works, for the town council —

Hayes, P., and Sons (accepted) ... £195 0 0
(Highest tender received, £208.)

EPSOM.—For the erection of labour sheds and alterations to buildings at their workhouse at Epsom, for the guardians. Mr. A. C. Wilhams, 53, Doughty-street, London, W.C., architect :—

Peddle, E.	£1,053 0 0
Crosby and Co.	993 0 0
Fletcher, F. W.	990 0 0
Smith, W., and Sons	970 10 0
Burberry and Wooldridge	950 0 0
Cropley Bros.	949 0 0
Death, J.	947 0 0
Norrington, C. J.	943 12 0
Taylor, W.	926 0 0
Hause, H.	914 0 0
Pasterfield and English	896 0 0
Foster, F. and G.	881 0 0
Impson, W. H.	878 0 0
Roll and Taylor	877 0 0
Lown, L., and Co.	865 0 0

ERITH.—For the execution of certain repairs and redecorations at the technical institute, Erith, for the Kent Education Committee :—

Chandler, H. E., Belvedere	£249 0 0
Buckley, T. C., Erith	245 10 0
McLean, A. F., Erith	230 16 0

(The committee will not proceed with the work this year.)

FINEDON.—For replacing the pressure gas plant at the pumping station with a suction gas plant, for the urban district council :—

Central Machinery Co. (accepted) £200 0 0

FLEET, LINCOLNSHIRE.—For improvements at Woodlane council school, Fleet :—

Bean, A. (accepted).

FLINT.—For the erection of a bakehouse, with storerooms and stables, for Flint and Oakenholt Co-operative Society, Ltd. Mr. F. A. Roberts, M.S.A., Earl Chambers, Mold, architect :—

Huxley, H. G.	£1,741 0 0
Wright, G. H.	1,731 0 0
Jones, A.	1,700 0 0
Rogers, M. S., and Sons	1,682 0 0
Lloyd, A. B., Flint (accepted)	1,640 0 0

FOLESHILL.—For alterations at the workhouse, for the guardians —

Gibson, Bedworth (accepted) ... £767 0 0

FULBOURN.—For the outside painting of the Fulbourn Asylum, Cambridgeshire. Mr. A. Paul McAlister, F.R.I.B.A., 20, St. Andrew's-street, Cambridge, architect —

Richards, J. J., Brixton, S.W.	£1,255 17 1
Underwood Bros.	933 16 10
Northfield, E. C.	834 0 10
Coulson and Lofts	827 0 0
Loach, F. R., and Sons	822 13 0
Negus, A., and Sons	775 0 0
Jones, A. R., and Bailey	763 13 8
Scott, C., Cherry hinton	648 16 0
Bennett and Blowers (accepted)	593 14 4

Rest of Cambridge.

FRAMLINGHAM.—For erection of a storm-water tank at sewage works —

James and Lung	£21 15 0
Bennett, F., Ipswich (accepted)	165 0 0

GILLINGHAM.—For the erection of new buildings, for the New Brompton Co-operative Society, Ltd. —

Watts, C., and Co., Church-end, Finchley	£9,168 0 0
Monk, A., and Co., Regent-st., W.	8,329 0 0
Gates, G., and Sons, Rochester	8,173 0 0
Seager, L., Sittingbourne	7,979 0 0
West Bros., Rochester	7,937 0 0
Wallis, G. E., and Sons, Ltd., Maidstone	7,933 0 0
Hanson, A. and B., Southall	7,893 0 0
Skinner, C. E., Chatham	7,829 0 0
Phillips, H. E., Gillingham	7,817 0 0
Thomas and Edge, Woolwich	7,731 0 0
Ellingham, J. W., Spital-street, Dartford (accepted)	7,495 0 0

GLANAMMAN.—For water extensions at Glanamman and Garnant, for the Cwmaman Urban District Council :—

Hanney, E. I., Swansea ... £221 12 0
(Accepted.)

HALIFAX.—For the supply of 200 tons of steel girder tram-rails and seven tons of steel fishplates, for the tramways committee :—

Bolckow, Vaughan, and Co., Ltd., £7 per ton (accepted).

HALTON.—For providing and laying 470 yards of surface-water drains at Halton, for the Hunslet Rural District Council :—

Puffett, F. C.	£215 5 0
Briggs, G. L., and Son	142 15 0
Pullar, H. C., Halifax	135 3 3
Schofield, A.	133 13 0
Emery, G., Birmingham	130 15 6
Rex, A.	130 6 4
Wilson, A. (accepted)	113 4 7

(Rest of Leeds.)

HAMBLETON.—For erection of a vicarage, for the vicarage committee :—

Preston (accepted) ... £1,351 0 0

HATFIELD.—For construction of a surface-water drain in Mortuary-lane, for the rural district council :—

Dunham, F., Hatfield	£235 7 0
Johnson, S., Son, and Marsh, Strand, W.C.	125 0 0
Naden, J., Hatfield	97 0 0
Williams and Son, Potter's Bar*	92 0 0

* Accepted.

LONDON.—For rebuilding Nos. 10, 11, and 12, Leicester-street, and Nos. 3a and 4, Sidney-place, Leicester-square, W.C., for Messrs. Stagg and Mantle, Ltd. Mr. Ernest H. Abbott, 6, Warwick-court, Gray's Inn, W.C., architect. Quantities by Mr. C. W. Brooks' Vernon House, Bloomsbury, W.C. :—

Bywaters and Sons, Ltd.	£19,440 0 0
Holland and Hannen, and Cubitts, Ltd.	19,222 0 0
Higgs and Hill, Ltd.	18,962 0 0
Carmichael, J.	18,732 0 0
Dove Bros., Ltd.	18,650 0 0
Hall, Beddall, and Co.	18,530 0 0

NEWCASTLE-ON-TYNE.—For the construction of a single-story shed at No. 20 Block, Quayside, for the city council :—

Darlington Construction Co., Ltd. £1,796 0 0
(Accepted.)

SHOREHAM-BY-SEA.—For kerbing and making-up the surfaces of the paths of the churchyard of St. Mary's church, Shoreham-by-Sea :—

Gates, W. A., and Sons	£163 0 0
Cheesman, C. G.	138 0 0
Wood, G., London, S.W.	133 18 0
Curd, E. H.	103 13 0
Willet, W. (accepted)	99 15 0

(Rest of Shoreham-by-Sea.)

Palmer's Green.—For the erection of a Congregational church and schools. Messrs. Baines and Sons, 5, Clements-inn, Strand, London, W.C., architects —

Williams, H. J., Ltd.	£8,897	0	0
Dove Bros., Ltd.	8,825	0	0
Mattock Bros.	8,749	0	0
Holliday and Greenwood	8,705	0	0
Higgs, F. and H. F.	8,689	0	0
Akers and Co.	8,634	0	0
Mattocks and Parsons	8,593	0	0
Fairhead, A., and Son	8,564	0	0
Battley, Sons and Holness ...	8,489	0	0
Carmichael, J.	8,470	0	0
Roome, E., and Co.	8,461	0	0
Goddard and Sons	8,435	0	0
Hammond, W.	8,433	0	0
Smith and Sons, Ltd.	8,310	0	0
Dorey and Co.*	8,247	0	0

* Accepted with modifications.

Sleaford.—For making alterations and additions to the Corn Exchange —

Banks, J. J., and Son, Sleaford (accepted).

Spondon, Notts.—For carrying out works of sewerage in the village of Spondon, for the Shardlow Rural District Council : —

Barry, H. H., Radcliffe-on-Trent (Accepted.)	£7,550	0	0

Torquay.—For the erection of a secondary school for 342 pupils, for the Devon Education Committee. Mr. Percy Morris, 1, Richmond-road, Exeter, county education architect. Quantities by Mr. S. W. Haughton, 41, George-street, Plymouth : —

Vanstone, T., and Sons	£14,300	2	0
Wilkins, R., and Sons, Bristol ...	13,842	19	1
Debnam, A. R., Plymouth... ...	13,784	19	0
Watson, W., and Son	13,678	3	3
Williams, R. C., Holbeton... ...	13,235	17	1
Pittard, H., and Son, Langport ...	13,125	0	0
Lea, E. C., Exeter	13,090	1	0
Narracott, R. E.	13,025	3	9
Lapthorn and Co., Plymouth ...	12,963	0	0
Turpin, G. B., Plymouth	12,566	0	0
Westcott, Austin, and White, Exeter	12,541	15	7
Pratt, N., & Sons, Clyst St. Mary	12,515	18	4
Povey, E. P., and Sons	12,367	0	6
Pollard, G., and Co., Ltd., Taunton	12,310	1	11
Badcock, F. J., Ashburton... ...	12,070	13	3
Small, F. and E., Taunton	11,967	18	8
Jackman, H. C.	11,899	0	0
Wakeham Bros., Plymouth* ...	11,674	15	4

* Accepted. Rest of Torquay.

Walthamstow. — For alterations and additions to Forest-road Infants' school, for the Walthamstow Education Committee. Mr. H. Prosser, M.S.A., architect to the committee. Quantities by Mr. G. W. Francis : —

Knight and Son, Tottenham ...	£1,112	0	0
Thomas, J., Enfield	1,037	0	0
Russell, E. A., Leytonstone ...	999	0	0
Hammond and Son, Romford ...	910	0	0
Crisp, A. G., Walthamstow ...	895	10	0
Horswill, H. C., Forest Gate ...	890	0	0
Brand, Pettit, and Co., South Tottenham	830	0	0
Sands, J., Walthamstow	748	0	0
Coxhead, F. J., Leytonstone ...	737	0	0
Fenn, A. M., Woolwich	737	0	0
Maddison, W. J., Canning Town ..	736	0	0
Dean, J. and J., Walthamstow* ...	730	0	0

* Accepted.

Winchester.—For various works, for the city council. Accepted tenders : —

Extension of guildhall premises : —

Hunt, J.	£3,360	0	0

Lodge offices and conveniences at the new cemetery : —

Hunt, J.	975	0	0

Parquet dancing-floor for the guildhall : —

Savage, E. W.	179	18	0

TO CORRESPONDENTS.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

Telephone Gerrard 1291.

Telegrams : "Timeserver, Estrand, London."

ADVERTISEMENT CHARGES.

The charge for Competition and Contract Advertisements, Public Companies, and all official advertisements is 1s. per line of Eight Words, the first line counting as two, the minimum charge being 5s. for four lines.

The charge for Auctions, Land Sales, and Miscellaneous and Trade Advertisements (except Situation Advertisements) is 6d. per line of Eight Words (the first line counting as two), the minimum charge being 4s. 6d. for 50 words. Special terms for series of more than six insertions can be ascertained on application to the Publisher.

Situations Vacant and Partnerships.

The charge for advertisements for "Situations Vacant" and "Partnerships" is One Shilling for Twenty-four Words, and Sixpence for every eight words after. *All Situation Advertisements must be prepaid.*

Situations Wanted.

Advertisements not exceeding Thirty Words, inclusive of name and address, are inserted under the heading "Situations Wanted," *free of charge.*

Rates for Trade Advertisements on front page, and special and other positions, can be obtained on application to the Publisher.

Advertisements for the current week must reach the office not later than 3 p.m. on Thursday. Front-page advertisements and alterations or stop orders for serial advertisements must reach the office by Tuesday Morning to secure attention.

*** Replies to advertisements can be received at the Office, Effingham House, 1, Arundel-street, Strand, W.C., *free of charge.* If to be forwarded under cover to advertiser, an extra charge of Sixpence is made. (See Notice at head of "Situations.")

Received N and Z. L and N. W. Rly. Co. J. C. A. Co., Ltd. W. J. and Co.—W. Ltd. L. B. H. C. B. W. F. S. and Co., Ltd. C. L. and Son. M. E. C. H. M. B. Bros. R. F. W. and Son. H. and G. J. W. and Son. D. and Co., Ltd. S. Bros., Ltd. G. R. and Son. H. and B. E., Ltd. —C. N.—L. and Co.—S. E. C.—R. and Son.—J. G. L. —R. S. Co., Ltd.—G. V.—R. A.—C. and Co., Ltd.—T. B. B., Ltd.

F. Yes.

D. S. Thanks, no.

Q. R. Sorry, no room just now.

Practical. You might as well ask us to eat your dinner or get your hair cut for you.

Ixy. We dare not. Think of the possible consequences if architects caught your complaint, and took to writing their specifications in verse!

A. J. M.—The articles on "Ornamental Brickwork" appeared in our issues of April 12, 19, 26, May 3, 10, 17, 31, June 7, 14, 28, July 5, 12, 19, 26, 1912. Fourteen numbers in all; price 1s. 8d., or post free 2s. 3d. The series has not been issued in book form.

LIST OF COMPETITIONS OPEN.

Sept. 22	Working Class Houses, Cleator Moor	£5 5s. (merged in commission)	H. Rothery, Clerk, Cleator Moor.
Oct. 6	Front for Cigar Shop, Piccadilly. Henry Tanner, F.R.I.B.A., 12, Regent-street, W., Assessor)	£50	Martins, Ltd., 25, Cheapside, E.C.
,, 31	Houses and Planning, York	£100, £50, £25	F. W. Spurr, City Engineer, Guildhall, York.
Nov. 1	Royal Palace, Sofia, Bulgaria		Section d'Architecture au Ministere des Travaux Publics, Sofia.
,, 1	Law Courts, Sofia, Bulgaria		Section d'Architecture au Ministere des Travaux Publics, Sofia.
,, 18	Destructor, Schaerbeek-lez-Bruxelles		Service de l'Ingenieur, 30, Rue de la Ruche, Brussels.
,, 29	Band Pavilion, West Cliff, Folkestone (limit of cost £20,000). (Edwin T. Hall, F.R.I.B.A., 34, Bedford-square, W.C., Assessor)		A. F. Kidson, Town Clerk, Folkestone.
Dec. 29	New Offices for Board of Trade, &c., Whitehall Gardens, S.W. [R. Blomfield, M.A. (Oxon), A.R.A., P.R.I.B.A. J. Belcher, R.A., and Sir Aston Webb, C.V.O., C.B., R.A., Assessors] Sketch Designs, ten will be Selected,		
1914.	with £300 Honorarium each		The Secretary, H.M. Office of Works, Storey's Gate, S.W.
Jan. 2	Manchester Royal Exchange, Additional New Buildings and Alterations. Open to all architects in U.K. Not more than 12 architects of repute have been specially invited; each of whom will receive one hundred guineas. The three selected architects will receive one hundred guineas each. Author of design placed first will be appointed. (J. S. Gibson, F.R.I.B.A., Assessor)		Rich. J. Allen, Master, Royal Exchange, Manchester.
,, 2	Departmental and Courts Buildings, Ottawa (T. E. Collcutt, J. H. G. Russell, and J. O. Marchand, Assessors). Double Competition, five unsuccessful competitors in second to receive 3,000dols. each		R. C. Desrochers, Department of Public Works, Ottawa, Ont.

LIST OF TENDERS OPEN.

BUILDINGS.

Sept. 12	Ruling Machine Works, Scotgate-road, Honley	J. Shaw and Sons	P. N. Brown, Architect, Hawthorn Bank, Holmfirth.
,, 12	Boys' Industrial School, Laundry at, Sunderland	Committee	G. W. Bain, Hon. Sec., 46, John-street, Sunderland.
,, 13	Two Houses, Wetheral	R. Thompson	J. H. Martindale, F.R.I.B.A., Castle-street, Carlisle.
,, 13	Eight Cottages, Knockroe and Templemartin	Bandon Rural District Council	A. Haynes, Clerk, Workhouse, Bandon.
,, 13	Billiard Saloon and Shops, Commercial-st., Nelson, Glam.		W. T. Pugh, Archt., Nelson.
,, 13	Roughcasting Three Houses, Fosdyke	Holland County Council	E. Christie, County Land Agent, Market-place, Boston, Lincs.
,, 13	Hospital, Gildredge Underhill	Eastbourne Sanitary Committee	W. Chapman Field, Boro' Archt., Town Hall, Eastbourne.
,, 15	Working-Class Dwellings (22), Watford	Urban District Council	D. Waterhouse, Eng., Council Offices, Watford.
,, 15	Workmen's Cottages (12), Station-road, Petworth	Rural District Council	E. H. Staffurth, Clerk, Avenings, Petworth.
,, 15	Liberal Club, Newton Abbot	Building Committee	J. C. Beare, A.R.I.B.A., 42, Devon-square, Newton Abbot.
,, 15	School (515 places), Liverpool-road, Irlam	Lancashire Education Committee	H. Littler, Archt., 16, Ribblesdale-place, Preston.
,, 15	Ten Houses, Flockton, Yorks	Urban District Council	W. Dickinson, Clerk, 46, Westgate, Wakefield.
,, 15	House, Ashbrow-road, Huddersfield		J. H. Hall & Sons, Archts., Exchange, Market-st., Huddersfield.
,, 15	Council School (500 places), Sirhowy, Mon.	Education Committee	J. Bain, F.R.I.B.A., County Council Offices, Newport, Mon.
,, 15	Drill Hall, Looe, Cornwall	Torr. Force Assoc.	O. R. Caldwell, Archt., Penzance.
,, 15	Workhouse, Additions to Boiler House, Croydon	Guardians	H. Berney, Archt., 104, George-street, Croydon.
,, 16	School (1,200 places), Old Shildon	Durham County Council	A. J. Dawson, Clerk, Shire Hall, Durham.
,, 16	Kitchen Accommodation at Infirmary, Additions to	Lambeth Guardians	J. L. Goldspink, Clerk, Brook-street, Kennington-road, S.E.
,, 16	Memorial Library, Renovation of, Clydach Vale	Library Committee	R. S. Griffiths, M.S.A., Tonypandy.
,, 16	Two Galvanised Iron Sheds, Douglas, I. of M.	Tramways Committee	The Tramway Offices, Strathallan Crescent, Douglas, I. of M.
,, 16	School, Alterations to, Middlestone Moor	Durham County Council	A. J. Dawson, Clerk, Shire Hall, Durham.
,, 16	Rebuilding Station, Penshaw	North-Eastern Railway Co.	W. Bell, Archt., Westgate-road, Newcastle-on-Tyne.
,, 16	Covered Way, Talywain	Abersychan Co-op. Soc., Ltd.	The Society's Office, High-street, Abersychan.
,, 16	South Norwood Baths, Additions to, Croydon	Town Council	The Borough Engineer, Town Hall, Croydon.
,, 16	Engine Sheds, Dairycoates, Hull	N. E. Railway Directors	W. Bell, Archt., Paragon Station, Hull.
,, 16	School, Alteration to, Newbottle	Durham County Council	A. J. Dawson, Clerk, Shire Hall, Durham.

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House at Craig-y-Parc, Pentyrch, near Cardiff. The entrance and garden fronts, with plan. Mr. C. E. Mallows, F.R.I.B.A., Architect.

West Front and Steeple, Church of St. Martin-in-the-Fields, S.W. James Gibbs, Architect. Royal Academy Silver Medal Drawings by Mr. A. Bryett.

Country Residential Club, Weybridge, Surrey. View of entrance front and block plan. Messrs. Geoffry Lucas, F.R.I.B.A., and Arthur Lodge, A.R.I.B.A., Architects.

New Church, Finchley, Middlesex. Interior view and plan. Messrs. Geoffry Lucas, F.R.I.B.A., and Arthur Lodge, A.R.I.B.A., in conjunction with Mr. John Page, Architects.

Central Fire Station, Hendon, N.W. View and plans. Mr. Herbert A. Welch, A.R.I.B.A., Architect.

City of Cardiff Technical Institute. Selected design, view and plans. Messrs. Ivor Jones, A.R.I.B.A., and Percy Thomas, Architects.

Stables at Newchapel, Surrey. Mr. Charles W. Bowles, Architect.

THE PROTECTION OF CONCRETE SURFACES.

Few queries reach us oftener than those embodying requests for some effectual means of rendering concrete uniformly impermeable to water, or for suggestions as to making it amenable to decorative treatment. No replies, so far, can be considered entirely satisfactory. We have from time to time given hints derived from our own experience, and many readers have obliged with theirs; but still the requests come. Undoubtedly, in many cases, the fault is due to the want of care in preparation and workmanship, whether as regards solid or reinforced work. Probably the same may be said with regard to the kindred complaints of annoying efflorescence, and the want of uniformity in colour resulting from the use of different materials.

As regards impermeability, attempts, so far, to ensure it have ranged themselves under four heads. First we have the various waterproofing compounds in liquid or powder, which are supplied to mix with the concrete as it is prepared. These are often helps; but it must be confessed some of them, at any rate, are oftener failures. There is, first of all, the difficulty of ensuring proper and regular distribution throughout the concrete. If that is not secured—and it is not always the fault of the workmen that it cannot be—the use of such preservatives is simply a useless addition to the cost of the work. Some, again, even when, as far as can be made certain, proper distribution is effected, do not render the concrete entirely impervious to moisture. Others have been found without question to weaken the tensile strength of the concrete. Few improve the appearance of the work. With most, if not all, the protective effect deteriorates with age—sometimes inexplicably in varying degree. It is in this connection that one learns to distrust specimen blocks and the like submitted by manufacturers, which have, to all appearances, stood the test of time. Not once or twice we have found no such deterioration in one face of the work, after the lapse of years, or in parts thereof, while elsewhere the presence of water was annoyingly patent.

Secondly, we have the treatments advised preparatory to the use of linseed-oil paints. These are in no degree more satisfactory. They are comparatively little used here; but seem to be more in vogue in America and Canada, and we have been interested in the remarks of Mr. G. D. White, a writer in the Canadian *Contract Record*, who has evidently had much experience. Dealing with three of these treatments—viz., the use of hydrochloric or muriatic acid wash, the application of a wash consisting of a solution of zinc sulphate and water, and of another wash made up of ammonium carbonate and water—he confesses to their inefficiency; carefully recording his disclaimer of any intention to blame the master-painter or chemist who recommends their use. As he truly remarks, the painter or chemist advising it relies thereon simply in the absence of anything he has found better as a means which has in some measure helped him. As Mr. White adds, from a chemical standpoint, muriatic acid, no matter in what strength, nor what the character of the concrete, is not only less than useless as a remedy, but detrimental in its action. Master-painters who have endeavoured to put it in practice have discovered to their sorrow a confirmation or a demonstration of a chemical theory. In the manufacture of chemicals and chemical colours, we can standardise our solutions by the use of molecular formulæ, and thus produce the product sought without a waste of any single ingredient, except, perhaps, water. Unfortunately, in preparing concrete surfaces to receive paint, we have no means of determining what strength of solution should be employed. Were such a determination possible, we should have to make it for every different piece of concrete, and in cases of blocks for every block, because we could not be sure of uniformity. Even with the required strength of solution, we still lack a method of application that will ensure the proper neutralisation, and so uniformity of results is uncertain. Zinc sulphate and ammonia carbonate as applied to concrete, unless fully satisfied by the presence of calcium hydroxide, are still soluble in water, and thus offer difficulties of a serious nature. The neutralisation of calcium hydrate and calcium oxide appearing on the surface of concrete does not always mean that the surface will remain neutral. Moisture finding its way from the inner portions of the block or wall carries with it alkali—the foe to linseed-oil paints. The treatment with zinc sulphate or ammonium carbonate, even though successful, does not offer a solution to the problem, because a linseed-oil paint is unsuited for either exterior or interior painting of concrete. The gloss robs the surface of the appearance of stone or masonry. Linseed oil has water-absorbing, and lacks water-resisting, properties. It cannot be applied over a damp or wet surface, which means that following a rainstorm or rainy season a painter must wait weeks and perhaps months before he can commence work on or complete a contract already begun. A wash of zinc sulphate or ammonium carbonate has been found a help in some instances, but the lack of uniformity in results, and the low degree as well as non-permanency of improvement, have demonstrated its inefficiency to cope with the important problem.

Of the colourless liquid coatings many favour, some may be of some value or service in retarding moisture, absorption, and efflorescence, but they are all alike, and emphasise any defects in, or difference in, colour of concrete construction. They impart to concrete a soggy, water-soaked appearance. They do not render impermeable to moisture for any length of time; and they are not decorative.

We have ourselves more than once said that the concrete-builder needs a special paint for the coating of concrete surfaces. Discussing the matter with paint-makers, we have seldom got farther than a more or less exact statement of the requirements of such a paint, the reply to which has usually been that, like the perfect man, it is not likely to be found in this world. It should certainly be a durable protection, resisting disintegration of concrete by the elements. A preventive of dampness through resistance to water and moisture. A paint that can be applied directly to the concrete surface without any previous treatment. It must be economical. After weathering, it must offer a good surface for repainting. It must be adapted to receiving and holding a plaster coat. It must be so constituted that it will be pleasing to the eye. Its consistency and nature should be such that it will spread easily, work well under the brush, penetrate the voids, fill and cover hair cracks, and act as a bond of connection between the concrete and succeeding coats. Not only must it penetrate and fill up the voids, but it should, in a measure, level up the rough portions of the surface. It must be suited to painting over damp and wet surfaces, and dry even when surrounded with moisture. When dry it must adhere to the surface, be sufficiently elastic to conform to changes in temperature, and remain hard in the presence of moisture or water.

We agree with Mr. White that, as in paints for wood or iron, the vehicle of a paint for concrete is a very important factor. It should be difficult of saponification, and of low saponification number. Mr. White is convinced that some kind of varnish product, peculiarly adapted to the purpose, is required. The pigment, as in linseed oil paint, has its function to perform. In opposition to some we think this pigment should not be cement for reasons that are self-evident and self-apparent. It must be, for the first coat, at least alkali proof. Not only must it

decorate, but it must protect the vehicle, and, in conjunction with the vehicle, the surface corted.

Mr. White offers no suggestion as to the composition of such a paint, and our own experience in paint preparation and the chemistry thereof has been too limited to enable us to attempt it. Most certainly paint consisting of both pigment and vehicle working in unison, with the minimum of opposing forces, easy of application, serviceable under exposure, resisting water and moisture, and economical to the consumer, would be a boon to the concrete builder, and a remunerative business for the paint-maker fortunate enough to compass his requirements.

ENGINEERS' VISIT TO MESSRS. WAYGOOD'S WORKS.

The members of the Junior Institution of Engineers spent an instructive and very interesting forenoon on Saturday in a visit to the works of Messrs. R. Waygood and Co., Ltd., the well-known lift-makers, in Falmouth road, Great Dover street, Southwark. The party, who included Mr. Percy L. Young, past vice-president, and Mr. Swales, secretary, were fortunate in having as their guide one of the directors of the company, Mr. H. Cecil Walker, chief electrical engineer to the company and son of the managing director, who conducted them on a tour embracing every section of the works, and courteously replied to the innumerable questions raised as to the details of operations.

The business, which now occupies premises in Falmouth-road having a cubic capacity of one and three-quarter million cubic feet, besides a foundry at Coventry, and employs over a thousand hands, was founded in 1833 by the late Mr. Richard Waygood, who began in his native village of Beaminster as a maker of hot-water apparatus and stoves, and having built up a good connection, transferred it to London in 1840. Here he was joined by Mr. J. M. Day, his foreman in Dorsetshire, and by his nephew, Mr. W. R. Green. In 1863 the firm's premises were acquired by the London, Chatham, and Dover Railway Co., and a fresh factory was built on a small piece of ground in Roberts-place, Falmouth-road. Two years later, Mr. H. C. Walker, now the chairman and managing director, entered the service of the firm, and devoted himself specially to the manufacture of lifting apparatus, for which he foresaw a large possibility of development. In 1894 the business was converted into a limited liability company. The employment of electric power for lifting purposes has been a marked feature of the progress of the firm, who exhibited what is believed to have been the first electric lift made in this country at the Crystal Palace in 1890. Step by step the works have been enlarged, the latest extension being the new three-story block 230ft. in length, built by Messrs. G. Parker and Sons from plans by Mr. Marcus E. Collins, F.R.I.B.A., of Old Broad-street, E.C., and opened in July, 1912. Further enlargements and reconstructions are, we understand, under consideration by the directors. The firm hold the Royal Warrant as lift makers, by appointment to H.M. King George V., having held a similar appointment from H.M. King Edward VII. and H.M. Queen Victoria.

The visitors having assembled in the offices, Mr. Cecil Walker welcomed them in the name of the directors, and invited attention to a framed photograph, dated 1864, of the staff and men of "Waygood's Newington Iron Works," comprising a group just over thirty in number. Below it was a series of photographs of the works, staff, and employees at the present day, demonstrating the extraordinary development of the firm's operations. Mr. Walker then led the way through the various departments, explaining that necessarily the route of inspection could not follow, in every case, the order of construction of the various parts of a lift.

Passing from the yard into the assembling shop, a great number of lift machines were seen in process of being fitted together. The various parts are, as far as is practicable, designed to be interchangeable, and it was shown that the greatest nicety in accuracy of fit is secured. Special facilities have been provided to enable every machine to be tested under as nearly as possible working conditions by connecting them to actual cages, which run up and down in a series of testing towers. At the end of the assembly-shop the party found themselves in the machine shop, where the large tools for cutting and boring are all driven by electric motors fitted underground. Amongst these were noticed high-class tools of the latest manufacture, employed for cutting the worm-wheels and milling worms from the solid steel. Proceeding by lifts to the first floor, the party were shown smaller-sized machines being fitted and assembled, the firm having to deal with a demand for sizes ranging from ½H.P. to 30H.P., necessitating a large amount of stock. The members next proceeded to a gallery on the second floor, where the electrical controllers and fittings were being manufactured. The winding of the magnet spools on very simple and effective machines of the firm's own design was seen; these spools have to receive searching tests for faults, and in reply to questions it was elicited that only a very small percentage were rejected for electrical defects. Having seen the varnishing and polishing departments on the upper floors, the visitors returned to the central store and inspected the woodworking shops. In the main carpenters' shop the operation of a pendulum saw, devised by a member of the firm, attracted attention. Suspended from a beam and worked by electric motor, this saw has a perfectly free action, and rapidly and with the greatest accuracy cut through the beams brought beneath it. In the stores it was seen that every one of the many hundred parts which go to make up a modern lift bears a distinctive number, and is assorted into one of a large series of metal bins or open lockers, each marked with the same identifying number. In the iron-working shop the frames or platforms of lifts were seen in course of construction and fitting together. The final departments inspected were the forge and the hydraulic machinery shops.

Before leaving, Mr. Percy Young expressed, on behalf of the members of the society, their hearty thanks for the manner in which the entire works had been thrown open for their inspection and the lucid explanations given by Mr. Walker at every stage, rendering it possible for them to realise the splendid organisation of machinery and the way in which every detail of the complicated problem presented by the modern lift had been worked out with the most painstaking accuracy by Messrs. Waygood.

THE PLANNING OF SCHOOL HOUSES AGAINST THE FIRE HAZARD.*

By Frank Irving Cooper, Architect, President, Massachusetts Society Heating and Ventilating Engineers, Boston, Mass.

Architects have the greatest knowledge of planning and construction; they know the fire resistance of materials, and have the greatest chance in planning new buildings to convince the committee in charge, of the necessity of the best protection against fire. It is to the interest of every architect that his building shall be constructed in the best possible way, and that his public shall know why it is the best. In case of accident due to poor arrangement it is the architect who receives well-deserved public censure.

FIRST CLASS BUILDINGS NOT ALWAYS POSSIBLE.

While all school buildings should be erected of fireproof materials throughout, such construction is usually prohibitive by reason of its first cost. Even the City of Boston now builds its outlying school buildings of second class construction, and conditions justify the architect who designs this class of buildings. But no architect and no school authority can be justified who omits such simple and inexpensive methods of construction as are herein recommended, which insure a building which will resist fire a sufficient length of time to allow complete emptying even without previous fire-drill practice. This paper will consider buildings of second-class construction, these being 90 per cent. of all school buildings erected. The small number of first-class construction buildings are in large towns or cities, and are adequately protected by building regulations. In planning the school building the architect should aim to use the simplest form or skeleton. The skeleton is determined by the main halls and corridors of the building. The stairways are fixed by considerations of convenience in going from floor to floor, safety in case of fire and ease of exit. Mr. H. F. J. Porter, the authority on fire-drills, has said that it is impossible to limit the number of people per story to the capacity of a stairway. Safety must be insured by having two sets of egress of ample proportions, one set located on each side of a division wall, but each accessible from every part of each floor.

FIRE DIVISION WALLS.

Fire division walls in the modern school building are a proposition which the school authorities are slow to accept. It has been my experience that school authorities are difficult to impress with the necessity of providing against fire. In one of the largest high-school buildings in Massachusetts, whose main corridor is over 300ft. long, two cross-partitions of wired glass had been designed to divide the building into three sections. These partitions were removed over the architect's protest because the school authorities claimed the corridor monitor could not have an unobstructed view of the centre corridor if these fire partitions remained. How far the authority of a school monitor could control that corridor in case of panic is a question for the mothers and fathers of children who attend this school. While it is difficult to plan for fire division walls in school buildings, it is usually possible to provide two independent ways of egress from the schoolroom to stairways situated far apart, and so separated that no fire is at all likely to occur which will affect both stairways simultaneously. This method of providing escape has been approved by the Massachusetts State Inspectors. The high-school building at Bennington, Vermont, is planned to meet Mr. Porter's method of providing horizontal escape by having across the main corridors doors which are held open by a chain with a fusible link. The chain running from this link is also attached to an electric catch which is released by the same current that sounds the fire-gongs. Sounding the fire-gongs closes the door across the corridor, thus dividing the building into two sections, each with its independent stairways. This will allow of safe escape for a much longer period than could be had with the usual open corridors and staircases.

STAIRWAY ARRANGEMENT AND CONSTRUCTION.

Staircases should always be in plain view and the architectural treatment of corridors at stair points should be such as to suggest the way of exit. All stairways should discharge directly to the outside of the building, and not into corridors. The outside walls at point of discharge should be brought to the edge of the door-frame, doing away with the angle which in many cases of panic has caused loss of life. Staircases should be built in wells shut off from corridors by doors glazed with wired glass; these doors should have no locks nor latches, should swing out only, and should have self-acting door-closers. Both stairs and their supports should be fire-resisting; neither slate nor marble should be used for treads, unless supported under their entire width and length. Turns in stairs should always be accomplished by landings or platforms. No winders should be allowed. There should never be less than three nor more than fifteen risers between platforms, nor should

*A paper read before the International Congress on School Hygiene, Buffalo, Aug. 25, 1913.

a platform or landing be less than 4ft. wide. In large school buildings stairs should extend to the usually flat roof, from which there should be a separate escape to the ground. The *last parts* of a building to succumb to fire should be the stairs.

DOORS AND EXITS.

All doors should invariably swing in the direction of the outgoing passage. Doors to stairways should have automatic closing devices; exit doors should have an approved type of push-bar device that will unlock the bolts by pressure against the bar. Some authorities have omitted all locks on classroom doors, and there is much in favour of this method wherever it is not necessary to secure rooms against misdemeanours. All locks to schoolrooms, closets, and exit doors should be those that can never be locked against the outgoing person. Book lifts should always be inclosed by solid walls, or should be lined with metal from top to bottom.

FURRING AND FIRE STOPS.

While, from the point of the fire engineer, wood furring should never be employed, yet the difficulty of securing damp-proof, solid walls, when the plastering is placed directly on the outer masonry wall, and the cost of metal furrings or tile lining frequently necessitates wood furring as the only method left for the architect under the appropriation. Wood furrings should be stopped off by plaster at the floor and ceiling and midway between. Even metal furrings should be fire-stopped to prevent the spread of fire by draughts of superheated air or flaming gases. The casing of walls with wood sheathing should be entirely done away with, not only because it is a help to the spread of fire, but on account of its unhygienic properties, harbouring germs and making places for the lodgment of dust. Its place should be taken by hard plaster, to which is glued burlap. The well-designed modern school building has all ornamental woodwork omitted, and the necessary wood trim about doors, windows, and blackboards reduced to a minimum. Cast-iron construction members if unprotected are considered unreliable by fire engineers, and should not be used. The architect should advise against pitched roofs for school buildings, not only because it is difficult to design such a roof in a fire-resisting manner, but also on account of the tendency of school authorities to make use of the attic space, which is liable to be stored with rubbish and cast-away furniture. The roof covering, if possible, should be of tile or slate imbedded in a suitable roofing composition. After this comes metal roofing over heavy asbestos paper, or composition gravel or slag, using 300lb. of slag or 400lb. of gravel per 100sq.ft. of roof.

FIRE EXTINGUISHERS OR SPRINKLERS.

All school buildings should be equipped with chemical fire extinguishers of a type approved by the National Board of Fire Underwriters. Additional protection should be planned for by providing an efficient standpipe of 2½in. or 3in. pipe connected to the public water-mains, and located at some central point, and having hose connections on each floor, including the basement. As a matter of precaution a small jet cock should be placed on this standpipe to allow inspection of water service. At each hose connection there should be a sufficient length of Underwriters' hose with play pipe to reach any part of that particular floor. This hose should be supported by a swinging rack in which the hose is folded layer by layer, or else by a rack where the hose is looped over wooden pins, which drop out when the hose is run out. The necessity of safeguarding large property values from destruction by fire caused automatic sprinklers to be invented. They are chiefly used in factory buildings, and have reduced the average loss per factory fire from over 10,000dol. to 265dol., and, so far as records show, no life has ever been lost in a sprinkled building when the sprinklers were in order and working. There is nothing sensational about the work of automatic sprinklers; they save lives by striking at the fire itself and checking it before it has become a dynamic force for devastation. At the same time they sound an alarm warning everyone that they are fighting fire somewhere in the building. Statistics show that every week ten school buildings are destroyed by fire in the United States. The Collinwood fire, with all its horrors, may be repeated any day, so little have the lessons taught by that fire been heeded. Yet automatic sprinklers installed in school buildings would practically render such a catastrophe impossible. A rapidly-spreading fire costs many lives. No fire can spread rapidly under sprinklers. That the automatic sprinkler has become known and approved by school authorities is shown by the example of the City of Buffalo, where its public school buildings, Nos. 1 to 62 inclusive, its Central High School, and its Lafayette High School, all have the basement protected by automatic sprinklers. In addition to the usual alarm gongs about the building there should be an alarm to the Fire Department. This can be effected by having a standard alarm-box placed within the building, or, as in the case of the Boston schools, an auxiliary to the gong alarm may connect the school alarm with that to fire headquarters. The system allows ringing the school gongs without notification to the Fire Department, but the Fire Department cannot be called without sounding the school gongs.

BOILER AND MANUAL TRAINING ROOMS.

Boiler-rooms should be placed outside of the buildings. When this is not possible boiler- and heater-rooms should be isolated by means of brick walls having thoroughly fire-resisting doors, with automatic closing devices. Should the floor over the boiler be of ordinary wood joint constuction on account of a necessarily small appropriation, the joists should be filled in solid with mortar or mineral wood and the ceiling should be of thick plastering on metal lath, wired to metal furrings. All ceilings of cooking- and manual-training rooms should be treated in the same manner as the ceilings over boiler-rooms.

PUBLIC SENTIMENT AND PROTECTION.

Professor A. D. F. Hamlin has said that "the schoolhouses of any community are gauges of its enlightenment"; also "it requires only diffusion among the people of correct information on the subject to secure from them all that is necessary for the erection of suitable and creditable edifices." While I believe this is true, yet it is difficult to put conditions plainly before the people and to secure their action. In one New England town a high school building of three stories was being built with wood laths for plastering. The committee in charge of erection would not permit the change to metal lath on account of expense. A public appeal to the townspeople, however, made it clear to the committee that the safety of the children against the saving of 1,000dol. was not to be considered. Wire lath was then voted. An informed and awakened public will demand that an architect shall design school buildings which shall meet the demands of the educators and protect the lives of the school children. When the law holds him criminally responsible for faulty planning and construction reform will be immediate. How the position of the architect is now controlled by public opinion was clearly stated by Mr. Wm. George Bruce in a manual published in 1903. He says, "Schoolhouse designs are made to be accepted rather than to educate public taste. The architect must try to please the taste or fancy of prospective patrons. When he is thrown into close competition he cannot afford to deal in ideals, he must meet conditions." And Mr. E. M. Wheelright, in his book on school architecture, published two years before the above, stated, "In one large Ohio city, where the authorities pride themselves upon the low cost of schools, there is a building four stories in height, with stud interior partitions, furred walls, and no fire-stops. No metal or brick ducts are provided for ventilation; the foul air is supposed to find its way through the hollow spaces in floor and walls to the space between roof and the ceilings of the upper rooms and from thence through ventilators to the outer air. A more imperfect system of ventilation and a more ingenious fire-trap could not well be devised." Mr. Wheelright's book was largely distributed, and without doubt was in the hands of many Ohio authorities; but nothing was done to compel safer school buildings until one March morning came a fire in the Collinwood schoolhouse. You all know the result; 163 of the children in that school were burned to death. Yet it is stated in "Insurance Engineering" that "within three months after the Collinwood fire plans for an exact duplicate of that building were submitted to the Ohio authorities."

THE EFFECT OF SATURATION ON THE STRENGTH OF CONCRETE.*

By J. L. Van Ornum, M.Am.Soc.C.E.

The paucity of recorded information concerning the treatment of concrete specimens, with regard to moisture conditions during their storage while awaiting the test for strength, seems to indicate a general supposition that this feature has no considerable effect on results. Apparently corroborating this attitude is the statement in the recent report of the Special Committee on Concrete and Reinforced Concrete, in which, while specifying the exact dimensions, mixing, consistency, age, etc., of test specimens, the only requirement designed to control moisture treatment during their curing seems to be that they shall be "stored under laboratory conditions." It is the purpose of this paper to invite attention, not only to the great importance of specifying and standardising the moisture treatment of specimens intended for testing, but also to the further fact that similar conditions, as they act on the finished structures, will affect their strength considerably, and, therefore, should be considered in specifying the proper unit stresses. It is evident that this factor should not be ignored when great variations in strength, to an amount of perhaps 50 per cent. above or below a mean value, result from differences in moisture conditions.

During the last six years this question, at times, has been the subject of investigation in the Washington University Testing Laboratory. Different features have been explored experimentally, as work on graduation theses, since 1907, by Messrs. Trelease, Feinberg, Harris, Start, Bank, Caplan, Bryan, and Keller. Although these tests leave the greater part of the field still untouched, the writer believes the results thus far obtained to be so definite in their showing of a decided influence of moisture conditions on strength, and so significant in their general indications, that he offers this summarised statement of experimental results to the engineering profession for its consideration.

The most important part of the investigation is that of the effect, on the compressive strength of concrete, produced by varying systematically the relative length of time of exposure in air and in water. The test specimens were cylindrical, 8in. in diameter and 16in. high. The materials were: a standard brand of Portland cement which fulfilled thoroughly all the requirements of the standard specifications; a clean sand of good quality, weighing about 110lb. per cubic foot when dry, and having 36 per cent. voids; and a washed river gravel of the same weight, varying in diameter from quite small up to 1½in., and having 33 per cent. voids. The proportions were the usual 1:2:4, by volume; the mixing was done thoroughly by hand, and the quantity of water used was such as to give a moderately wet consistency, which allowed a thorough compacting by stirring with an iron rod and a slight tamping. All details of fabrication, curing,

* To be presented to the American Society of Civil Engineers, Nov. 5, 1913. These papers are issued before the date set for presentation and discussion. Correspondence is invited from those who cannot be present at the meeting, and may be sent by mail to the secretary. Discussion, either oral or written, will be published in a subsequent number of "Proceedings," and when finally closed, the paper, with discussion in full, will be published in "Transactions."

and testing were planned so as to secure such complete uniformity as is practicable to obtain in all regards except the one for which the controlled variation formed the particular purpose of the experimental study.

The cylinders were removed from the moulds when two days old, and were tested at an age of six weeks. The intervening forty days constituted the period in which the duration of their immersion in water was varied systematically from nothing to the full time. The average results of the 240 tests thus made are plotted on the diagram, Fig. 1, on which the abscissas represent that number of days (after the two days in the moulds and the time of exposure to air) during which each set of specimens was placed in water before crushing them; and the ordinates give the percentage of strength which each set of immersed cylinders (standing in water for the indicated number of days) was found to have, taking the compressive strength of the dry specimens from the same mix as 100 per cent. Thus, at the extreme left is represented the basis of comparison, or those which were not immersed at all; those specimens which were cured in air of ordinary humidity for 32 days and then immersed for 8 days are shown by the black circle to be 86 per cent. as strong as the air-cured concrete; those in air for 12 days and therefore finally cured in water for 28 days have gained 9 per cent. strength; and those submerged for the entire 40 days exhibited an average compressive strength fully 50 per cent. greater than the air-cured specimens. (Some other experiments have also shown that concrete aged entirely in water is considerably stronger than when left continuously in air, as reported by Rafter, Withey, and the Watertown Arsenal.)

An average curve for the plotted points has been drawn as a full line, showing the systematic increase in strength as the time of submergence is lengthened beyond 2 days; but there exists the significant fact that specimens of the dimensions used, decrease rapidly in strength when stored in air for 38 (or more) days and then placed in water for the remaining 2 days (or less). This particular feature of the rapid loss of strength on first exposure to water, and the active but slower recovery of strength as soaking continued, required a multiplication of tests to determine satisfactorily the locus of the curve in this region, and, consequently, more than half of the experiments were concentrated in this descending and the adjacent rising portion of the plot.

It thus appears that the compressive strength of concrete exposed only to air may be reduced nearly 40 per cent. when saturated with water; but that this loss is actively regained as the treatment is continued. The word "saturation" is used advisedly, because the minimum strength was found to coincide practically with the length of time required for water to penetrate to the middle of the specimens. Very plainly, this loss of strength has no relation to the percentage of contained moisture, as it is not only regained, but much exceeded, if the saturation is continued long enough. Perhaps the reduction in strength is purely a temporary physical phenomenon which is gradually counteracted and finally dominated by continued saturation permitting the imperfectly developed chemical processes of hardening to proceed actively. If this be true, concrete would regain something more than its original strength if dried out as soon as completely saturated; but this value would be less than that attainable by a continuance of the water treatment; also a repetition of soaking after such an experience would again temporarily reduce the strength, but less than before. These questions, as well as others, such as the duration of saturation necessary to prevent the temporary relapse of strength described, the corresponding effects of other periods of treatment similar to that discussed, of alternating the exposure to air and water, the result of different dimensions, proportions, materials, etc., all offer a large, interesting, and fruitful field for investigation.

In a series of experiments on the factors affecting the strength of bond between concrete and embedded steel 74 tests were made to determine whether there existed the same tendency of rapid weakening at first and a following recovery of strength when the dry specimens were immersed in water. The concrete was of the same character as already described, and the test specimens were partly of the notched beam type transversely loaded, and partly of cylindrical form, in which the rod was pulled from the embedding concrete. All care was used to make the methods of testing such as to minimise all variables except the particular one the effect of which was sought. The results indicate clearly, for both plain and deformed bars, that the bond strength values, similarly, decline rapidly and then increase after saturation is complete, as is the case with the compressive strength; although the average minimum observed was only about 75 per cent. of that of the specimens cured entirely in air. Whether or not this percentage really marks the greatest weakening of bond produced by immersion at an age of six weeks is somewhat uncertain; perhaps additional tests for intermediate periods of soaking would have developed a further reduction in strength. At any rate, a similar behaviour characterises the bond

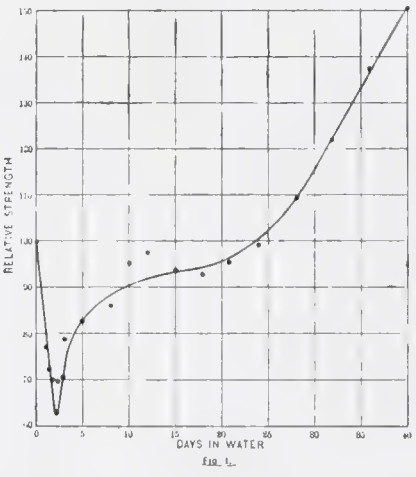


Fig. 1.

values obtained during the first few days of saturation.

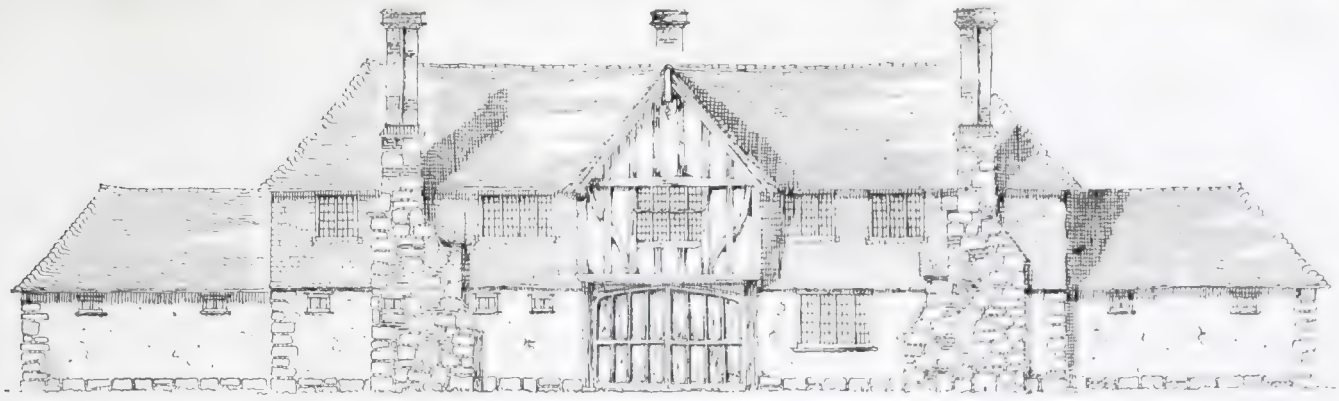
Thirty-two beams were made of such dimensions and amount of longitudinal reinforcement (without any web reinforcement whatever) that failure would always occur through the effect of the excessive web tension in the concrete. The materials were of the same quality as those already described, and equal precautions were taken to secure reliable results. These beams were also tested at an age of six weeks, but the small number restricted the investigation to lengths of immersion designed to detect only the early loss of web tensile strength and its subsequent increasing value, without tracing it throughout successively lengthening periods of exposure to water to the limit of forty days. The characteristic effect is again the same, the lowest average found being again practically three-fourths of the strength of the air-cured specimens. It may be that, in this case also, the minimum value was not detected.

A series of experiments on concrete prisms when seven years old, to determine any change due to age in elastic properties, has been discussed previously by the writer. ("Transactions," American Society of Civil Engineers, Vol. LVIII., pp. 312-13.) It may be stated, in reference thereto, that the modulus of elasticity of these old prisms exhibited a practically constant value throughout the repeated loadings equal to the maximum before found, which was about 80 per cent. greater than the final constant value as then reported for prisms of ordinary age; or a value of 4,000,000 in compression for that 1:3:5 limestone concrete. In these experiments two specimens were immersed in water until saturated and then carefully tested; the resulting compressive modulus of elasticity for wet concrete was 60 per cent. of that observed on the same specimens when dry. This lowering in value refers, again, only to the effect produced as soon as the saturation is complete; and has no reference to a continuance of the exposure to water, such as is reported on certain other tests ("Bulletin," No. 175, University of Wisconsin, p. 17), where the figures given for the compressive modulus of elasticity of concrete specimens cured entirely in water for twenty-six days are about one-fourth greater than those cured only in air.

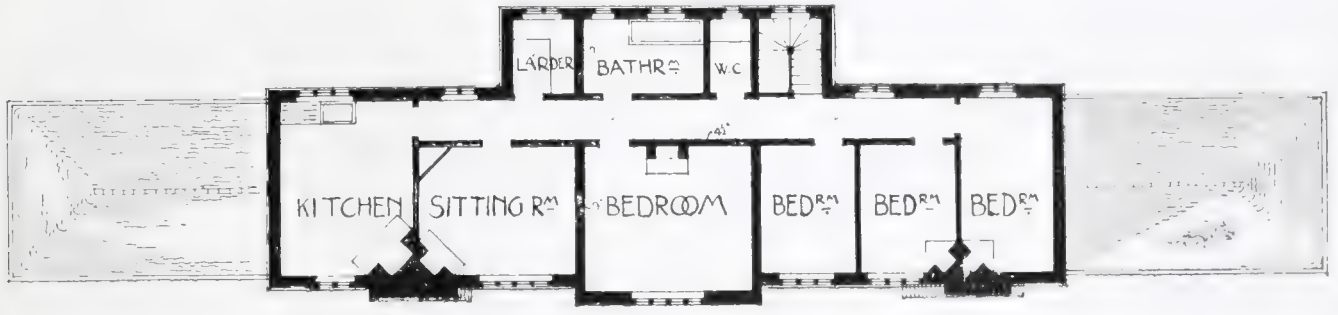
As the various strength values of dry concrete are temporarily reduced from 25 per cent. to 40 per cent. by saturation, it would seem that this fact should be given definite consideration in fixing the working stresses used in the design of structures which may be thus exposed, or else conditions should be controlled in such a way as to prevent the weakening thus produced. No such effect occurs in concrete constantly under water or in moist earth from the time of its fabrication; but construction above ground, and, therefore, exposed to dry air for a time and then to a heavy rain or other source of rapid wetting, presents conditions under which this reduction in strength exists temporarily. Fortunately, the remedy is simple and inexpensive. It is to keep the exposed material thoroughly wet until its enclosure by exterior walls and roof render its saturation by rain impossible. The case of parts not thus protected, or those for which enclosure is delayed, is not so simple; because the length of time of saturation which will make the concrete safe against serious reduction of strength is uncertain. The systematic wetting of concrete is a well-known principle of good construction; but the writer's observation and experience suggest a very considerable tendency to regard that procedure as abstractly correct, but practically rather specious or trivial. One purpose of this paper is to present the facts in such a way that the frequent, thorough, and faithful wetting of all parts of such concrete structures shall henceforth be no more ignored than is now the protection from freezing or disturbance while setting. Probably this treatment should be continued for a length of time substantially greater than that heretofore indicated—perhaps for a period expressed in weeks instead of days.

Undoubtedly, carelessness in a thorough control of this kind is a frequent contributing cause of weakness which is sometimes sufficient to result in failure. Very evidently, this temporary weakening of concrete by saturation is amply covered by the factor of safety required by good practice, if it be the only fault; but the materials may be considerably below standard, or the workmanship may be defective, or the design may encroach on the reserve of safety, or the occasional overload may be imposed; and if the material man, the construction superintendent, the designer, and the user of the structure should each rely on the others to meet fully the requirements, in the expectation that his own delinquency will be safely covered by the factor of safety, it would not require an impossible coincidence of such conditions to cause disaster; especially in view of the fact that considerable variations from the average strength values, which form the basis of design, necessarily exist in different parts of the structure. In fact, the failures which have occurred are generally a result of several such contributing causes. The writer believes that the considerable weakening produced by the saturation of dry concrete has invariably been a contributing factor in all those instances in which there was an active wetting of dry, or partly dry, concrete when subjected to essential stresses.

This general proposition furnishes one more evidence of the remarkable responsiveness of concrete to variations in its treatment. The fact that differences in control (which to the average artisan are seemingly unimportant) actually do exert a positive influence on its essential characteristics constitutes a definite warning against entrusting it to the uncertainties of irresponsible or sceptical supervision, and assures ample reward for a competent control which is



:: NORTH ELEVATION ::



:: CHAMBER PLAN ::



:: GROUND FLOOR PLAN ::

STABLES AT NEWCHAPEL, SURREY. Mr. CHARLES W. BOWLES, Architect.

correctly adapted to develop its capabilities. The susceptibility of steel to the influence of phosphorus and sulphur, of details of its heat treatment, and of other conditions occurring in the process of manufacture have resulted in restricting its production to the scrutiny of expert superintendence. Equal reason exists for, and commensurate advantages will follow, a thoroughly discriminating control of both the initial fabrication of concrete, and the details of treatment during its hardening, in order to realise the great possibilities inherent in this newer material.

The treatment of steel is not always complete as it comes from the rolls, as is shown by such effects as the changes in strength produced by the cold-twisting of steel rods; much more important in relation to the resulting quality of concrete is the nature of its treatment after fabrication, both because its attainment of strength is a relatively slow process and for the reason that the nature of the prevailing conditions provided during this period affects so greatly the development of its essential properties. The notable responsiveness of concrete to the character of its treatment is a direct appeal for thoroughly trustworthy and expert control.

STABLES AT NEWCHAPEL, SURREY.

The masonry is local sandstone, hammer-faced, and the brickwork is of thin, sand-faced, hand-made bricks from two or three selected fields. The tiles are old sand-faced. The oakwork in the half-timbering is adzed on the quarter, drawbored, and pinned together in the old manner. The stable fittings to be in oak and elm. The architect is Mr. Charles W. Bowles, of Staple Inn, Holborn.

LANDLORD AND TENANT PARTNERSHIP.

Sir Richard Paget read a paper before the British Association last Tuesday on "Partnership in Agriculture between Landlord and Tenant." After paying a tribute for their help to Mr. Charles Bathurst, M.P., Mr. Christopher Turnor, Hon. Edward Strutt, and Mr. T. G. Spyers, he went on to say that agriculture must be classed among the sick industries of the country, and land-owning as an expensive hobby for the rich. The farm was for the man with capital; there was no chance for the man whose technical skill was his only security. Agriculture in England at the present time, save in quite exceptional cases, was conducted on uncommercial lines. The ordinary landlord and tenant agreement secured no community of interests between the parties, no division of profits, and no opening for outside capital. Farming as a profession was consequently limited to the relatively small class of farmers who have sufficient capital of their own. If agriculture wanted more capital, in order that it might be carried on in its most profitable manner, it must be brought within the pale of the industries, and must offer to capital a fair share of the profits. Farming on a share of produce in lieu of rent—such as the métayer system on the Continent, or "farming on shares" in Canada, the U.S.A., and Australia certainly gave an opening for capital and enabled a farmer to operate without capital of his own; but it had the objection that the landlord was only interested in the yield of the crop (of which he got a half, a third, or other agreed proportion), not in the cost of producing it, since the cost of labour fell on the tenant. The interests of the parties were not identical, and the system did not tend to encourage the most intensive culture.

The ideal system would appear to be a business partnership wherein the landlord invested the land, the tenant invested what capital he could, and the balance necessary for the most efficient cultivation was invested by the landlord, or it might be borrowed by the partnership on the security of its assets and the guarantees of the partners. Sir Richard went on to give particulars of a scheme into which he had entered on a farm of his own near Wolverhampton. The landlord was credited, for the purpose of division of profits, with the agricultural value of the land, and the tenant was credited with a nominal capital representing the capitalised value of his skill and services. In estimating the amount of tenant's capitalised value it

was assumed that, if the partners each provided half the cash capital, the tenant's share of profits in return for his services should be equal to the landlord's in return for his land and for such services as he might be able to render to the partnership. If, therefore, the land was valued at, say, £4,500, the tenant would also be credited with £4,500, as representing the capitalised value of his services. If the capital required were £1,500, and, in the first instance, the whole of it were supplied by the landlord, the landlord would be credited with £4,500, plus £1,500, equals £6,000, as against the tenant's £4,500, and would, therefore, receive four-sevenths as against three-sevenths of the divisible profits. In estimating profits all expenses for repairs, tithes, taxes, and insurance, etc., were charged to the partnership. The tenant was given the right to invest from time to time up to the total amount of the cash capital, thus buying out the landlord's capital interest, other than his interest in the land. The landlord would then receive three-sevenths of the profits and his money back, while the tenant would receive the remaining four-sevenths of the profits. Where the landlord was willing to sell the freehold he might be bought out altogether. The labourers on the farm in question got a bonus according to their wages and the percentage of profits.

It might be objected that under such a scheme a partnership meant risk, but it was the man who counted, and no landlord could be considered as having done his due by his land until he had secured that it was cultivated by a competent and honest farmer. Bad farmers should be driven out; good farmers would make good partners. Comparing the proposed partnership tenancy with the present system of tenure, Sir Richard said that the partnership system would tend as follows: (1) To make agriculture an industry comparable with other industries. (2) To encourage commercial methods, the keeping of proper accounts, and more scientific methods. (3) To give to agriculture the advantage of better credit and cheaper money, by the association of the landlord's credit with that of the farmer. (4) To encourage landlords or other capitalists to invest in agriculture. (5) To enable properly-trained farmers to start farming without capital of their own, and to give them an opportunity to invest their savings in their farms. (6) To facilitate systematic profit-sharing with labourers on farms. (7) To give landlords a business interest in their farms and so place them in the position to secure co-operation between farmers, to obtain information and technical advice, and generally to use their intelligence and influence for the good of the industry.

Mr. Alfred Mosley, in opening the discussion, said that Sir Richard's system means "Heads I win, tails you lose." The tenant who entered into that agreement stood to win everything, and the landlord to lose everything. Assuming that the experiment was a success, the tenant would first of all buy out the share of capital put in, and then gradually buy out all the land and take all the profit. If the experiment was a failure the tenant lost nothing; but the landlord would have lost his capital, and have got nothing in the way of rent.

Mr. Christopher Turnor said he hoped people would think seriously of the possible development of the partnership system. We were spending a great deal on agricultural education, but many young men who passed our agricultural colleges were not able to remain in England. He thought the partnership system would be a valuable means of keeping them there. He owned a 300-acres farm, in bad condition, worked on that system, and he had actually made more out of the land than ever before. His partner seemed to be satisfied. For the first year he had to forego the rental, but since then it had been paid.

Mr. G. P. Hughes said that the great drawback with many of the landlords was that their land had been mortgaged up to the capital value, and if the fact was taken into consideration that land had diminished in value from 30 years' to 20 years' purchase, it would be found that landlords could not carry out the scheme. He advised everyone who adopted co-partnership to choose a man with a clear head, and to take an active part in the management of his estates.

TABLE I.

Width of roadway in feet.	Percentage of grade on street.	Crown, with no cross fall.	Crown Rise, for Variable Cross-Falls, in Feet.											
			0.25	0.50	0.75	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00
28	1	0.48	0.45	0.42	0.39	0.36	0.33	0.30	—	—		—	—	—
28	2	0.45	0.42	0.39	0.36	0.33	0.30	0.27	—	—	—	—		
28	3	0.43	0.40	0.37	0.34	0.31	0.28	0.25	—	—	—			
28	4	0.41	0.38	0.35	0.32	0.29	0.26	0.23	—	—	—	—	—	—
28	5	0.39	0.36	0.33	0.30	0.27	0.24	0.21	—	—	—	—	—	—
34	1	0.59	0.56	0.53	0.50	0.47	0.44	0.41	0.38	—	—	—	—	—
34	2	0.57	0.54	0.51	0.48	0.45	0.42	0.39	0.36	—	—	—	—	—
34	3	0.54	0.51	0.48	0.45	0.42	0.39	0.36	0.33	—	—	—	—	
34	4	0.51	0.48	0.45	0.42	0.39	0.36	0.33	0.30		—	—		
34	5	0.48	0.45	0.42	0.39	0.36	0.33	0.30	0.27	—	—	—	—	—
40	1	0.71	0.68	0.65	0.62	0.59	0.56	0.53	0.50	0.47	—	—	—	
40	2	0.68	0.65	0.62	0.59	0.56	0.53	0.50	0.47	0.44	—	—	—	
40	3	0.64	0.61	0.58	0.55	0.52	0.49	0.46	0.43	0.40	—	—	—	—
40	4	0.61	0.58	0.55	0.52	0.49	0.46	0.43	0.40	0.37		—		
40	5	0.58	0.55	0.52	0.49	0.46	0.43	0.40	0.37	0.34	—	—	—	—
46	1	0.82	0.79	0.76	0.73	0.70	0.67	0.64	0.61	0.58	0.55		—	—
46	2	0.79	0.76	0.73	0.70	0.67	0.64	0.61	0.58	0.55	0.52		—	—
46	3	0.75	0.72	0.69	0.66	0.63	0.60	0.57	0.54	0.51	0.48			
46	4	0.71	0.68	0.65	0.62	0.59	0.56	0.53	0.50	0.47	0.44	—		
46	5	0.68	0.65	0.62	0.59	0.56	0.53	0.50	0.47	0.44	0.41	—	—	—
56	1	1.01	0.98	0.95	0.92	0.89	0.86	0.83	0.80	0.77	0.74	0.71	—	—
56	2	0.97	0.94	0.91	0.88	0.85	0.82	0.79	0.76	0.73	0.70	0.67	—	—
56	3	0.93	0.90	0.87	0.84	0.81	0.78	0.75	0.72	0.69	0.66	0.63	—	
56	4	0.88	0.85	0.82	0.79	0.76	0.73	0.70	0.67	0.64	0.61	0.58		
56	5	0.84	0.81	0.78	0.75	0.72	0.69	0.66	0.63	0.60	0.57	0.54	—	
62	1	1.13	1.10	1.07	1.04	1.01	0.98	0.95	0.92	0.89	0.86	0.83	0.80	
62	2	1.08	1.05	1.02	0.99	0.96	0.93	0.90	0.87	0.84	0.81	0.78	0.75	
62	3	1.03	1.00	0.97	0.94	0.91	0.88	0.85	0.82	0.79	0.76	0.73	0.70	—
62	4	0.98	0.95	0.92	0.89	0.86	0.83	0.80	0.77	0.74	0.71	0.68	0.65	
62	5	0.93	0.90	0.87	0.84	0.81	0.78	0.75	0.72	0.69	0.66	0.63	0.60	—
72	1	1.32	1.29	1.26	1.23	1.20	1.17	1.14	1.11	1.08	1.05	1.02	0.99	0.96
72	2	1.27	1.24	1.21	1.18	1.15	1.12	1.09	1.06	1.03	1.00	0.97	0.94	0.91
72	3	1.21	1.18	1.15	1.12	1.09	1.06	1.03	1.00	0.97	0.94	0.91	0.88	0.85
72	4	1.15	1.12	1.09	1.06	1.03	1.00	0.97	0.94	0.91	0.88	0.85	0.82	0.79
72	5	1.09	1.06	1.03	1.00	0.97	0.94	0.91	0.88	0.85	0.82	0.79	0.76	0.73

THE TENANT'S VIEWS.

Mr. W. Allsebrook said he was associated with Sir Richard Paget in the experiment he had described. One of its great advantages was community of interest between owner and tenant, and he thought the scheme would be a great incentive to have the practical interest of the landowner in his work. While travelling in the United States, in the Argentine, and in Brazil, he had been greatly struck by the number of young men, of agricultural training and great ability, who had emigrated because they had no capital. They would not have left England if able to farm at home. This country did not produce anything like the foodstuff it should, because land was not cultivated as intensively as it might be. We were losing a great deal of the flower of our rural population; one in four was emigrating every year. If Sir Richard Paget's proposals could be brought into more general vogue a great many of those men could be saved to the country.

Mr. C. R. Fay (Cambridge) said it was undesirable that the landlord should be reduced to the position of a rent-charger. His function must be made more active than it was now, exactly on the lines suggested by the reader of the paper. He also thought that an attempt should be made to better the position of the agricultural labourer.

Sir Richard Paget, in reply, said that as regards "Heads I win," etc., if you wanted to get increased dividends you must take increased risks. At present the landlord had great security, but the absurdly small dividend of one or two per cent. He did not consider that he was running any more risk than if he was letting his farm to a tenant.

A RATIONAL FORMULA FOR ASPHALT STREET SURFACES.*

By J. ALDEN GRIFFIN, Assoc.M.Am.S.C.E.

Every now and then the question is raised: "What is the proper crown to give an asphalt street?" and there is a discussion as to which of the many formulas of to-day gives the best results. Having been asked this question many times in the past few years, and especially while connected with municipal improvements in Los Angeles, Cal., the writer has given the matter careful investigation, and, by a comparison of the surfaces proposed by the various formulas, has arrived at the conclusion that the crown rise should vary with the cross-fall as well as the grade of the roadway, and that a crown considerably lower than that proposed by the well-known formula of the late Andrew Rosewater, M.Am.Soc.C.E., should be used on streets having a cross-fall between the gutter grades. The writer even favours one which is slightly lower, where there is no cross-fall in the roadway; and, having reached these conclusions, he proceeded to determine the proper amount of reduction to make in the crown for varying cross-falls. After a great many experiments he adopted the following modification of Mr. Rosewater's formula. This gives the best results, using one-eighth of the cross-fall plus ¾in. as the reduction factor, but some may wish to change 0.12 H in the formula to 0.10 H, or even 0.08 H, in order not to reduce the crown

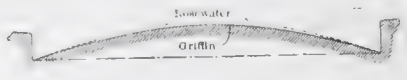


FIG. 1



FIG. 2.

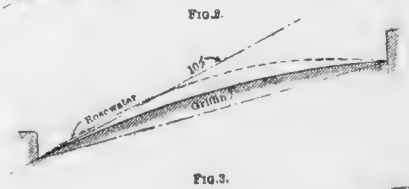


FIG. 3.



FIG. 4.

* A paper contributed to the American Society of Civil Engineers.

quite so much; however, the following is recommended:—

$$C = \frac{W(100 - 4p)}{5{,}000} - (0.12\,H + 0.06)$$

in which W = the width of the roadway between curbs, in feet; p = the percentage of grade longitudinally on the street; H = the cross-fall of the street, or the difference of elevation between the high and low gutters, in feet; and C = the height of the crown above the mean gutter grade, in feet.

It will be noticed that on a roadway having a very steep cross-fall the upper gutter will not hold water, which, in the majority of such extreme cases, will do no harm, and will very often save a cross-gutter at the intersection; however, it may be desired at some time to hold the water in the upper gutter, and this may be accomplished, without increasing the side slope of the surface, by shifting the crown to the upper side of the centre of the roadway, as shown in Fig. 4, which indicates a special cross-section at that point.

Table 1 is compiled from the formula for the more common roadway widths in Los Angeles. Figs. 1 and 4 illustrate the comparison between Mr. Rosewater's formula and the modification herein proposed on a 40ft. roadway having a 1 per cent. grade. Fig. 1 is for no cross-fall; Fig. 2 for a cross-fall of 1ft. between the mean gutters, and Fig. 3 is an extreme case with a cross-fall of 2ft. between the mean gutters. Fig. 4 illustrates a section in which the lower half meets the formula and the upper half is modified to hold the water in the upper gutter.

VENTILATION: ARTIFICIAL OR NATURAL.

By Paul W. Goldsbury, M.D., Warwick, Mass.

To secure a texture of air indoors that more nearly resembles that outdoors is the ambition of sanitary engineers who have anything to do with buildings or their construction. To live indoors and still enjoy some of the purity of the air that is to be found in the open is a matter of vital concern to the average worker, for the greater part of his day is passed under roofs and inside walls. Civilised man has been dwelling in his house for ages, adding comfort to comfort with apparently little regard as to what such confinement cost him in health and vigour. His eyes, however, have been suddenly opened, and that within a bare generation, for he has seen and known of the response which the "white plague" sufferer has made living under clear skies. He is learning something of the connection between the shut-in-ness of his office, shop, and sleeping apartment and his occasional ills and ailments. He is being persuaded that where the real sick are doing so well there must be something worth while for him in the air tinted and coloured by the sun and toned and perfumed by lake and stream, forest and field.

The human race has always needed shelter; a roof is wanted in all climates, either to protect from the rain and snow, or to shield from the light and heat of the sun. The play of the elements and the changes of temperature require walls also set so close as to shut away winds and cold. The house has been divided into compartments. Rooms afford individual privacy or establish limits necessary for business or housekeeping interests. In a thousand and one ways has the home and the school, stores, factories, and all sorts of buildings been made snug, comfortable, or divided up so as to anticipate every little thing which has to do with usefulness and service. The occupants have been protected from the struggles of the elements out of doors, and the changes of the seasons, and the structures have been more and more adapted and furnished and made to serve the man in his work, his studies, his whims, his pleasures. But the finished, the complex building is seen more and more to complicate and obstruct the free circulation of air. Man is so occupied with his art, his craft, his own creation, that he has forgotten the physical breath of life. The genius of the scientist and physician, the skill of the engineer and builder, all added to the concern and diligence of the janitor, have not met satisfactorily the problem of fresh air. The patient sufferer of tuberculosis, though compelled to lie still, has been forced to listen to the stiller voices of Nature, and learned lessons from her heart and ways which must become known everywhere.

All sorts of ventilating systems have been used and devised to introduce, purify, moisten, and change the air. To continually bring the large quantity of air necessary in factories, schoolhouses, and large public buildings, to wash out the dust, to heat, and at the same time keep up the humidity, entails an expense which seems prohibitive in the case of smaller buildings and dwelling-houses. The demands for sufficient moisture where cloth fabrics are woven have long been realised and have been met by the introduction of elaborate apparatus for humidifying the air. The popular recognition of the demands of the human fabric for moisture comes long after. To heat, to moisten, to remove the dust, and to supply the quantity of oxygen considered necessary for each individual, is only tackling a part of the problem in giving him the kind of air he needs. Students who were endeavouring to serve the public in providing better ventilation have met with success in a measure. Things might have been worse. They have had to fight organised greed and that race for wealth and competition which produces crowding and congestion, a tide very difficult to stem. These students, in the practical application of the results obtained in their laboratories, have been preparing the way and educating the public in ventilation. But it remains for those compelled to live in the open to carry forward such labours. Man's workshop is always more or less restricted, but the laboratory of Nature has practically no bounds.

How much people can be herded and boxed up together and not impair both their own health and the efficiency? The summer camp furnishes a marked contrast to the stuffy office and the winter apartment as to the tonic qualities of the free and fragrant air. Many of the newer banking and trust company offices show an evidence of a concession to that elemental fact that breathing space is necessary. The height of their ceilings seems to indicate something of a protest against the low-ceiled rooms of the day. It must be also a matter of good business policy to afford the high officials of such and other large institutions elbow-room on all sides where they have important affairs to transact. Precision in work and clarity in mind and thought must be nourished by a generous amount of atmosphere. There are virtues in the high-vaulted cathedrals in the space afforded the heated and fouled air to rise and escape.

Two hospitals* about the city of Boston have found quite a helpful suggestion from a very primitive source of architecture which they have adapted to their own needs. The Indian tepee emphasised some very ordinary lessons in physics. The Indian is said to live in his own chimney; at any rate, he has more or less fresh air coming in the doorway or under his walls, and much of the bad air must, of course, follow the natural drift, rise and escape with the smoke of his fire at the apex. Windows are seldom kept open at the very top of a room, and even if they were the ordinary ceiling is horizontal, so that there are pockets or large spaces where the air is not changed. If the ceiling or roof slopes, then the air as heated tends to flow upward all the time till it finds an outlet. Now the ceilings in these hospital buildings slope so as to allow the air from the rooms to drift into that uppermost space (in this case about 8ft. across), under the ridge running the length of the building between the gables at the ends of the roof. In fact, that part of the roof is raised so as to allow windows to be put in on either side. One is immediately struck in going through these buildings, particularly if any windows are opened below and above, at the freshness of the air. The currents from the ordinary levels to those under the apex of the roof seem to establish such a circulation that even the harmful odours and gases are wafted upward and entirely out of the building. When the air is still outside, that from within will come out of the windows opened on both sides of the roof. But with a wind, those on the leeward side, away from the direction from which the wind comes, only are opened. In that way, instead of the air being driven back in at the roof, it is sucked out. The genius of the white man has gone the Indian one better on that point. Of course, in such an arrangement the quantity of air passing in and out requires an extra amount of heat, but there are compensations. The response of the patients treated in these sanatoria seems to warrant the added cost of fuel.

In a broad study of all these considerations of purity of air and ventilation, one reaches the conclusion sooner or later that health is a matter of space, of variations in the character of the air, and that unobstructed nature is a master teacher in these arts. Consider how the movements of the sun, the rotation of the earth, produces the changes in temperature, and add to these the outlines and area of land and water, hills and valleys, all the geographical and topographical considerations which affect the direction of air-currents, their moistness and dryness. The earth in its geological outcroppings and chemical strata affect the air "electrically," one might say. The life of the woods, the fields, the sea, add to the character and aroma of the air. By all these forces playing in and out freely, Nature can present all sorts of faces and moods; she revitalises the atmosphere by gentle or more abrupt gradations. Can artifice approximate all these physical variations?

The hospital structure above described, with ample grounds about it, should be thought of as at a stage about midway between the regions where the elements are free and untrammelled and the pretentious office building in the heart of a large city. In the latter no expense may be spared to introduce air from a strata or level beyond the range of the ordinary pollutions of the atmosphere. Such air may be further washed and cleansed, moistened and heated, but imagine it in the long and circuitous channels and conduits through which it is introduced into the building as robbed of many of the virtues which it may have possessed. The walls of this long route must more or less taint it or cause it to lose its varying character. It must seem to the occupants to have pretty much the same smell all the time. Is it actually or only scientifically pure? Scientific men are already coming to recognise that some of the standards formerly set up as necessary for a safe atmospheric condition are not so absolutely essential. Air may even have a high carbon dioxide content and not be so injurious, providing it is not in so stagnant a condition, but is subject to waves and currents and shows variations which react upon the skin and sensory nerve fibres, giving evidences of tonic and harmonic changes. Air must be conceived of as offering continuously impressions to the nose and skin, which gauge its value.

The problem of ventilation is rendered more and more complex where there is crowding, where the natural is replaced by the artificial. The trend of city development, the skyscraper, makes fresh air costly. Health is very costly, but life, after all, can not be valued. Is there not, then, an impassable wall in city life? Must not the city sooner or later disintegrate in favour of the country? Health must in the end be the measure of real efficiency. The artificial must bow sooner or later to the natural forces. The laboratory student, with all his earnestness, zeal, and ambition in this behalf, has not as much at stake as the poor invalid who has to take to the woods for his life. The sensibilities of the latter are keyed up to protect his waning vitality, and may register discoveries beyond the delicate instruments of the former. Nature in all its nakedness and wildness must more and more

* Massachusetts Hospital School, Canton, and Children's Hospital, Longwood.

be courted when and where it can best develop those sensibilities.

In all this, Nature but compels man to return to her own side for instruction and life. He has placed his laboratory too near the market place, too near congested centres, and, though he must study these conditions at close range, his scientific vision becomes blurred—the atmosphere, the fumes, the fret of the environment hammer too much upon his perceptions, and so warp his conceptions, his results. He must know the life and various complications by experience. His conclusions, taken from one side, are sure to include error. His viewpoint must be ventilated, clarified by some of the lessons which those compelled to flee to the country are not only learning, but are happy for the life and all it affords and are desirous of sharing the good things.—*The Lancet Clinic.*

DESIGN FOR COUNTRY RESIDENTIAL CLUB, WEYBRIDGE.

[WITH ILLUSTRATIONS.]

This was a design prepared to a client's instructions for a proposed Country Residential Club at Weybridge. The plan consisted of a large number of public rooms, with service department, and twelve self-contained residential two-storied sets of ten-roomed chambers, with usual conveniences and small private kitchens. The general walling was intended to be of unpicked brickwork, and, as maintenance was an item to be considered, the windows were designed with stone dressings and lead glazing in iron casements. The roof was proposed to be an asphalte flat behind a parapet. The intended site was a knoll with magnificent views to south, west, and north, and towards these the principal apartments faced, while the entrance court was to the east. The design was prepared by Messrs. Geoffry Lucas, F.R.I.B.A., and Arthur Lodge, A.R.I.B.A., of 13, Gray's Inn-square, W.C., and the drawing was hung in this year's Academy.

DRAINAGE AND SANITATION.*

This is a substantial and somewhat stodgy volume of over 500 pages. But the treatment of the subject is systematic; it is not a series of puffs of manufacturers' specialities; every illustration has been drawn for the book, and on disputed points of practice—as regards ventilation, sewage disposal, and the like—the author is fair and unprejudiced. Here and there we take exception to his statements, and, generally speaking, we think the book might have been condensed with advantage. Noah's Ark may have been glazed with translucent oyster-shells, and the Emperor Caligula may have "neglected his duties of State" to supervise the substitution of glass in his windows for sheets of talc; but as these, and a few other contingencies of the like sort, are hardly likely to tax the energies of 20th-century architects or candidates for sanitary examinations, the information is hardly likely to benefit others than examiners hard up for irrelevant questions wherewith to floor neophytes.

Mr. Blake deals in quite proper order, firstly, with the environment of a building, then with its planning and construction, damp-prevention, etc., and follows on with ventilation, lighting and warming, water-supply, the mains in the streets, and another dealing with the details of the laying on of hot and cold services to buildings. The water being laid on to the various sanitary fittings, these are next dealt with, together with their outlets and waste-pipes. Then follow chapters covering the drainage of various kinds of buildings, with examples of drainage plans, sections, etc.; sewerage and sewage disposal, as affecting both large and small communities.

The importance of a knowledge of the materials used in sanitary work is not overlooked, and a chapter is devoted to it; similarly with sanitary surveys and reports, examples being given. A further chapter deals briefly with refuse disposal, cleansing streets, disinfection, and smoke abatement, and the work is completed by a chapter on the law affecting the most important branches of sanitation, incidentally dealing with no less than thirty-five legal decisions.

There is a good index; if a little prolix, as we have hinted, the author is lucid, and we can recommend the volume to all interested.

* Drainage and Sanitation. By E. H. Blake, F.S.I., &c. London: B. T. Batsford. 10s.

CHIPS.

Plans prepared by Messrs. Gibbs, Flockton, and Teather, of Sheffield, have been adopted for a new quadrangle at the Sheffield University in Western Bank.

A new grammar school is in course of erection at Stockport from plans by Messrs. Spalding and Theakston, of King-street, E.C. The builders are Messrs. D. Eadie and Co., of Stockport.

The Kent County Council have approved the widening of part of the main road from Chatham to Maidstone, at an estimated cost of £423. Towards this sum the Road Board will contribute £317, and the county council will pay half the balance.

Mr. Andrew G. Merrilees, late burgh surveyor and sanitary inspector of Denny, has been presented with a gold albert by the town council and officials on the occasion of his leaving to take up a similar position under the North Berwick Town Council.

The Wakefield Corporation have resolved to apply to the Local Government Board for sanction to borrow £22,792 for a supplementary water main from Balne Lane to Waindyke, to improve the supply of water to Castleford, Normanton, Featherstone, and other districts.

To the Keighley Town Council, on Tuesday night, the town clerk reported that the Local Government Board had sanctioned the borrowing of £2,587 for the purchase of lands near Lower Holme Mill and Castle Mill for allotment gardens and approaches, and £63 for fencing.

A Local Government Board inquiry has been held at Oldham into an application of the Corporation for permission to borrow £1,635 for the purchase of property and the erection of firemen's dwellings in Chapel-street. The architects are Messrs. Winder and Taylor, Union-street, Oldham.

A New York State College of Forestry building is about to be added to Syracuse University, near Mechanicsville, N.Y., from plans by Mr. Frederick W. Revels, professor of architecture at the university. The Legislature has approthe north nave aisle and south porch will be begun this autumn.

The roofs of the parish church of North Mimms have been stripped and retiled. The timbers which were defective have been replaced, and the whole has been rebonded. The indoor tracery has been restored, and other repairs executed. The contractors were Messrs. Cornish and Gaymer, of North Walsham, and the outlay has been about £1,000.

Good progress is being made with the rebuilding of the first section of St. Martin's Church, Overstrand, near Cromer, which has long been in ruins. It consists of the nave and the strengthening of the tower at the west end, and will cost £3,250. The second section will include organ-chamber, vestries, and heating-chamber on the north side of the chancel, and after that the north-west aisle and south porch will be undertaken.

The foundation-stone of the new Church of St Mary Magdalene, Winton, near Worsley, was laid on Tuesday by the Earl of Ellesmere. The architect of the new church is Mr. R. T. Beckett, of Chester, and the style is a free rendering of the Perpendicular. The whole design is not to be carried out in the first place, but eventually the church is intended to accommodate about 600 worshippers. The portion of the fabric to be now erected, which will be built of Runcorn stone, will accommodate about 350, and the cost is estimated at £6,500.

At Bishop Auckland, on Tuesday, Mr. R. H. Bicknell, M.Inst.C.E., Local Government Board inspector, held an inquiry into an application on behalf of the urban district of Bishop Auckland, the townships of Auckland, St Andrew's, Binchester Coundon Grange and Newton Cap, and the parish of Pollard's Lands, for consent to borrow £2,710 to defray their respective proportions of the cost of the extension of the existing joint burial-ground. Mr. J. T. Proud (clerk to the Bishop Auckland Burial Board) explained that the extension proposed was 9 acres, 19 perches, and 16 square yards. There was no opposition.

OBITUARY.

The death occurred on Thursday in last week, at his residence in Albert-place, Kensington, of Sir Frederick Alexis Eaton, who had been secretary of the Royal Academy since 1873. He edited several of Murray's Handbooks, and was joint author with Mr. J. E. Hodgson, R.A., of "The Royal Academy and its Members, 1768-1830." Sir Frederick, who was knighted two years ago, had been a widower for the past twenty years and leaves no family.

Mr. A. W. Lewis, of London, has been appointed by the Cullen Town Council chief engineer in charge of the harbour extension works, in succession to the late Mr. W. T. Douglass.

At Tumble, Carmarthenshire, a new council school, built from plans by Mr. W. Vincent Morgan, at a cost of £4,000, has just been opened. The builder was Mr. Thomas Morgan, of Tumble.

Mr. C. Whitworth, sanitary surveyor and inspector nuisances to the Melton Mowbray Rural District Council, has resigned in order to take up the appointment of sanitary surveyor and inspector of nuisances to the Spilsby Rural District Council.

The Secretary of State for India has selected Mr. J. Oliphant Foster as assistant architect to the Government of India, in place of Mr. Ernest Montague Thomas, L.R.I.B.A., who has been deputed as consulting architect to the Government of Madras.

The Local Government Board have given authority to the corporation of Sheffield to prepare a further town-planning scheme under the Housing and Town Planning Act, 1909. The scheme now authorised to be prepared relates to an area of 1,619 acres situate at Ecclesall, Abbeydale, and Norton Woodseats within the city.

The town clerk of Salford has received a letter from the Local Government Board stating that the Board, having carefully considered the report of their inspector, are prepared to sanction a loan for the acquisition by the Salford Corporation of land at Rose Hill, Marple, as a site for a sanatorium for the treatment of cases of turberculosis.

The annual sports of the Architectural Association Athletic Club will be held on Saturday, October 4, on the club ground at Elstree, beginning at 2.30 p.m. There will be a display of hammer and discus throwing under the management of Mr. F. A. M. Webster, of the Amateur Field Events Association. Mrs. Curtis Green, wife of the president of the association, has kindly consented to give away the prizes.

The work of enlarging, restoring, and beautifying the church of St. Margaret, Drayton, Norfolk, has been steadily carried on since Canon Spencer became rector. From 1906 to 1911 the sum of £1,350 has been spent in repairing the fabric, providing additional seating accommodation, and introducing a new system of heating and lightning. An organ chamber was recently erected on the north side of the chancel, at a cost of £220, and is now occupied by a two-manual instrument built by Messrs. Norman and Beard, of London and Norwich.

All Saints' Church, Southampton, which has been undergoing extensive repairs and redecoration, was reopened on Sunday. The chief improvements are a new colour scheme, the enlargement of the choir vestry, the utilisation of the space formerly occupied by the organ in the west gallery for a morning chapel, and the placing of a picture at the east end of the church. Mr. E. Brantwood Maufe, Lincoln's-inn, W.C., was the hon. architect. The contractor has been Mr. W. A. Fussell. The painting at the east end depicts the "Good Shepherd" scanning the hillside for the "Lost Sheep" as the shades of evening begin to fall. It is the work of Miss Lilian Lancaster, of London.

A stained-glass window has been placed in the south aisle of St. Mary's Church, Lichfield. The theme is the Pilgrim. A youthful warrior, in an attitude of worship, clad in armour, is depicted with an empty scabbard by his side. The right-hand light contains the figure of a militant companion and an angel who is supporting the robe of the Saviour. The Christian's Strength occupies the centre light. The background is composed of the River of Life, the Vision of the Heavenly City, from whence are issuing the "Shining Ones" and the Heavenly host. The work has been executed by Mr. T. F. Curtis (Ward and Hughes), 67, Frith-street, Soho-square, W.

Currente Calamo.

The corporation of Burnley seems to have arbitrary ideas about its rights to dictate to property owners which are not encouraging to architects and builders within its jurisdiction. Mr. J. F. Lancaster, Lic.R.I.B.A., architect and surveyor, became the owner of premises in Engine-street in December, 1912, when, as dwelling-houses, the property had been closed pursuant to an order obtained by the corporation. When Mr. Lancaster acquired the premises he had not, and has not now, any intention of using them as houses. His intention was to convert them into warehouses or store-rooms not habitable. He submitted a plan to the corporation, showing the removal of the division walls, etc., the plan also showing the intention to build over the site of Engine-court a similar warehouse of two floors, with an entrance also from Engine-street. The corporation on May 17 last disapproved of the plan on the ground that it showed "an intention to build on a highway." No mention was then made of demolition of the former houses. Mr. Lancaster denies that Engine-court is a public highway, but without prejudice to that he submitted a further plan showing Engine-court left open. This was, however, disapproved on August 14 on the ground "that it shows an intention to retain and alter buildings in respect of which demolition orders have been made under the Housing and Town-Planning Act, 1909."

It was only after the first plan had been submitted that Mr. Lancaster received a notice from the corporation of their intention to consider the making of an order for the demolition of the "dwelling-houses." As these were never intended in the future to remain dwelling-houses, and the plan explained as much, this action seemed unnecessary and arbitrary. Mr. Lancaster next attended before the health committee and fully explained that it was intended to use the property for commercial purposes only, and for which they could be easily adapted. He strongly objected to the demolition under the circumstances. The solicitors who had the matter in hand when the closing order was made stated that they had never heard of a "demolition order," and that under the circumstances the opposition to alterations was "a most iniquitous proceeding." No allegation has been made that the buildings, used as warehouses or storerooms, would be a nuisance or dangerous to health, and yet the corporation insist that the property must be demolished.

Surely this action of the corporation of Burnley is as high-handed as it is ridiculous! To close houses unfit for human habitation is legitimate enough. But to prevent the owner from altering them to warehouses or storerooms, on the strict understanding that there shall be no habitation, is certainly unjust, if no sanitary or similar reason is not forthcoming. The case is aggravated by the fact that not only is this objection made, but the corporation are insisting on the property being demolished, thus putting the owner to the expense of rebuilding, although the property will not be used at all for dwelling houses. So serious a matter for property-owners generally is it that we hope the attempt will be resisted. Unless there are very serious reasons for insisting on the demolition of property, an authority ought not to compel anyone to pull down and rebuild when, by alterations, houses are utilised for commercial purposes, and we shall be surprised to hear that the Courts endorse such unreasonable demands. We know of no precedent by which such action can be sustained.

The great fall in rental values that has taken place almost everywhere is serious for all owners of property. But it is upon leaseholds that it comes most heavily, and, apparently, most unfairly to those who do not understand. Of course, the reason is that ground-rents, which were fairly fixed at one-fifth of the rack-rentals when the houses were new—say fifteen years ago—are now out of all proportion to the rents that can be obtained. Take a leasehold house letting at £50 when bought new of its owner, with a ground-rent of £10. Say this rent is now £40, and at once the proportion is all wrong. When, therefore, a buyer comes along it is not only that the lease is, say, fifteen years shorter than when the vendor bought, but there is that ground-rent of £10 to be faced, with a great probability that the rack-rent will go still lower. For ground-rents never fall and cannot be reduced, and so it is that "good leasehold investments," especially in private dwellings and in some localities, are now turning out to have been such bad bargains.

So many people nowadays are seeking to sell their houses, which they bought in better times and at better prices than they are likely to get again, that the artful dodgers who are always with us are finding the fact a means of raising money. So we see an old man recently charged at Croydon for obtaining small sums by false pretences. A lady at Norwood wanting to sell her house, the prisoner called to "view the property." No doubt he soon agreed to a fair price and expressed his intention of buying. Then, under some excuse, he borrowed a few shillings for a pressing need, and somehow he actually did the same trick several times, raising £1 17s. 6d. out of this house-owner. Then she grew suspicious and gave him into custody. At the court it turned out this was not the only charge, for it seems the old gentleman had, in the same way, "borrowed" 5s. from a builder who was negotiating with him to sell a house, and who we would have expected to be more wary. This novel enterprise in exploiting the desire to sell houses is now stopped for a time with a sentence of three months' imprisonment.

School competitions have a rather bad name this side, but we are hardly so sure as our good contemporary the American *School Board Journal* seems to be, that competition scandals in the United States will be bettered by such a contribution towards better methods as it details in its last issue. It is called the "Invitation Method." This is the little catechism the City of Parkersburg, W. Pa., is sending out to architects:—

THE INVITATION.

1. The city of Parkersburg has voted 300,000dol in bonds for improvements in its public schools.

2. It is intended to expend about 225,000dol of this amount for a high-school building.

3. The board of education desires to secure the services of a competent architect, and this notice is sent to you for the purpose of inviting you to appear before the board on July 10, 1913, if you desire to be considered in connection with the architectural work of this building.

4. The board has, in a preliminary way, decided on the kind of building that will meet the requirements.

5. Preliminary sketches for the proposed building are not desired at this time. The board expects to select the architect who is best qualified to do the work.

6. If you appear before the board on the above date, the board would ask you to be prepared to answer the following question:

7. How long have you been engaged in your profession as architect?

8. What has been your training, and experience? Including in this question the board desires information as to what buildings you have designed, including buildings other than school buildings.

9. The board would be pleased to see photographs of one of the more important buildings which you have planned and erected.

10. Give the approximate cost of the various structures which you present as examples of your work. Also state the names of the general contractors for such buildings, and state whether or not you had charge of the supervision of the construction.

11. Give an outline of your methods of doing business, how your plans are prepared, how detailed, how many copies of plans you furnish. Submit samples of working plans, details, and specification of at least two jobs.

12. A brief reference to your methods of handling work would be desirable.

13. What are your facilities for handling work of this kind? Have you in your employ competent designers and engineers and building superintendents?

14. Give such other information as you yourself would like to have if you were about to employ an architect for a building of this kind.

15. The above information should be submitted in writing, which should be left with the board; but the board desires you to appear personally at the above date if you are interested in this work.

16. After the board has decided on the architect to whom it thinks this commission should be given, it will expect him to prepare preliminary sketches of the proposed building and develop such sketches until a satisfactory plan has been evolved. Should the architect appear to the board to be incompetent to prepare plans for the kind of building desired, then the board would expect to be at liberty to take the matter up with some other architect, and would be under no obligation to the first party.

17. The architect chosen for the work will be expected to enter into a proper contract with the board. The fee for full professional services will be —— per cent. Other conditions of the contract will be in accord with the usual practice, and must be satisfactory to the board.

18. After you have appeared before the board on the above date and have submitted to it in writing the information requested, the board expects to make a thorough investigation of all applicants before calling in one of the number to prepare preliminary plans.

Clause 14 probably includes the colour of the architect's whiskers, the date of his vaccination, the name of the particular brand of lager he fancies, and unconsidered trifles of that sort. Clause 16 is possibly a dodge for obtaining plans gratis successively from all the architects who respond, and "combining the information."

The statistics of the British trade-union movement, now in course of compilation, show that in the last two years, while trade-union membership has increased by over one million, accumulated funds have shrunk from £8,000,000 to £6,000,000, a decline attributed to the abnormal strikes of the last two years. Fortunately, our own trades have to no great extent shared in the troubles which are slowly depleting the resources of the trade-unions to benefit agitators and bring in the weak and comparatively unskilled workers to be a burden on the funds of the rest. Nobody will regret more than we shall if "Syndicalism" succeeds in forcing by "Federation" the stable and sensible unions to "hold the baby" of the blacklegs, whom the self-interested and short-sighted agitators want to coerce into organisation they are incapable of, and to saddle their more prudent and provident brethren with the cost of subsidising their own laziness and inefficiency.

The great pressure exerted by the expansion of wood when soaked with water has been illustrated during the flood at Dayton, Ohio. A quantity of oak dashes veneered with maple were stacked to within one inch of a reinforced-concrete girder in the basement of the factory of the Maxwell Motor Car Co. This girder had a cross-section of 12in. by 19in., and supported a 6in. reinforced-concrete floor. The basement

was flooded, and after the water receded it was found that the girder, together with the concrete floor which it supported, had been lifted 3in. Ten weeks after the flood the girder still rested on the dashes, but it had settled about ¾in. Large cracks developed in this girder, starting at the edge of the pile of dashes and extending upward and outward. These cracks extended from the bottom to the top of the section at an angle of about 30deg. with the horizontal. It was necessary to replace this girder and a section of the floor.

The salary of Mr Sholto Douglas, surveyor and sanitary inspector to the Kenilworth Urban District Council, has been increased by £40 per annum.

A Congregational school-chapel, built at a cost of £2,520, has been formarlly opened at Wigan. Mr Silcock was the architect, and Mr. Dolan the contractor.

A faculty is sought by the churchwardens of St. Mary's Church, Putney, S.W., for the erection of a vestry at a cost of £1,000, and extending the chancel and reconstructing the organ at an outlay of £2,000.

In the erection of King's College Hotel, St. Vincent-square, illustrated last week, the constructional part of this building was on the design of the Trussed Concrete Steel Co., Ltd., and built in the Kahn system.

Shoeburyness Urban District Council has under consideration the provision of a harbour and quay for a fish-market on the foreshore, at a cost of £90,000 estimated to produce a revenue of £10,000 per annum.

Mr. J. M'C. Lyons, B.E., has been appointed surveyor to the county council of Louth. He was trained in his father's science classes at the school of Civil Engineering, Dublin, and has since been assistant surveyor for Co. Louth.

The Acting British Consul at Colon (Mr. J. R. Murray), in his report on the trade of Panama in 1912, states that a proposal has been made to construct a large private hotel in Panama City, and a preliminary contract has been made by the Government with British capitalists.

In connection with the proposed approach to the Great Central Station from the centre of Sheffield, the city engineer, Mr. C. F. Wike, has prepared a scheme for covering over the River Sheaf at an estimated cost of £10,439, and he has now received instructions to proceed with the work.

The remains of Mr. Thomas Corkhill, who passed away on the previous Sunday at his son's residence, 3, Jubilee-avenue, Broadgreen, at the age of 69 years, were laid to rest on Friday in West Derby Cemetery. Mr. Corkhill was for many years on the building surveyor's staff of the Liverpool Corporation.

A riverside promenade is about to be provided at Newport, Mon., by the construction of an embankment and wall on the bank of the Usk. The wall will be built with ferro-concrete on the Hennebique system, from designs by Mr. H. Tremmelling, the borough engineer. The contractors are Messrs. Cowlin and Son, of Bristol.

The Lord Mayor will lay the foundation-stone of the new building of the Institute of Marine Engineers at the corner of the Minories and Tower-hill, on October 29. The premises are being erected from designs by Mr. Victor Wilkins, of York-buildings, Adelphi, and were illustrated by plans and double-page perspective in the BUILDING NEWS for December 6, 1912.

The Admiralty have recently taken over the new high explosive magazines which have been built at Berenham, in the upper reaches of Portsmouth Harbour, at a cost of £100,000. The magazines have by extensive dredging been made accessible by warships, and a railway has been constructed connecting the place with the Stokes Bay shore.

An inquiry has been held at the urban district council offices, Ham, by Mr. Thomas Adams, an inspector of the Local Government Board, into an application by the Ham Council for authority to prepare a town-planning scheme, by which it is sought to preserve the amenities of the river-side extending from below Twickenham Ferry to the Kingston boundary, a distance of three miles. There was no objection to the scheme as a whole, but the Dysart Trustees thought the riverside land on the opposite bank at Teddington should be scheduled so as to preserve the amenities on both sides of the river.

Intercommunication.

GUINEAS FOR BEST REPLIES.

We offer a prize of one guinea every week for what we deem the best reply to any query appearing in this column.

Replies must be sent in over real name and address. No others can receive a prize. The Editor's judgment is final.

This competition is restricted to buyers of the paper, and with each reply a coupon cut from our front page must be enclosed.

Any number of replies can be sent, but a coupon of this date must accompany each.

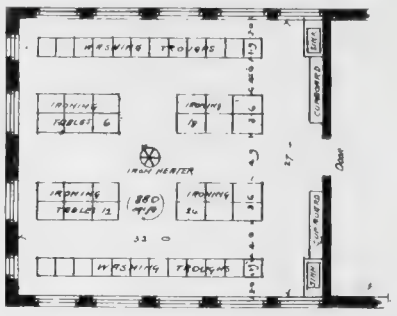
All else being equal, brief replies will stand the best chance. We emphasise this, as some correspondents ignore the fact that querists want terse facts, not long essays. Any necessary illustrations must be in line only—no tints or washes—and about twice the size they are meant to be reproduced. We are unable to avail ourselves of replies that contain illustrations unless we receive them by first post on Tuesdays.

The right to withhold the prize in the event of no reply being received worthy of it is reserved by the Editor, who also claims the right to publish any other replies he may deem useful.

We award the guinea to Mr. C. Hoffmann.

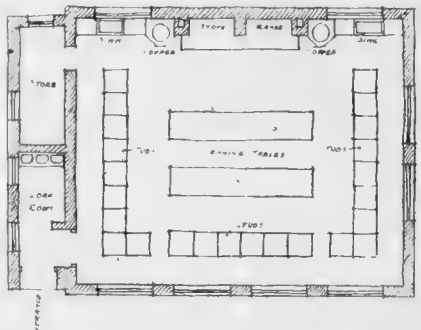
REPLIES.

[1331.] SCHOOL LAUNDRY CLASS ROOMS. Replying to "Educationalist," submitted is a sketch for the arrangement of a small laundry for class teaching. The tubs and ironing-tables are arranged in two rows with a centre gangway, enabling the instructress to have full control and constant observation of the pupils. Whilst the notes thereon make the sketch comparatively clear, a brief description may help to a greater extent. The approach to the laundry class-room from the main building is through a corridor, an open lobby preventing any steam entering the corridor from the laundry, and an emergency exit is provided in the furthermost corner. For boiling purposes a copper is provided with a rinsing trough adjoining, as in this case it would be inadvisable to introduce steam boiling to the tub-ranges as is sometimes done. The stoking of the copper, together with that of the boiler, takes place in the heating chamber, thereby keeping all dirt occasioned by fires away from the laundry. The drying closet, with sliding horses, is heated from the boiler, which also provides water for the tub-ranges, a service being brought along the back of each range or the scholars'? For laundry purposes no light is so good as the direct front light, therefore the children must have that light on their work. Top light casts shadows downward, so that will not do. Place the

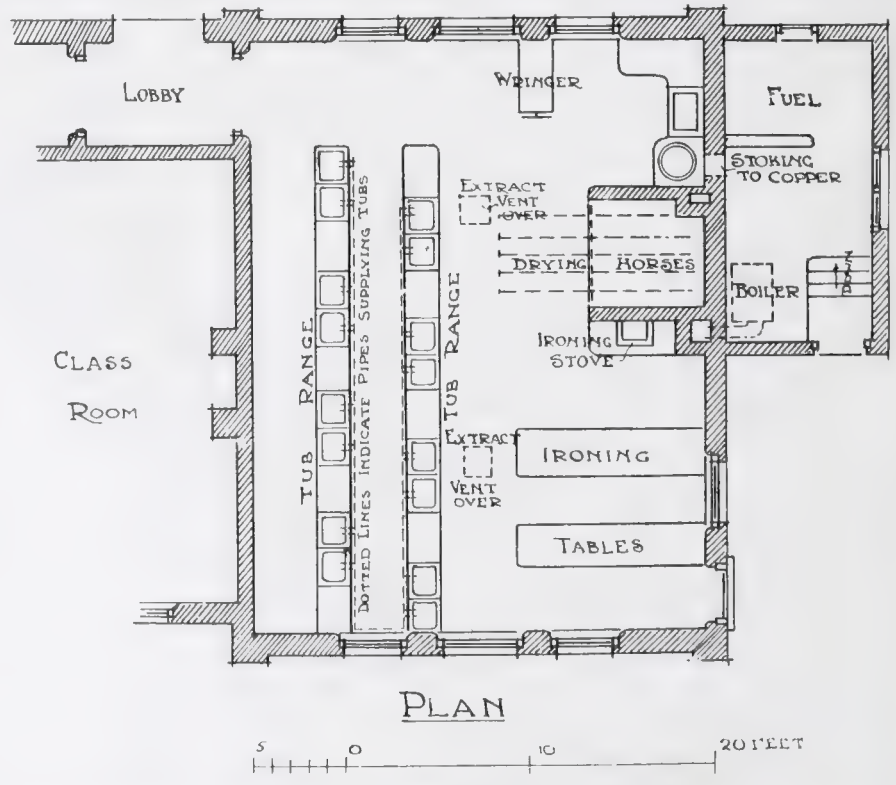


washing-troughs, therefore, along the window walls, with a supervising passage if money will allow. This passage, however, will raise the super. area per child above the Board of Education's allowance. Sketch herewith.—Frank Wilson, A.R.I.B.A., 225, Nottingham-street, Pitsmoor, Sheffield.

[1331.] SCHOOL LAUNDRY CLASS-ROOMS.—I herewith submit a sketch-plan of class room for



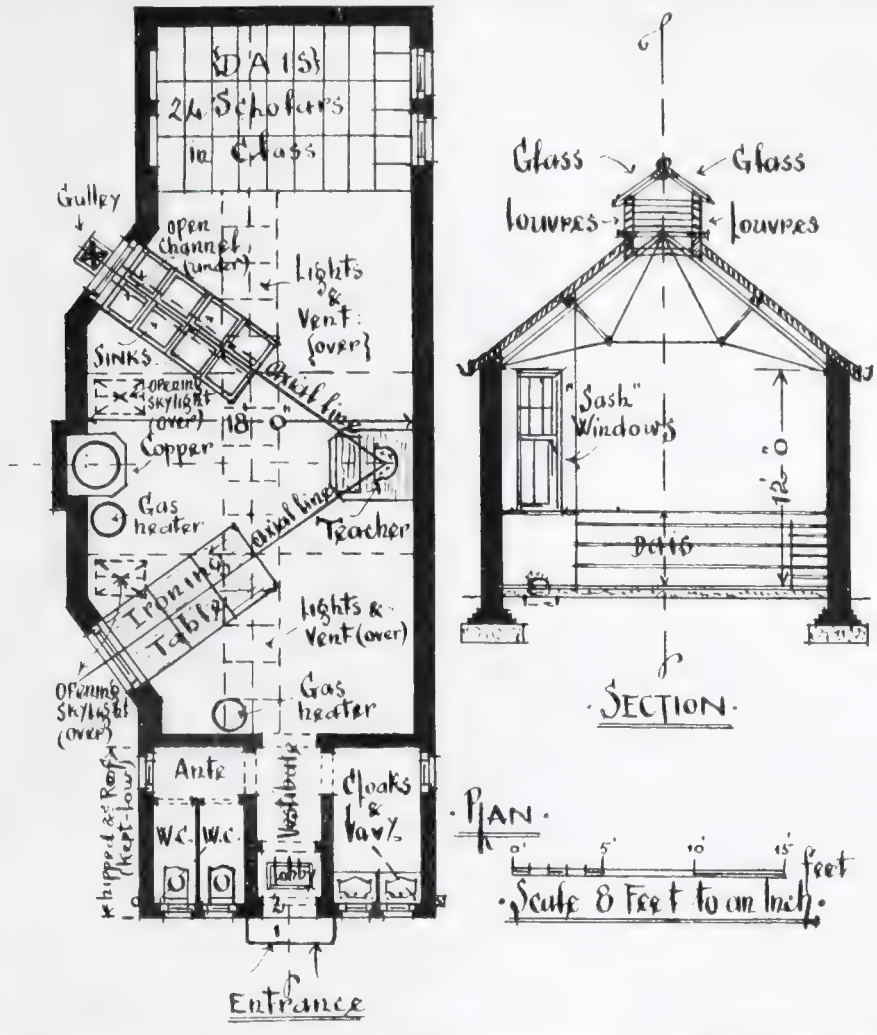
laundry instruction, which may suit his requirements. The plan speaks for itself; but the chief advantages are that, whether washing or ironing, the scholars are always facing the instructor, who can also go round the whole class for inspection without



with draw-off taps provided to each tub, etc., and a similar cold water service. An independent boiler of high efficiency is to be recommended, either with large water capacity or with auxiliary cylinder. The ironing stove, gas heated is placed adjacent to boiler flue, a pipe into the latter carrying away objectionable fumes; in addition two extract ventilators in the roof serve to keep the atmosphere pleasant.—C. Hoffman, 60, Edward-street, Wrexham, N. Wales.

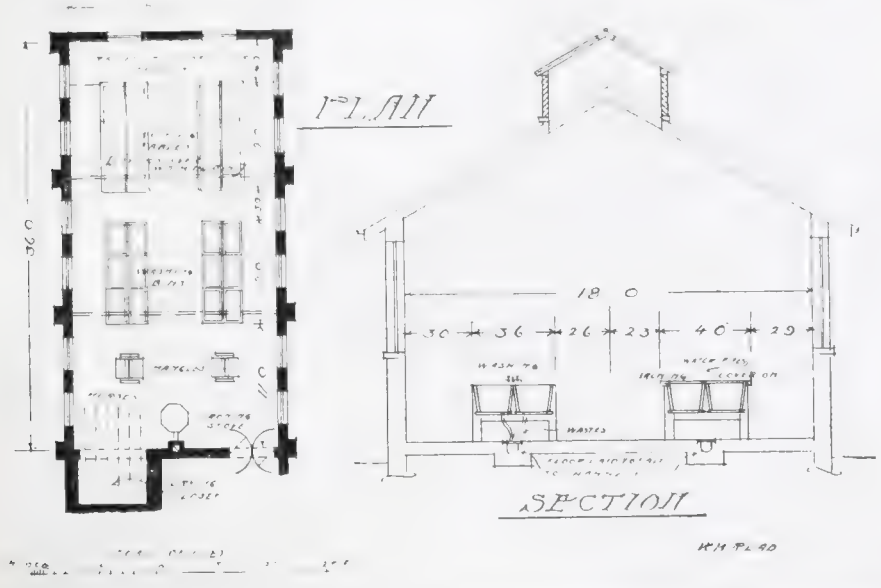
[1331.] SCHOOL LAUNDRY CLASS-ROOMS. Querist will recognise that the crucial question here to be settled is who shall have the light—the teacher being behind the scholars. Of course, the plan could be modified if necessary.—H. Kendrick, Ulverley Green-road, Olton, Warwickshire.

[1331.]—SCHOOL LAUNDRY CLASS-ROOMS. The plan submitted herewith has been designed so that the sinks and ironing-table may be placed axially from the centre of the teacher's dais. By this arrangement easy supervision is ensured, not only over the scholars at the sinks and ironing-table, but during "classes" and over the entrance to class-room. The floor near sinks should have a regulated fall to channel, and the floor and dados constructed of suit-

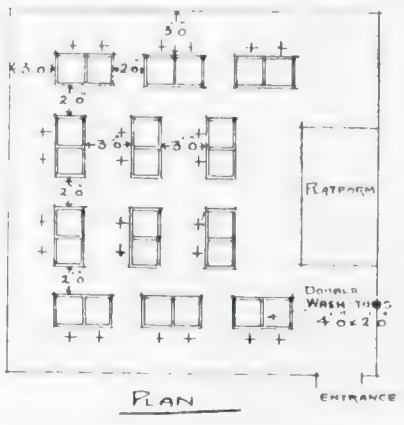


able impervious materials. Special attention should be directed to the ventilation, and provision made for the speedy removal of steam. Volume No. 6 of "Modern Buildings, &c.," by Mr G. A. T. Middleton, A.R.I.B.A., gives some very useful data on laundries and laundry fittings. As this example, however, is merely for 24 scholars, elaborate fittings would not be necessary. Moreover, for ordinary domestic training the sinks and tables, &c., are better if designed on similar lines to those met with in the usual domestic sphere.—A. H. Winterburn, M.S.A., 12, South View, Blyth-road, Worksop, Notts.

1431.] - SCHOOL LAUNDRY CLASS ROOMS.—Laundry work is seldom, if ever, included in the curriculum of secondary schools in this district, the subject generally being provided for after the elementary stage in either the higher elementary schools or in the domestic or home-making centres, added to which it does not seem to be necessary with so many model laundries in the different towns. No doubt the reason for placing the bins against the wall is that it is easier for drainage and water supply, and also better for lighting purposes, whilst for demonstration purposes the gangway would be rather useless, as the teachers and scholars would be opposite handed. Let "Educationalist" try to explain a drawing to an assistant from the opposite side of the table, and then try to show any kind of manual work which may have to be copied exactly, and then he will realise the difficulties. The regulations of the Board of Education require a superficial area of 25ft. super. per scholar, which seems ample if properly arranged. The laundry itself should have windows on opposite sides, and have a louvred lantern for the escape of steam; and as it is not likely to be used continuously, the washing and ironing can be done in the same room, if arranged as shown on the accompanying plan. The classes do not want to be too large for practical work; and as each scholar requires 3ft. of table when ironing, I would suggest that the room be of sufficient size to accommodate 24 scholars, with the bins arranged in four groups, as shown, for easy supervision. The scholars will not be ironing the clothes until they have washed and dried them, an interval being required for this operation. Covers could be put over the bins and kept in position, as shown, thus serving as ironing table. The water tap would hardly be in the way, as the irons used would not be gas heated, and the only apparatus required would be the mangle. The drying closet would be provided more for facility in the work than as part of the equipment of the modern house.—K. H. Read, Lecturer on Building Construction, Gloucester and Stroud Technical Schools.



1431.] - SCHOOL LAUNDRY CLASS ROOMS.—By using double wash-tubs, as shown in sketch, a good deal of space can be saved, and by this arrangement the lecturer can obtain a front view of all the pupils, and can get to any particular one with ease, from the platform. The cross denotes position of pupil at the tub. This same arrangement could be adopted in the ironing room by using double ironing tables.—Ernest E. Sutton, 7, Dagmar road, Alexandra Park, London, N.



Mr Henry Hey, surveyor and waterworks manager to the New Mill Urban District Council has been appointed working surveyor and inspector of nuisances to the Hunsworth Urban District Council.

The thirty-seventh annual Green Book of the Leeds and Yorkshire Architectural Society, just published, states that there is a total membership of 175, of whom 29 are honorary members, 75 members, and 75 associates.

The death took place on Thursday in last week of Mr John William Andrews, J.P., of Ebenezer House, Murston, Sittingbourne, after a few weeks' illness. Mr. Andrews was the chief engineer of a local brick-making and cement firm.

A Local Government Board inquiry will be held at Palmers Green on Wednesday, into an application of the urban district council of Southgate for permission to borrow £7,800 for the extension of the council offices at Palmer's Green.

Sentence was passed at San Francisco on Wednesday in the case in which two citizens of California were brought to trial on the charge of a violation of the White Slave Law by eloping with two schoolgirls to Reno, Nevada. N. J. Diggs, a former State architect for California, who was one of the accused, was sentenced to two years' confinement in a penitentiary and a fine of 2,000dol.

Mr. John B. Thorp, 98, Gray's Inn-road, W.C., is presenting to-day to the Royal United Service Institution a large model he has just finished of the Palace of Whitehall, as it appeared in the reign of Charles I. It has taken a considerable amount of searching to get all the particulars, and the model has turned out well. It is to be permanently exhibited at the Royal United Service Institution (Inigo Jones's Old Banqueting Hall).

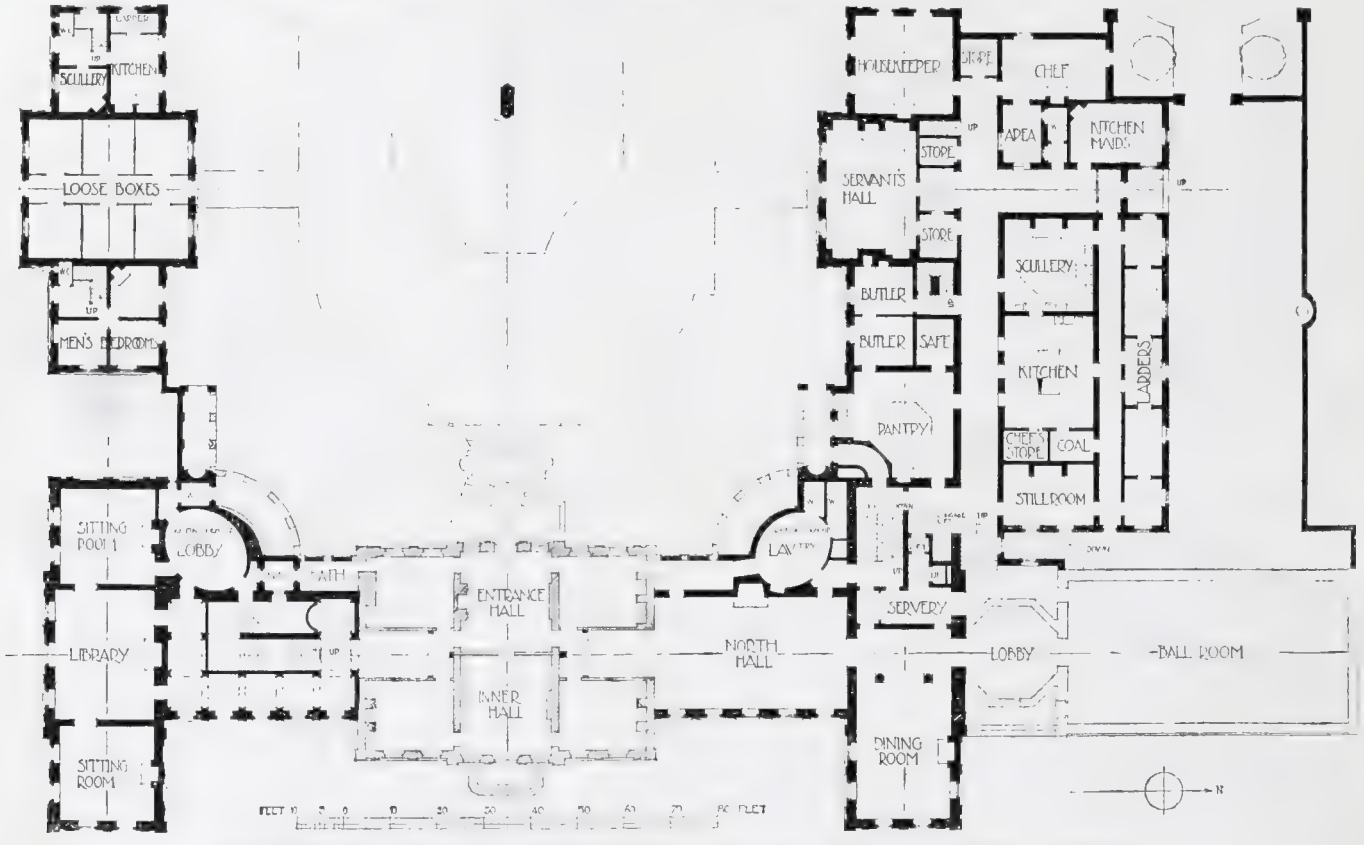
In reference to a paragraph recently published concerning the repairs to the ancient Keep of Farnham Castle, the residence of the Bishop of Winchester, we are informed that the work has been proceeding for some time on behalf of the Ecclesiastical Commissioners, under the direction of their architect, Mr. W. D. Caroë. Beyond the fact that Sir Francis Fox reported on the condition of the structure in December, 1912, he has had no further connection with the work which is in hand.

The new Brighton, Hove, and Sussex Grammar School, erected in the Dyke-road by the corporation of Brighton and Hove and the East Sussex County Council, at a cost of £25,000, was opened on Wednesday. The architect is Mr. S. B. Russell, F.R.I.B.A., of London, and his design was selected in a limited competition by Mr. John Bilson, F.R.I.B.A., of Hull, the assessor. The hostel and headmaster's house, part of the scheme, were illustrated in our issue of March 7 last.

Our Illustrations.

ROEHAMPTON HOUSE, ROEHAMPTON, S.W.

We here reproduce one of the most remarkably interesting drawings shown at the Royal Academy Exhibition this year. It illustrates the extensive work now in course of execution from the designs of Mr. Edwin L. Lutyens, A.R.A. The original portion of Roehampton House, which is shown hatched on the plan, was built in 1712 by Thomas Archer, and is constructed in brownish bricks, with pilaster strips, bands, window aprons, and quoins of red facing-bricks. The centre bays and balustrading are of stone. The small arcades on the west front were built at a somewhat later date than the central portion, and connected the latter to small two-storied wings, which have since been demolished. The new additions, shown black on the plan, now being built, bear out the general character of the old work. The house is approached from Roehampton-lane by a double "lime" avenue, running north and south, and terminating at either end in a lodge and gates. The plan explains the several parts, both old and new, and the perspective view gives the grouping of the mansion towards Roehampton-lane. The length of the building as compared with its height necessitated a very long picture, thus incurring a considerable reduction of the drawing to accommodate it to our double page plate size: otherwise we should have preferred to show the work to a bigger scale. The water-colour itself is handled in a suggestive and masterly fashion; but the sketchy style adopted by the artist does not lend itself to very satisfactory reproduction without colour.



ROEHAMPTON HOUSE, ROEHAMPTON, S.W. Mr. Edwin L. Lutyens, Architect.

CRAIG Y PARC, PENTYRCH.

The house and its extensive gardens are about to be carried out at Pentyrch, near Cardiff, for Mr. Thomas Evans. The site is an unusually beautiful one at the north-east angle of a wooded hill. It has a southern exposure and fine views across valleys to distant hills in every direction. There is a small plateau at the north-east corner where the house is to be placed, and from the plateau the ground falls rapidly to the south. Advantage has been taken of this to form the gardens in a series of four levels, the first of which is occupied by the terrace, the second by the croquet-lawn with semicircular rose-gardens at each end, the third and fourth by a tennis lawn, with wild gardens on each side and the lowest by water gardens. In order to show the plan of the house more clearly we have been obliged to omit the lay-out of the gardens, which are extremely well contrived by the architect. The materials for the house are local stone quarried on the site for the external walling, and old local graded stone slates for the roof. The principal rooms are planned around a cloister, the east and west walks of which are wide enough for open-air meals. The north walk is connected with the hall by a large bay window. The upper part of the east and west sides have been planned in direct connection with the bedrooms, for the purpose of open-air sleeping. The drawing which we illustrate was in this year's exhibition of the Royal Academy. Mr. C. E. Mallows, F.R.I.B.A., is the architect.

MEASURED DRAWINGS OF THE TOWER AND PORTICO OF ST. MARTIN-IN-THE-FIELDS.

ROYAL ACADEMY SILVER MEDAL DRAWINGS.

The Church of St. Martin-in-the-Fields was built on the site of an old church which had existed since the time of Henry VIII. This church being much decayed and in danger of falling, besides being quite inadequate for the increased parish, the parishioners obtained an Act of Parliament for rebuilding it at their own charges. The Commissioners for the erection of fifty churches in London appointed James Gibbs as one of their surveyors, and in this capacity he designed the present church. Several plans were prepared, including a circular one 95ft. in diameter, which was approved by the Commissioners, but laid aside on the ground of expense, although, as Gibbs says, "it was more capacious and convenient than that which they pitched upon." The foundation stone was laid on March 19, 1722, by the Bishop of Salisbury, then Lord Almoner, and the church was consecrated on October 20, 1726; the total cost of the building was £32,000. The interior consists of a nave with galleries round; the ceiling is elliptical, as Gibbs considered this form better for sound than semicircular, though not so beautiful. It is decorated with low-relief plasterwork by two Italian artists, Signori Artari and Bagutti, who were much employed by the architect. Portland stone was used for the building generally. George I. was churchwarden here, and on being elected to this post gave £1,500 for the acquisition of the organ. James Gibbs was born in Aberdeenshire on December 26, 1682, and took his M.A. degree at Mareschal College. He travelled in Italy and studied in Rome under C. Fontana the younger, and returned to England in 1709. He died on August 5, 1759, and was buried in the parish church of Marylebone; a marble bust of him by Rysbrach may be seen in St. Martin's Church.

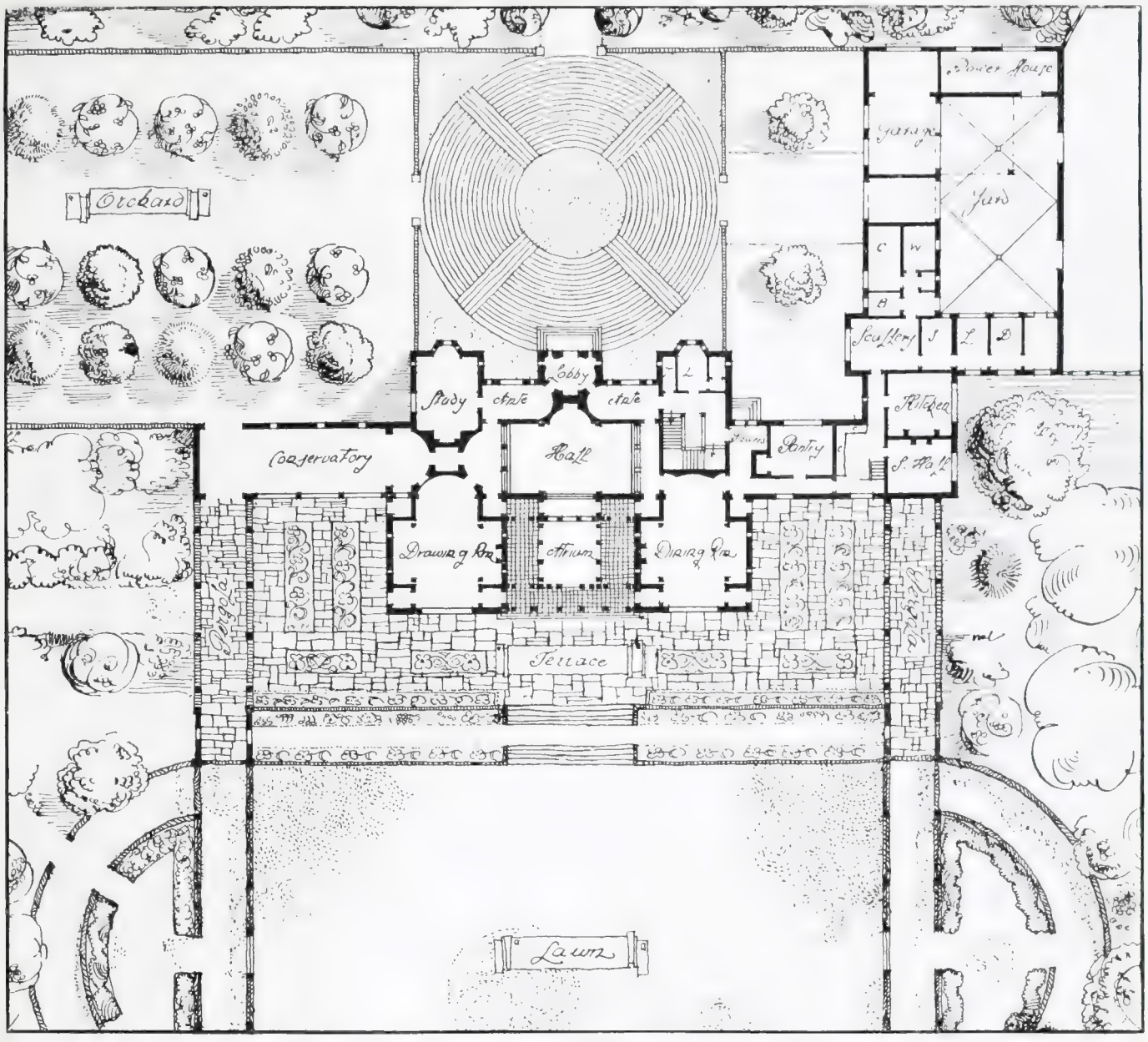
A. Bryett.

DESIGN FOR COUNTRY RESIDENTIAL CLUB, WEYBRIDGE.

(See description on page 396.)

CARDIFF TECHNICAL INSTITUTE.

The building is situated in Cathays Park, on a splendid site having frontages to King Edward VII.-avenue, College-road, and the North-road, whilst the building is set back on the south-east side to allow ample light and air when the vacant plot between it and the County Hall is utilised. The area of the site is approximately 1½ acres. The drawing given was shown at the Royal Academy this year. The building forms, roughly, three sides of a quadrangle (the fourth side being reserved for future extension), and consists of three floors, the lower ground floor (about 5ft. below the road level), the upper ground floor, and the first floor. On the lower ground floor the interior of the quadrangle is occupied by the top lighted workshops, assembly-hall, etc. The main entrance is in the centre of the King Edward VII.-avenue frontage, and leads through the vestibule to the entrance-hall. On one side of the vestibule is the principal's room and on the other the inquiry office, porter, waiting-room, clerks' office, etc. At the end of the entrance-hall, facing the entrance, is the assembly or examination hall, with platform, retiring rooms, and emergency exits at rear, and on either side of the entrance hall are



CRAIG-Y PARC, PENTYRCH.—Mr. C. E. Mallows, F.R.I.B.A., Architect.

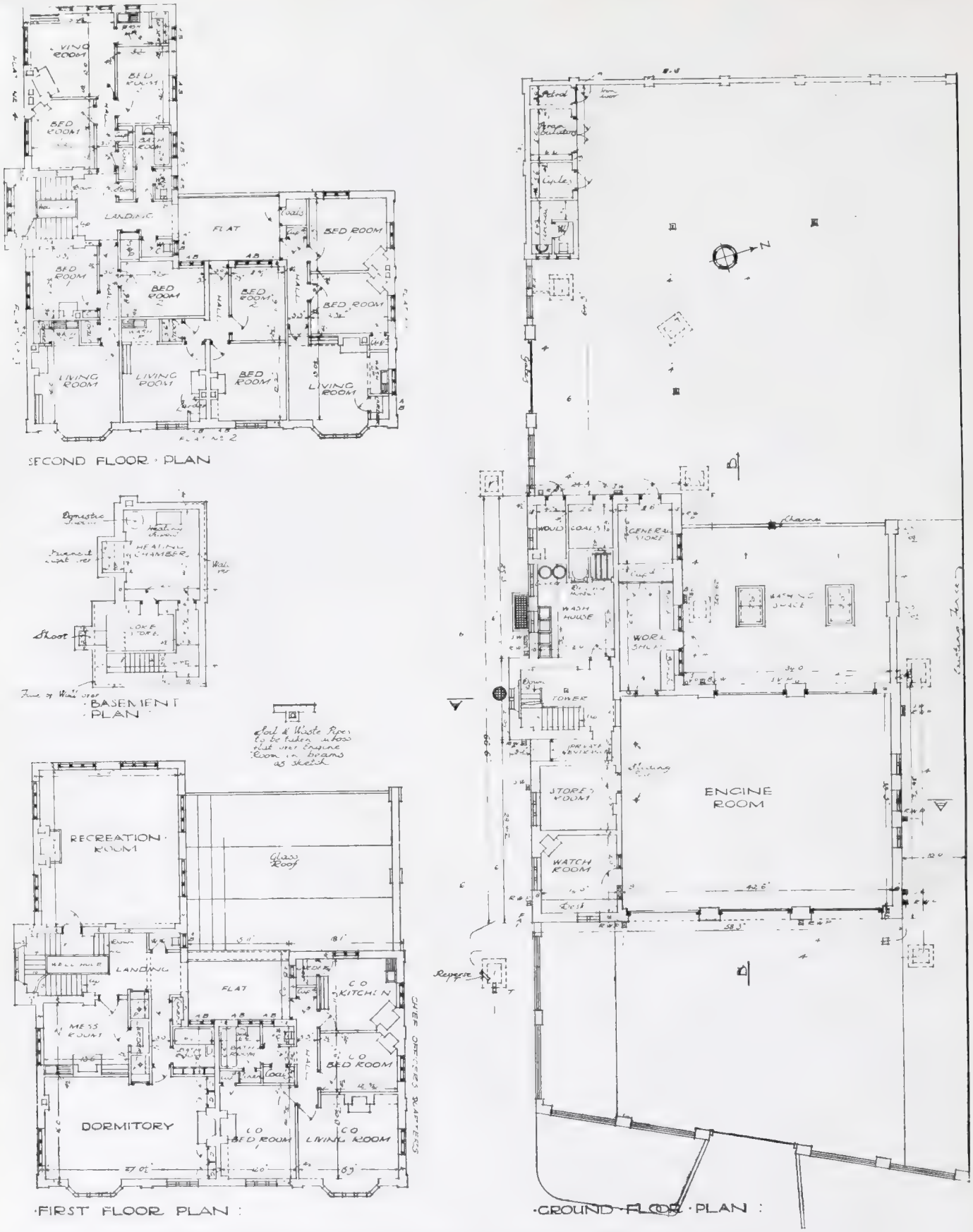
cloakrooms and the main staircases. This hall, etc., floor is almost on a level with the avenue, and short, wide flights of stairs lead down to the lower ground floor and up to the upper ground floor. On the lower ground floor are electricity and magnetism laboratories, dark-room, senior physics laboratory, elementary physics laboratory, mechanics laboratory, electrical engineering laboratory, two classrooms, building trades' lecture-room, architectural and building trades' drawing-rooms, museum for building trades, three engineering drawing-rooms, engineering lecture-room, plan room, two large workshops for mechanical engineering, large workshops for carpentry and joinery, and for plumbing and gasfitting and bakery, together with room for head of department. In the basement are the male students' lavatories, etc. Four store-rooms, large bicycle room (with inclined way from outside), and the heating chamber. On the upper ground floor are rooms for commercial practice, typewriting, five classrooms, four lecture-rooms, one large lecture-room, reference library, students' common-room, male teachers' common-room, female teachers' common-room, room for head of department, male students' lavatories, etc. Lavatories, etc., for teachers are placed on mezzanine floor, between the upper ground floor and the first floor. The lecture-rooms are provided with folding partitions, enabling each lecture room to be converted into two classrooms. On the first floor are the art and chemistry departments, the former containing rooms for drawing from life, antique, design, and art needlework, modelling in clay, casting rooms, painting and decorating, art lecture-room, oil and water-colour, elementary art, and rooms for dressmaking and the women's technical department. The chemistry department contains senior chemistry laboratory, junior chemistry laboratory, chemistry lecture-room, preparation room, balance room, and natural science room. On this floor are also two rooms for the heads of departments, art store, chemistry store, and the female students' cloakrooms, lavatories, etc. The building will be constructed generally of brickwork, the whole of the front and both side elevations being faced with Portland stone. The roofs are to be covered with slates and flats with concrete and asphalte. All floors and staircases are to be of fire-resisting construction, and the floors finished with wood blocks, Terrazzo, or Granolithic. North light is provided for the art department and for the engineering drawing offices. The windows of the upper and lower ground floors are continued right up to the level of ceiling, and top light is provided for most of the rooms on the first floor, with dormers for cross-ventilation to the chemistry laboratories, etc. It is proposed to warm the building with a low-pressure hot-water system of heating, on the accelerated system, ventilating radiators being placed against the outside walls and fitted with regulating valves to control the air supply. The vitiated air will be extracted at the ceiling level and conveyed by flues and ducts formed in the upper part of the corridors to the fan chamber over the main staircase, which will be provided with electrically-driven centrifugal fans, separate fans dealing with the main buildings, the assembly-hall, and the lavatory block. Fireplaces are provided to all rooms for the teaching staff and to the students' common-room and reference library, offices, etc. Messrs. Ivor Jones and Percy Thomas, of Cardiff, are the architects. Messrs. E. Turner and Sons, Ltd., of Cardiff, are the builders, and the cost, exclusive of furnishing and boundary walling, is £43,859.

DESIGN FOR PROPOSED CHURCH, NORTH FINCHLEY.

Messrs. Geoffry Lucas, F.R.I.B.A., and Arthur Lodge, A.R.I.B.A., of 13, Gray's Inn-square, W.C., prepared this design, in conjunction with Mr. John Page, B.A., for the above church. The aim of the promoters of the scheme was to secure a large preaching area: hence the wide nave, which at the same time would enable the building to be erected over an existing iron structure occupying the site. The roof was intended to have steel principals, with a decorated wood ceiling under. A small bell-turret was designed at the west end, in the projecting base of which the font was placed. The drawing was hung in this year's Royal Academy Exhibition.

HENDON CENTRAL FIRE-STATION.

The architect of this building is Mr. Herbert A. Welch, A.R.I.B.A., of New-Square, Lincoln's Inn, W.C., who was placed



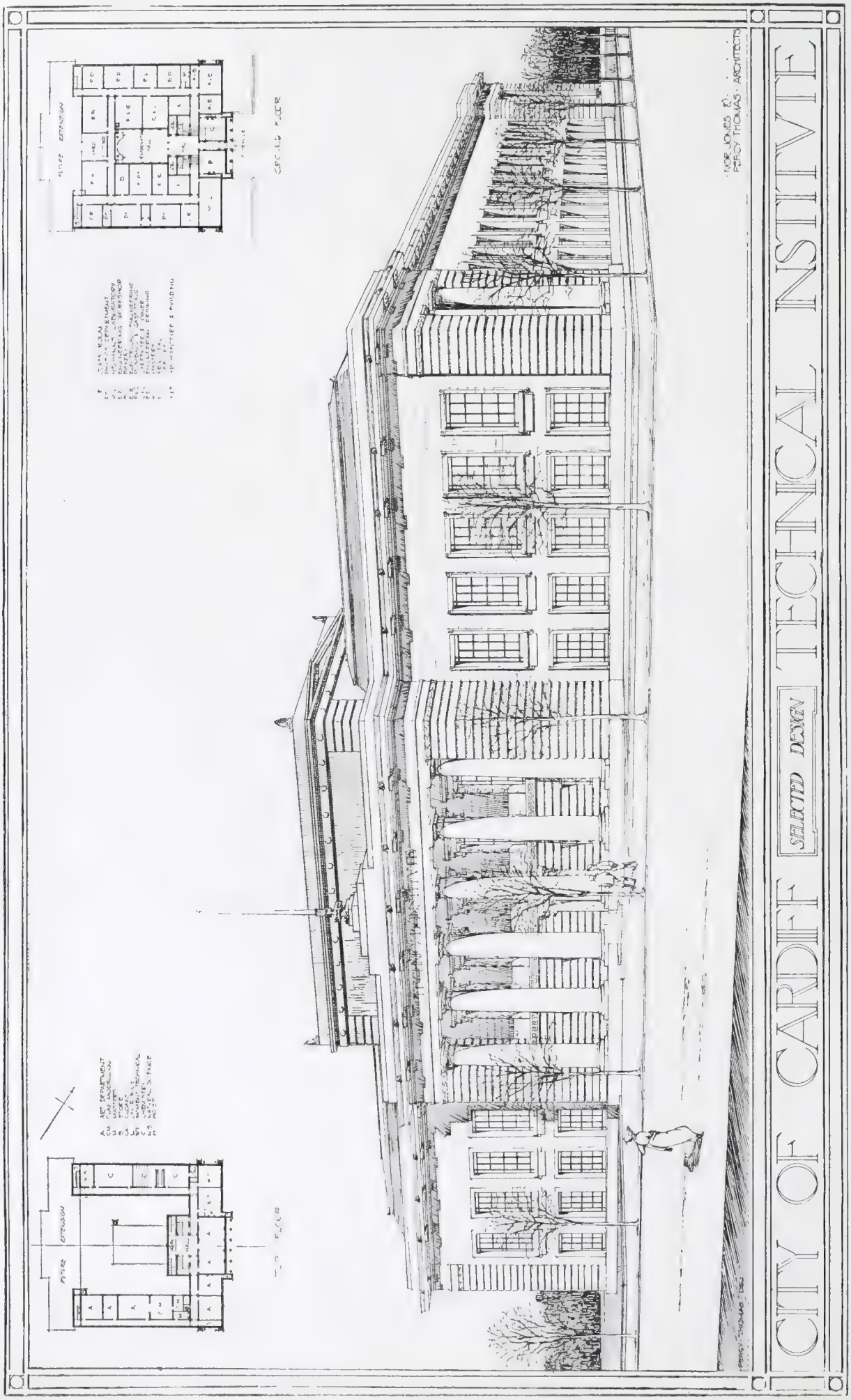
HENDON CENTRAL FIRE STATION.—Mr. Herbert A. Welch, A.R.I.B.A.

first in a limited competition. This drawing was hung at this year's Royal Academy Exhibition. The ground floor consists of engine room (with accommodation for three motor engines), workshop, watch-room, washhouse, stores, etc., with drill-yard at rear. On the first floor, approached by stairs in tower, is placed the recreation-room, dormitory, and mess-room for four single men, with bathroom, w.c.'s, etc., and the chief officers' quarters. On the second floor are the quarters for married men. The tower is provided for the purpose of hose-drying, and serves also as the staircase connecting with the various floors. The elevations, which were required to be in harmony with the adjoining council offices, are executed in Portland stone and red bricks, with iron casements to windows and green Tilberthwaite slates for roof. It is hoped that the building will be completed this year.

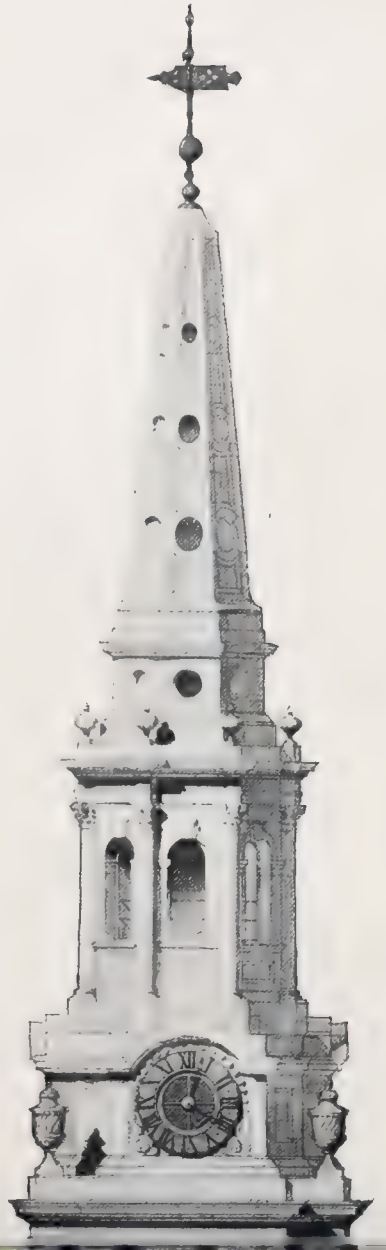
The sorting post-office at Shrewsbury is being enlarged at a cost of £5,000

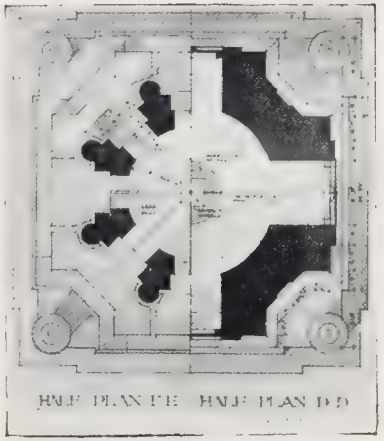
The Trade Commissioner for South Africa has reported that the resident engineer at Table Bay Harbour is in favour of the construction of a south breakwater of concrete blockwork at Algoa Bay. The breakwater would be 8,000ft. long, and would cost about £1,500,000.

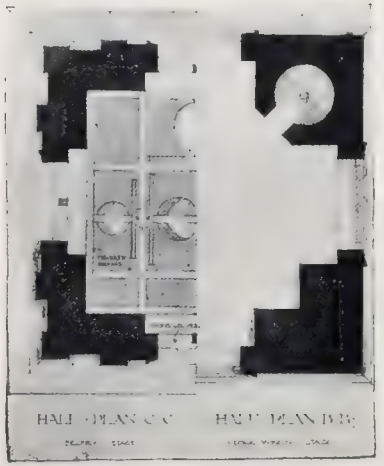
A new Roman Catholic church is being built at Ashby-de-la-Zouche. The site is in Station-road, on the Burton and Ashby Light Railway line. The building will be in the Norman style, of Weldon stone, and is being erected from the designs of Mr. F. A. Walters, F.S.A., Westminster. The estimated cost is £25,000.

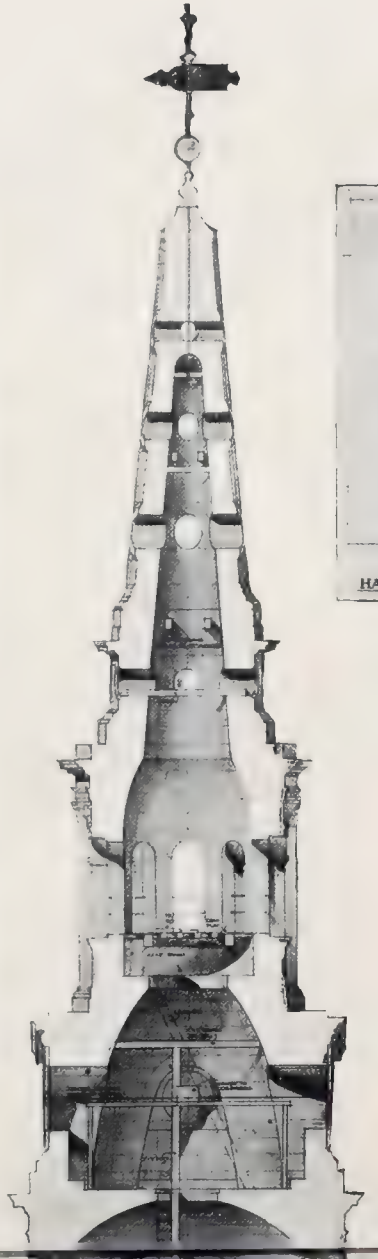


Messrs. IVOR JONES, A.R.I.B.A., and PERCY THOMAS, Architects.

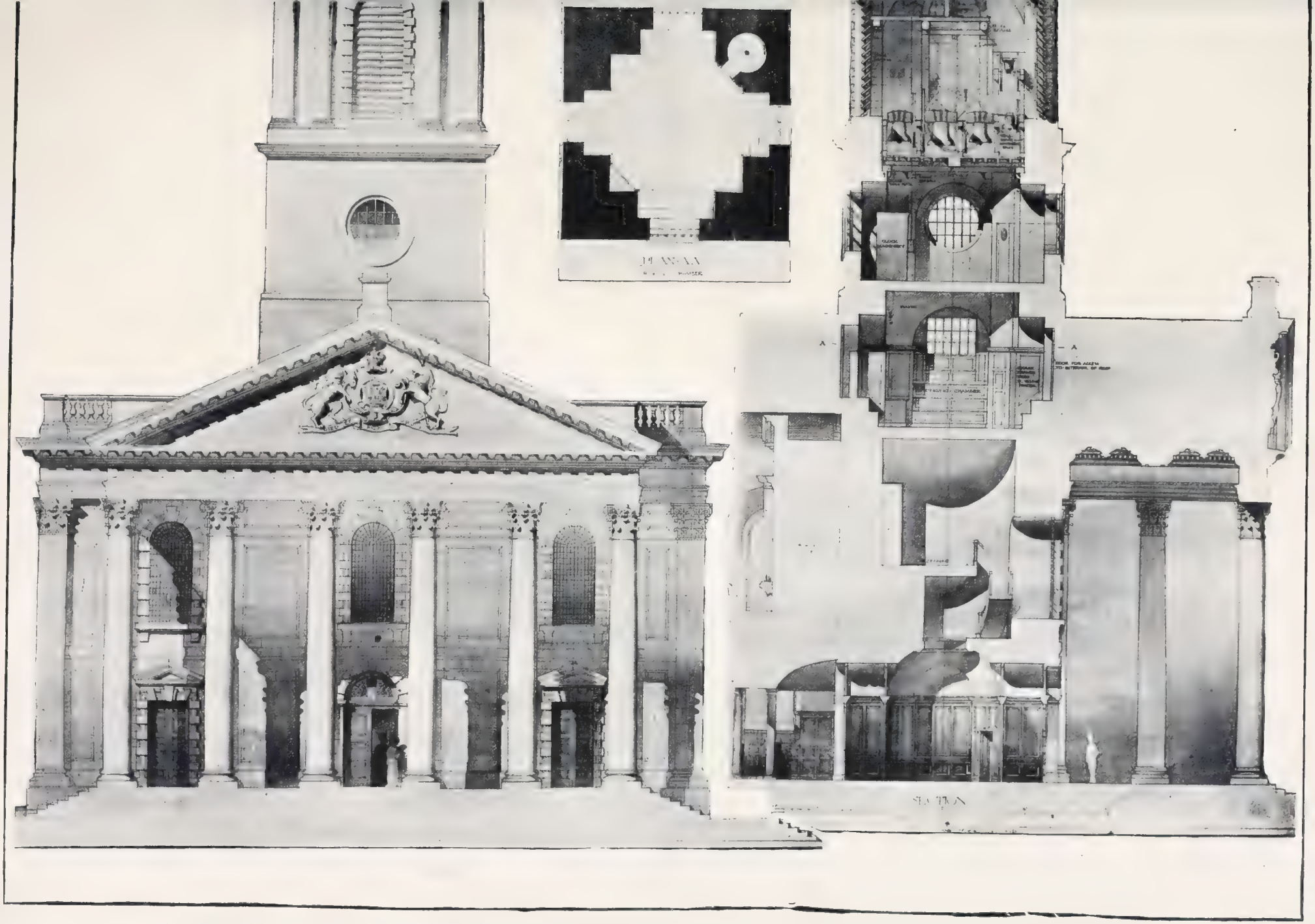



HALF PLAN E-E
HALF PLAN D-D


HALF PLAN C-C
HALF PLAN B-B




HALF PLAN ON TOP
HALF PLAN F-F



TOWER AND PORTICO, CHURCH OF ST. MARTIN'S-IN-THE-FIELDS.—Mr James Gibbs, Architect.
ROYAL ACADEMY SILVER MEDAL DRAWINGS.—By Mr. A. Bryett.





HOUSE AT CRAIG-Y-PARC, PENTYRCH, NEAR CARDIFF: THE ENT

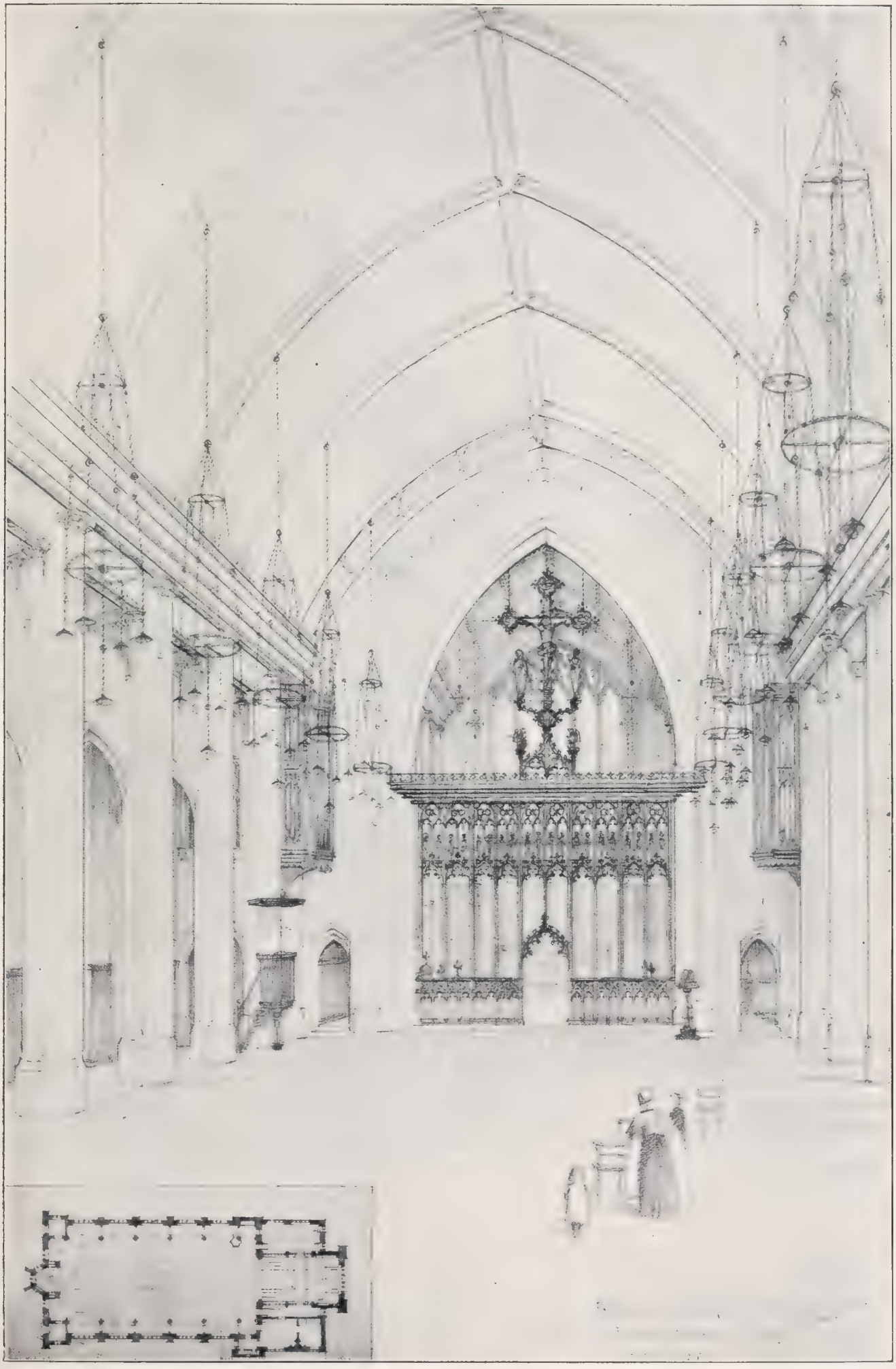
ROEHAMPTON HOUSE, ROEHAMPTON, S.W.: VIEWS TO



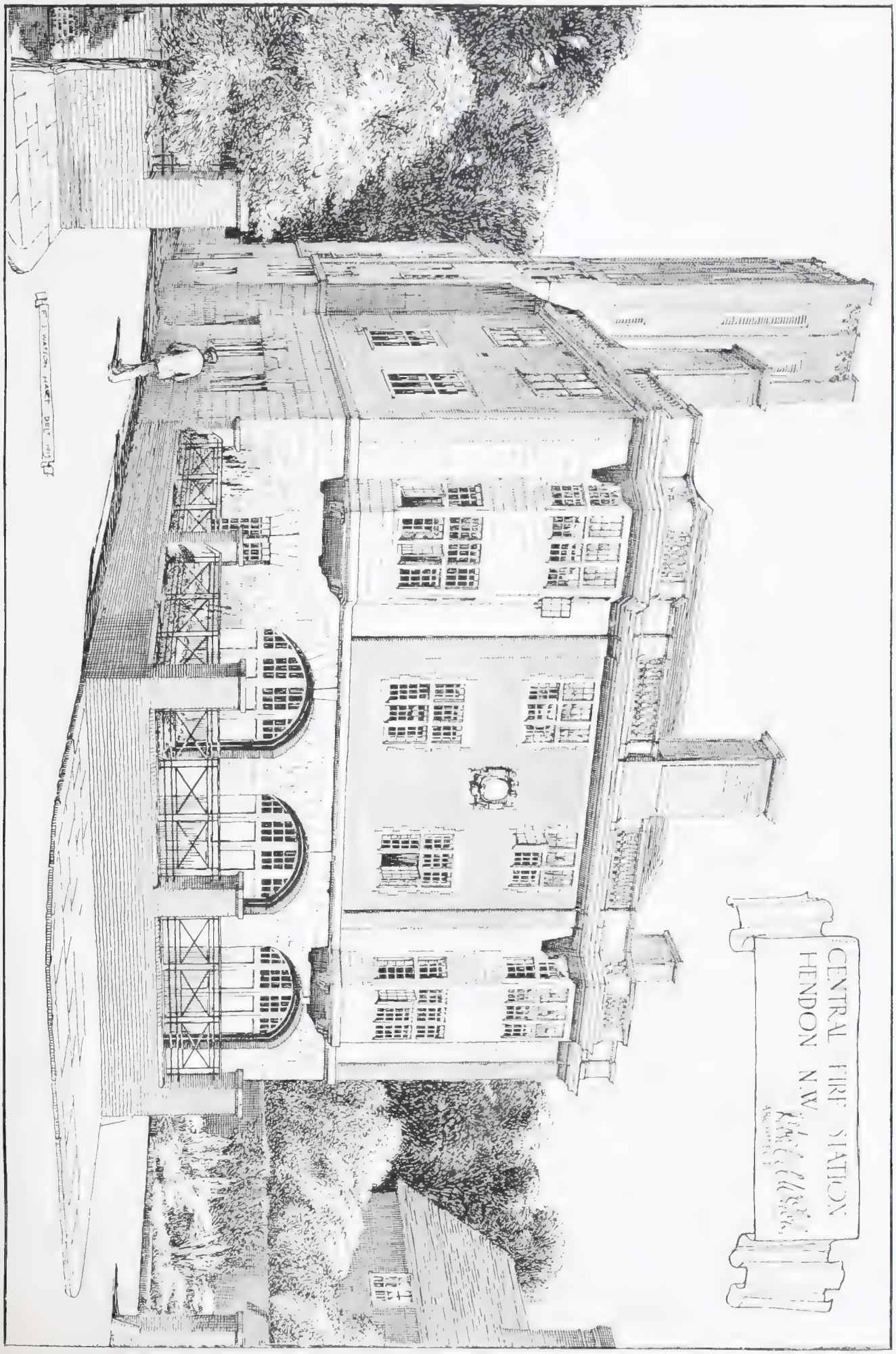
NCE AND GARDEN FRONTS.—Mr. C. E. Mallows, F.R.I.B.A., Architect.
EHAMPTON LANE.—Mr. Edwin L. Lutyens, A.R.A., Architect.



COUNTRY RESIDENTIAL CLUB, WEYBRIDGE, SURREY.—Messrs. Geoffry Lucas, F.R.I.B.A., and Arthur Lodge, A.R.I.B.A., Architects.



NEW CHURCH, FINCHLEY, MIDDLESEX.—Messrs. GEOFFRY LUCAS, F.R.I.B.A., and ARTHUR LODGE, A.R.I.B.A., in conjunction with Mr. JOHN PAGE, Architects.


CENTRAL FIRE STATION
HENDON N.W.

Building Intelligence.

CORK.—It was proposed to raise £2,000 as a memorial to the late Right Rev. Dr. Meade, Bishop of Cork, Cloyne, and Ross, and to apply it for the decoration of the choir of the cathedral church of St. Finn Barre at Cork, built from the designs of the late William Burges, A.R.A. Only £800 has, however, been subscribed, and the committee have decided to abandon the decoration scheme and to make a strong effort to complete the cathedral fabric by building from Mr. Burges's original design the chapter house. This addition, which is sorely needed as an assembly and robing room for the clergy, would cost £1,300. The contract has been provisionally given to Messrs. John Sisk and Son, and the work of construction will be supervised by Mr. W. H. Hill, F.R.I.B.A., of Cork, the diocesan architect.

DUBLIN.—New Land Registry offices are being erected in Chancery-street, Dublin, for H.M. Board of Public Works, from designs by Mr. Pentland, R.H.A., of Dublin, one of the principal surveyors to the Board. The site has a frontage of 128ft. and a depth of 41ft., and the offices consist of four floors. The style is Classic of the Georgian type familiar in Dublin. Fire-resisting construction has been employed throughout, the floors being formed of concrete supported on transverse steel beams and steel stanchions encased with expanded metal. The roof is similarly constructed, with an asphalte surface, while the floor surfaces are of parquetry. The main staircase is of reinforced concrete, with Doulton's silicon treads. The external facings are of cast concrete, the two lower stories being of concrete blocks with alternate projecting courses. The upper portion of the façade is carried out in concrete bricks. The windows are fitted with steel sashes, in which hopper ventilators are provided. The internal walls of the ground-floor apartments and the staircase walls are lined with enamelled brick. An electric passenger-lift and book lift have been erected by Messrs. R. Waygood and Co., of Falmouth-road, S.E. The contractors are Messrs. J. and R. Thompson, Ltd., Philipsburgh-avenue, Fairview.

GLASGOW MUNICIPAL BUILDINGS EXTENSION: The scheme to be proceeded with.—At the last meeting of the town council of Glasgow a discussion took place on the question of carrying out forthwith the extension of the Municipal Buildings. It will be recollected that for this undertaking the plans of Messrs. Watson and Salmond, of St. Vincent-street, Glasgow, were selected in May last by the assessor, Dr. J. J. Burnet, A.R.S.A., and were illustrated in our issues of May 2 and 9 last. The architects' report on the scheme now submitted to the councillors showed that the alteration and additions to the existing buildings included an enlarged council chamber, with members' cloakrooms and lavatories, this structure to project from the present frontage. The new buildings, including a new Burgh Court Hall and accommodation for staffs of departments, would be erected at the rear, on the opposite side of John-street. On a vote, the minutes were adopted by 45 votes to 42.

LOWESTOFT.—The new Roman Hill School at Lowestoft was opened by the mayoress last week. The school is situated in the west end of the borough, and accommodates 500 boys. A new type of plan has been adopted, in which the assembly-hall is disconnected from the classrooms. The hall is placed in the centre of the school, and the classrooms arranged in two wings, one on each side of it. Each wing has six classrooms, three on either side of the central corridor, with cloakrooms, lavatories, and two entrances. Two teachers' rooms are provided. The buildings are warmed by a low-pressure hot-water system, and lighted throughout by electricity. The architect was Mr. Abel Round, of Birmingham, and the builders were Messrs. G. and H. Marshall, of Birmingham.

ST. LEONARDS-ON-SEA.—The new Roman Catholic convent school at Bexhill-on-Sea for the Sisters of Providence of the Institute of Charity was blessed and opened by his lordship the Bishop of Salford on Saturday last. The building is situated on high ground at the corner of Sea-road and Buckhurst-road, of four acres in extent. Facing south, it commands beautiful views of the Channel. Plans are being prepared for very considerable extensions, including a convent chapel, which are likely to be executed shortly. The architect is Mr. John S. D. Hicks, of St. Leonards-on-Sea, and the contractors are Messrs. Banks and Gearing, of Sidley.

CHIPS.

A statue of white marble, erected by public subscription to the memory of the late Lord Nunburnholme, the founder of the Wilson Shipping Line, opposite the Guildhall at Hull, was unveiled on Friday by Earl Brassey. The sculptor was Mr. F. Derwent Wood, A.R.A.

The Bishop of Beverley has dedicated a memorial and commemoration window erected in the east end of the parish church of Heeley, Sheffield. It contains five lights, the centre one representing Christ as the Light of the World, the others the Four Evangelists. In the tracery above appear the sacred monograms and angels bearing the traditional symbols of the Evangelists.

A public abattoir erected by the Belfast Corporation at a cost of £52000 has been formally opened by the Lord Mayor. The abattoir has been constructed upon the system of the one in Berlin, which cost £1,000,000, while several other features have been added. The slaughtering-hall has been designed on the lines suggested in the report of the Admiralty Committee on the Humane Slaughtering of Animals.

The Brighton Town Council propose to spend £1,500 upon alterations to the interior of the Royal Pavilion, transforming the "Red Drawing-room" into a lounge and improving the cloakroom accommodation. The work, which is to be completed in time for the ball season, will be carried out in harmony with the style of the structure. The exterior of the Georgian building is to remain untouched.

Mr. Courtenay Clifton, an inspector of the local Government Board, is engaged making an inspection of the Foleshill rural district, which comprises about a dozen parishes, for the purpose of obtaining particulars in regard to the housing conditions. The inspector is making exhaustive inquiries as to whether the supply of workmen's dwellings is equal to the demand, to what extent overcrowding exists, and if it is necessary for the Foleshill Rural District Council to undertake a building scheme.

Sir H. David Erskine, of Cardross, K.C.V.O., president of the board of directors of Stirling Royal Infirmary, opened on Friday the new wards at that infirmary. The new wards and alterations which have been carried out have cost £10,000. The old buildings have been modernised, and a number of wards have been constructed, providing accommodation for a total of fifty-eight beds. A wing has also been added to the infirmary buildings for the accommodation of the officials, nurses, and servants.

The boring of the second gallery of the Simplon Tunnel is advancing steadily, 1,367 workmen being employed in the tunnel itself, and 816 outside it. The work is in the hands of the Swiss Federal Railways, who are their own contractors, and is being supervised, as chief engineer, by Herr Rothpletz, who was also the chief engineer of the Lotschberg Tunnel. The total length of the second Simplon Tunnel is 12 miles 555 yards. Of the whole tunnel, 11.2 per cent. was completely blasted out at the end of July.

Construction is to commence at once on the 38-mile section of the proposed railroad along the Coquehalla River, from Hope, British Columbia, to the summit of the Hope range, for the joint use of the Kettle Valley and Great Northern Railroads. This 38-mile road is expected to cost over 3,000,000dol., part of it exceeding 100,000dol. per mile. Twelve tunnels will be constructed in this section of the line, and a waggon-road for getting in equipment and supplies is estimated to cost 200,000dol. The tender of Messrs. MacArthur Brothers and Co. of New York, has been accepted for the whole of the works, being the lowest submitted. The chief engineer is Mr. A. McCulloch.

COMPETITIONS.

BIRMINGHAM. — Designs are invited from Birmingham architects only in competition for the new Church of St. Germain, Edgbaston, and should be made by letter, with £2 P.O. deposit, to Mr. Chas. E. Bateman, F.R.I.B.A., assessor, 18, Bennett's-hill, Birmingham.

BRIDPORT COTTAGE HOSPITAL COMPETITION.—The assessors in this competition, Messrs. Frederick Wheeler, F.R.I.B.A., and Sydney Searle, A.R.I.B.A., have placed first the design submitted by Messrs. F. H. Shayler, F.R.I.B.A., and E. R. Bill, M.S.A., of Wrekin Hotel Chambers, Wellington, Salop. Thirty-three designs were submitted.

HINDLEY, LANCS.—Mr. Herbert Wade, of St. Anne's and Blackpool, has been chosen in competition for a new council school at Hindley, providing accommodation for 250 senior scholars and 200 juniors, with infants. Several of the members of the education committee were of the opinion that "charity began at Wigan" that the architects nearest should have an opportunity of sharing the work. The chairman of the committee said he did not know Mr. Wade, but he was the architect for the schools in Argyle-street, which had been very successful, and, therefore, it was not business to go outside when they had another job and give it to someone else after Mr. Wade had given that satisfaction. The committee agreed and appointed Mr. Wade.

JAMAICA. Hearing no news of the result of the recent competition held in regard to new Municipal Buildings, Kingston, Jamaica, we renewed our inquiry as to the award. The London agents, Messrs. Alexander Young (London), Ltd., inform us now that the council has not forwarded the result, and they add, "we have reason to believe that no decision was arrived at."

PROPOSED NEW GOVERNMENT BUILDINGS, OTTAWA.—The High Commissioner for Canada informs us that a notification was received by cablegram on Wednesday from the Department of Public Works, Ottawa, that the date for receiving inquiries from competitors has been extended to October 30.

VERONA.—Designs are invited to be sent in by Feb. 15 next for a new Savings Bank to be erected on a site bounded by the Piazza della Erbe, Via Camera di Commercio, Via Portici, and Via Mazzini. Two premiums of 30,000 lire and 15,000 lire, or about £12,000 and £6,000 are offered. The President of the Savings Banks, and four others to be nominated by the Council of Administration, will act as assessors. Applications should be addressed to the secretary of the Institution, 1, Via Garibaldi, Verona.

LEGAL INTELLIGENCE.

IN RE ERNEST COLLINS.—The adjourned public examination was held on Tuesday, before Mr. Registrar Linklater, of Mr. Ernest Collins, civil engineer, lately residing at Wedderburn-road, Hampstead, who was adjudged bankrupt on August 5. His liabilities were estimated at £29,100, of which £5,607 were unsecured, and his assets were valued to produce a surplus of £1,479. As we reported at the time of the previous examination the bankrupt was formerly in the employment of the Metropolitan Water Board, and retired two years ago on a pension of £904 a year. He attributed his failure to liabilities incurred on behalf of certain Canadian land development companies, of which he had been a director. The examination was closed.

A street-widening that will be of good effect in the improvement of traffic conditions in part of the middle of the city of Manchester is shortly to be undertaken. It has been under consideration for some years. As things are, a portion of Cross-street, from King-street to Albert-square—is wide enough only to admit of a single line of tram rails. Part of the street between the two points mentioned has already been widened by setting back the frontage of the property on the north-western side, and the improvement committee, together with the tramways committee, has now purchased property so as to widen the remaining section of the thoroughfare.

Our Office Table.

The Dublin Corporation are still fooling over the Art Gallery. Another special meeting of the corporation to consider the proposal to erect the gallery on the bridge across the River Liffey, to house the collection of pictures conditionally presented to the city by Sir Hugh Lane, was to have been held on Monday, but only eighteen members attended, and, there not being a quorum, the meeting fell through. The time limit of six weeks appointed by Sir Hugh for the corporation to reach a definite decision expired last Friday; but it is understood the pictures, which are valued at about £65,000, have not yet been removed from the city. When the town clerk was calling the roll many members remained outside the council chamber, and did not answer to their names. Councillor Byrne protested that there was intimidation going on at the barrier, and that members were being stopped from entering. A requisition for another meeting, to be held to-day (Friday) at 1 p.m., was handed in. In reference to the meeting the town clerk has written to each member of the corporation stating that the lord mayor is of opinion that in the interests of the good name of the municipality this matter should be disposed of immediately, in one way or another, and I am, therefore, to state that, irrespective of whatever views you may hold upon the proposal, he would be glad if you would be present, so that the decision arrived at may be one carrying with it finality."

An inquest was held at Wandsworth last Friday on Mr. George Tinwoth, the sculptor, who, as we announced in our last issue, died suddenly at Putney Railway Station on Wednesday week. Mr. Tinworth was sixty-nine years of age, and had been employed at Doulton's for over forty years. Miss Ellen Dogweed, his sister-in-law, told the coroner that he had suffered from a cold for some time. Mr. Tinworth was found in a railway carriage with his head between his knees. A porter moved him on to the platform, but when a doctor arrived he was dead. Death was due to heart-failure on account of old valvular disease, possibly accentuated by hurrying, and a verdict was returned accordingly. The funeral took place on Monday at Norwood Cemetery, many of his old co-workers at the Royal Lambeth Potteries and other friends attending. The numerous wreaths included some from New South Wales. In Southwark, his native borough, the flag at the town-hall was half-mast high.

Sir John Aird, the second baronet of that name, has decided to dissolve and close down the works of the famous engineering firm in Queen Anne's-gate, Westminster. Existing contracts will be carried out, but no fresh ones will be undertaken. It was in 1848 that the firm was established. John Aird, a Scottish mason from Ross-shire, settled in London, and was for twenty years the superintendent of the Phœnix Gas Company's station at Greenwich. With the experience thus gained he started a contracting business for himself, laying down mains for many gas and water companies in London. At this time, John Aird the younger, afterwards Sir John, was fifteen years of age. On his eighteenth birthday he joined his father's business, which has since been known as John Aird and Sons. One of the principal undertakings of the firm was the erection of Paxton's glass-house in Hyde Park for the 1851 Exhibition, and its removal to Sydenham. Messrs. Aird constructed the Manchester Ship Canal, the Royal Edward Dock at Avonmouth, and the Tanjong Pagar Dock at Singapore, reservoirs at Hampton and Staines, the Beckton plant of the Gas Light and Coke Company, the first waterworks at Amsterdam, and others at Copenhagen and Berlin; and gasworks at Copenhagen, Moscow, and elsewhere in Russia, France, Italy, and Brazil. They were associated with Brassey and Wythes in constructing the Calcutta waterworks, with Sir John Kirk in building the Millwall Docks, and with Peto, Brassey, and Betts in civil engineering works in Sardinia. The late Sir John Aird, M.P., who died in January, 1911, leaving an estate of £1,101,489, will be best remembered for his great work of damming the Nile at Assouan. The work, begun in April, 1898, was finished in 1902, a year before the stipulated time.

The new session of the Central School of Arts and Crafts begins September 22. The classes in the School of Architecture will particularly interest our readers. Design, drawing, and museum study are directed by Messrs. MacDonald Gill, Allan Davidson, and S. B. K. Caulfield, F.R.I.B.A.; building construction by Mr. F. H. Mansford; structural mechanics by Mr. Percy J. Waldram, wood-carving by Mr. George Jack, stone-carving by Mr. Richard Garbe. With the exception of the South Kensington Museum class (Saturday morning and afternoon) all the above are held in the evenings. Other departments provide for students of nearly every craft, and they include many day classes.

The classes of the Westminster Technical Institute, Rochester-row, begin on Monday next. The principal is Mr. J. Stuart Ker, B.Sc., A.M.Inst.C.E., assisted by a large staff, including, in the department of architecture and construction, Messrs. F. G. Steed, A.R.C.S.; W. J. Wilsdon, Licentiate R.I.B.A.; F. C. Webster, A.R.I.B.A.; M. J. Dawson, A.R.I.B.A.; W. T. Benslyn, A.R.I.B.A.; L. Lickis, F.S.I.; E. H. Sprague, A.M.Inst.C.E.; W. T. Cresswell, F.S.I., Licentiate R.I.B.A.; P. J. Waldram, F.S.I.; A. Haysom, R. Smerdon, Honours Medallist, and H. Last. The head-master of the Westminster School of Art is Mr. Mouat Loudan; this school established in the Royal Architectural Museum, was transferred to the Westminster Technical Institute in 1903, and now forms an integral part of the institute. A new building, containing studios, lecture- and classrooms, drawing offices, and workshops, was opened in 1908 as an addition to the old building, to provide greatly increased and improved accommodation for the various art and technical classes.

The Lancashire and Cheshire branch of the Roads Improvement Association is organising a special inquiry into the narrow and dangerous nature of many of the canal bridges in the two counties. At the last meeting of the committee of the branch it was reported that in many instances the bridges do not follow the direction of the approaching roadways, being at right-angles across the canal, while the approach roads frequently join at an angle of 45deg. It was mentioned that the finances of most of the canal companies would not stand the cost of rebuilding and strengthening these bridges, and, therefore, road users must seek other machinery for getting them improved. The matter is to be considered at the next meeting.

At the Glaslyn Rural Council on Tuesday, Mr. Fowden Jones proposed that the Local Government Board should be asked to reconsider their refusal to sanction the appointment of Mr. David Llewellyn, a young farmer, as sanitary inspector. The Board, he said, had no conception of the difficulties which small rural councils had to contend with. The Rev. Collwyn Morgan said the Board's refusal was an insult to farmers. Did the Board think it required less brains to be a farmer than to be a joiner or stonemason? Farmers had made most competent sanitary inspectors in other districts. Eventually the council resolved to ask the Board to give Mr. Llewellyn a year's trial.

A scheme for improving the existing arrangements for the protection of Ely Cathedral against fire is now being carried out by Messrs. Merryweather, the well-known fire engineers. With a view to assisting the Ely Fire Brigade to get to work quickly a system of dry mains is being laid, starting from the corner of the Lady-chapel on the north side, and continuing round the east end up to the main roof level, and to the lantern roof. Fifteen hydrants will be fixed on this main at various points. Should it be necessary to bring the Ely steam fire-engine into action considerable time will be saved owing to the fact that the provision of this dry main will obviate the necessity of laying out long lines of hose-piping, as it will merely be necessary to connect a short length of delivery hose from the engine to the outer end of the main, and then attach a length of hose to the hydrant which is nearest the scene of the outbreak. A similar dry main has recently been installed by Messrs. Merryweather at St. Paul's Cathedral, London. The pressure of water obtained at the triforium level from the mains on the north and south side of the Cathedral was of very little use, and, accordingly, specially-designed hydrants, with pressure augmenters fitted thereto, will be fixed at these points, in order that the best advantage may be obtained from the Council's service of water, as, of course, it would be unwise to rely entirely on the Ely steam fire-engine, seeing that it is within the bounds of possibility that the engine might be elsewhere engaged at the time that its services were needed at the Cathedral.

MEETINGS FOR THE ENSUING WEEK.

Saturday (To-morrow). — Royal Photographic Society. "Geologising with a Camera," by F. Martin Duncan. Suffolk-street Galleries, Haymarket. 8.30 p.m.

Institution of Municipal and County Engineers, Eastern District Meeting at Hounslow.

Tuesday. Royal Photographic Society. "To Greece with a Camera," by R. Harvey Wyatt. Suffolk-street Galleries, Haymarket. 8.30 p.m.

Thursday.—Royal Photographic Society. "Through Russia, the Caucasus, and the Crimea," by the Rev. T. T. Norgate. Suffolk-street Galleries, Haymarket. 8.30 p.m.

Friday. Royal Archæological Institute. Special Visit to Stonehenge. Train from Waterloo Station 10.50 a.m.

Saturday (Sept. 27). Institution of Municipal and County Engineers. South-Western District Meeting at Tiverton. 10.30 a.m.

Mr. W. C. Eddowes has resigned his position as borough surveyor of Shrewsbury, which he has held for nearly thirty years.

The Bishop of London will consecrate the new church at Knocke, Belgium, which has been built by English visitors, on Friday in next week, the 26th inst.

The highways committee of the Sunderland Town Council have decided to recommend the paving of the Newcastle-road with Durax paving at an estimated cost of £4,830 8s.

At the parish church, Goole, a new pulpit and screen have been dedicated. The new additions are part of an extensive scheme for the beautifying of the church inaugurated by the vicar of Goole.

It is reported in the Press of Massachusetts that the partnership now existing between Messrs. Cram, Goodhue, and Ferguson will soon be dissolved. Mr. Goodhue, it is stated, will remain in practice in New York City, while Mr. Cram and Mr. Ferguson will continue in Boston.

Warrant has been granted at Edinburgh Dean of Guild Court for the erection of a new picture-house at 249, Gorgie-road. The house will have seating accommodation for 1,000 persons, and the estimated cost is between £3,000 and £4,000. Messrs. Brand and Lithgow, Glasgow, are the architects.

The death occurred suddenly, on Monday, of Mr. A. H. Samuel-Yates, J.P., principal of the firm, the Highfield Paint and Oil Works in Leeds-street, Liverpool. Deceased, who was 69 years of age, succeeded many years since to the business, which had been established by his father, Mr. Lewis Samuel, in 1849.

The formal opening of the Masonic Hall, Tyne Dock, has been extensively enlarged. The extensions have been carried out by Mr. Milton Swales, contractor, of South Shields, to the designs and under the superintendence of Mr. J. H. Morton, F.R.I.B.A., Newcastle and South Shields. The additions consist, on the basement level, of a banqueting-room, approached by a staircase from the hall on the ground floor. On this floor are placed the cloak-rooms and lavatories, the club, and kitchen department, and on the upper floor are the members' room and ante-room for robing, leading to the new lodge-room or Masonic temple. The decorations have been carried out by Mr. Wm. Allon, of Burrow-street, South Shields, the lodge-room being treated in the Pompeian style.

Trade News.

WAGES MOVEMENTS.

LONDON.—The painters' ballot last Saturday resulted by a vote of three to one to accept the terms offered by the Master Decorators' Association which the men had refused a fortnight before by a vote of twenty to one. The Master Builders' Association is no party to the settlement having only offered at present a halfpenny an hour increase, while the Master Decorators have conceded a penny, and further discussion of the proposed new rules, which the Master Decorators have accepted. As the busy season is practically over, any inconvenience is at an end. On Wednesday, the Master Builders' Association met the United Builders' Labourers' Union, to discuss the men's demands for a penny an hour increase, and a code of working rules. The Master Builders' and the Labour men discussed the rules, which provide among other things for penalties for breach of agreement, and offered a halfpenny per hour increase six months from date of acceptance of the rules. Another meeting was held yesterday; but the result had not reached us as we went to press.

BARROW PLUMBERS.—After being out on strike for fifteen weeks, the Barrow plumbers came to terms on Friday with the employers, who have conceded an advance in wages from 9d. in summer and 9½d. in winter to 9½d. per hour all the year round. Winter hours are to average 47½ in place of 49 per week. The men resumed work on Monday. Following this settlement of the plumbers' dispute, the whole of the other trades, in accordance with a decision at a Sunday meeting, refused on Monday morning to return to work, and there is still nothing doing in the building and allied trades. These trades claim that the agreement was broken by the employers, and they demand an increase of 1d. per hour all round. The rate of pay at present is: Bricklayers, 9d.; plasterers, 9½d.; joiners, 9¼d. in summer and 9½d. in winter; masons, 9½d.; and painters, 9½d. per hour.

SPEN VALLEY.—The masons and bricklayers of the Spen Valley, who have been on strike since August 1 for an advance of wages from 8½d. to 9½d. an hour, have agreed to accept an offer of an immediate advance of a halfpenny, on condition that another increase of a halfpenny is conceded in March.

THIRSK.—The bricklayers and labourers at Thirsk went out on strike on Friday night for advances in wages. The bricklayers, who get 6d. an hour, are now asking for 7d., and the labourers for 4½d. The masters have offered 6¾d. an hour to bricklayers and 4¾d. to labourers, but the men have refused these terms.

At a Local Government Board inquiry at Shetfield, the Roads Improvement Association supported the application of the corporation for sanction to raise loans for widening and improving an alternative route between Chesterfield and Sheffield, and for improving three dangerous corners in the district.

An organ is being erected in the large hall of the Bishopsgate Institute by the governors. It is a four-manual instrument with 92 stops, costing upwards of £2,300. It is being built by Messrs. Brindley and Foster, of Sheffield, under the advice and supervision of Sir Frederick Bridge, and it is to be completed by October 21. The case has been designed by Mr. Franklin Gadsdon, architect to the governors, and is being made by Messrs. Ogilvie and Co., of Mildmay-avenue, Islington. The organ will be blown by an electric motor.

An alarming accident to a picture palace in course of erection occurred at Small Heath, Birmingham, on Saturday afternoon. The structure, which was situated at the corner of Green-lanes and Victoria-road, suddenly collapsed at about two o'clock; but, fortunately, no one was injured, as the forty men engaged in the building had left at dinner-time. Operations were commenced about three months ago, the contractor being Mr. E. Garfield, Birchfield-road, and it was anticipated the work would have been completed in a month. All that is left standing are the front and rear walls. The structural work had been finished, and the electrical fittings installed. The hall, which was 60ft. wide, and 88ft. long, was to accommodate 880 persons. The side walls were 15ft. in height, and 14in. thick, and were supported at intervals by columns. On these walls rested the span roof, which was supported by six iron principals, placed at intervals of 11ft. Mr. Garfield, the contractor, interviewed on Saturday, said it was certain from the appearance of the remains of the building that the collapse was due to the iron principals giving way in the centre.

LATEST PRICES.

IRON.

Steel Joists, Belgian and German (ex steamer, London)	per ton	£6	2	6	to	£6	5	0
Steel Joists, English	..	7	10	0	..	7	12	6
Wrought Iron Girder Plates	..	7	0	0	..	7	5	0
Steel Girder Plates	..	7	2	6	..	8	2	6
Bar Iron, good Staffs	..	6	5	0	..	8	10	0
Do., Lowmoor, Flat, Round, or Square	..	20	0	0	..	0	0	0
Do., Welsh	..	5	15	0	..	5	17	0
Boiler Plates, Iron—								
South Staffs	..	8	0	0	..	8	15	0
Best Snedshill	..	9	0	0	..	9	10	0

Angles 10s., Tees 20s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £8 15s. to £9.
Ditto galvanised, £14 to £15 10s. per ton.

Galvanised Corrugated Sheet Iron—

	No. 18 to 20.	No. 22 to 24
6ft. to 8ft. long, inclusive	Per ton.	Per ton.
gauge	£13 0 0	£13 10 0
Best ditto	13 0 0	14 0 0

Wire Nails (Points de Paris)—

3 to 7	8	9	10	11	12	13	14	15	B.W.G.
8/3	8/9	9/3	9/9	10/3	11/-	11/9	12/6	13/6	per cwt.

	Per ton.				Per ton.		
Cast-Iron Columns	£7	10	0	to	£9	0	0
Cast-Iron Stanchions	7	10	0	..	9	0	0
Rolled-Iron Fencing Wire	8	5	0	..	8	10	0
Rolled-Steel Fencing Wire	7	5	0	..	7	10	0
.. .. .. Galvanised	8	15	0	..	9	5	0
Cast-Iron Sash Weights	5	0	0	..	5	5	0
Cut Floor Brads	9	15	0	..	—		
Corrugated Iron, 24 gauge	16	0	0	..	—		
Galvanised Wire Strand, 7 ply, 14 B.W.G.	14	5	0	..	—		

B.B. Drawn Telegraph Wire, Galvanised—

0 to 8	9	10	11	12	B.W.G.
£10 10s.	£10 15s.	£11 0s.	£11 5s.	£11 15s.	per ton.

Cast-Iron Socket Pipes—						
3in. diameter	£6	2	6	to	£6	7	0
4in. to 6in.	6	0	0	..	6	5	0
7in. to 24in. (all sizes)	5	7	6	..	6	0	0

[Coated with composition, 5s. 0d. per ton extra, turned and bored joints, 5s. 0d. per ton extra.]

Pig Iron—	Per ton.		
Cold Blast, Lilleshall	110s. 0d.	to	117s. 6d.
Hot Blast, ditto	70s. 0d.	..	75s. 0d.

Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—	
Gas-Tubes	75 p.c.
Water-Tubes	72½ ..
Steam-Tubes	67½ ..
Galvanised Gas-Tubes	65 ..
Galvanised Water-Tubes	62½ ..
Galvanised Steam-Tubes	57½ ..

OTHER METALS.

Spelter, Silesian	Per ton	£21	5	0	to £21	7	6
Lead Water Pipe, Town	..	25	0	0	..	—	
.. .. .. Country	..	25	15	0	..	—	
Lead Barrel Pipe, Town	..	26	0	0	..	—	
.. .. .. Country	..	26	15	0	..	—	
Lead Pipe, Tinned inside, Town	..	27	0	0	..	—	
.. .. Country	..	27	15	0	..	—	
Lead Pipe, Tinned inside and outside Town	..	29	10	0	..	—	
.. .. Country	..	30	5	0	..	—	
Composition Gas-Pipe, Town	..	28	0	0	..	—	
.. .. Country	..	28	15	0	..	—	
Lead Soil-pipe (up to 4½in.) Town	..	28	0	0	..	—	
.. .. .. Country	..	28	15	0	..	—	
[Over 4½in. £1 per ton extra.]							
Lead Shot, in 28lb. bags	..	24	15	0	..	—	
Copper Sheets, sheathing & rods	..	80	0	0	..	80	10	0
Copper, British Cake and Ingot	..	78	0	0	..	79	0	0
Tin, English Ingots	..	196	0	0	..	196	5	0
Do., Bars	..	197	0	0	..	197	5	0
Pig Lead, in 1cwt. pigs (Town)	..	22	0	0	..	—		
Sheet Lead, Town	..	24	10	0	..	—		
.. .. Country	..	25	5	0	..	—		
Genuine White Lead	..	30	15	0	..	—		
Refined Red Lead	..	25	0	0	..	—		
Sheet Zinc	..	29	0	0	..	—		
Old Lead, against account	..	19	10	0	..	—		
Tin	per cwt.	11	0	0	..	—		
Cut nails (per cwt. basis, ordinary brand	..	0	11	6	..	—		

TIMBER.

CONSTRUCTIONAL.

Yellow Pine Deals, Quebec, per standard:—							
1st quality		£38	0	0	to £45	0	0
.. .. .. 2nd ..		26	0	0	.. 32	0	0
.. .. .. 3rd ..		16	0	0	.. 18	10	0
Spruce Deals: St. Johns		10	0	0	.. 11	10	0
.. .. Miramichi		9	10	0	.. 10	10	0
.. Boards: Swag		11	0	0	.. 12	0	0
Red Deals: rchangel 1st quality		21	0	0	.. 24	0	0
.. .. .. 2nd ..		16	0	0	.. 19	0	0
.. .. .. 3rd ..		12	0	0	.. 14	0	0
.. .. St. Petersburg—							
.. .. .. 1st quality		16	10	0	.. 18	0	0
.. .. .. 2nd ..		14	10	0	.. 15	10	0
.. .. Wyburg & Uleaborg		12	10	0	.. 15	0	0
.. Gefle, Gothenburg, and Stockholm		13	10	0	.. 17	0	0
White Deals: Crown		14	0	0	.. 15	10	0
.. .. Seconds		11	10	0	.. 13	0	0
Flooring: White and Planed—							
1st and 2nd quality mixed		10	15	0	.. 11	15	0
1st, 2nd, & 3rd quality mixed		10	5	0	.. 11	0	0
Red Planed, 1st quality		14	10	0	.. 17	0	0
Pitch Pine: Prime Deals and Boards		18	0	0	.. 23	0	0
Lignum Vitæ	Per ton	7	0	0	.. 14	0	0

	Per cubic foot.						
Yellow Pine Logs (waney board)	0	5	0	..	0	5	6
Pitch Pine Logs	0	2	0	..	0	2	6
Birch: Quebec Logs	0	2	3	..	0	2	9
Oak: Austrian Wainscot	0	7	0	..	0	8	0
Mahogany: Gaboon	0	2	0	..	0	2	3

FURNITURE AND HARDWOODS.

Teak: Burmese, per load, 50ft.		£20	0	0	to £25	0	0
Teak: Java, per load, 50ft.		16	0	0	.. 21	0	0
	Per cubic foot.						
Oak Planks: U.S.A., imported		0	1	9	to 0	2	6
.. Boards .. .. Prm		0	3	0	.. 0	3	6
.. .. Mdm.		0	2	6	.. 0	2	9
Sequoia (Californian Redwood)		0	2	1	.. 0	3	6
Birch: Quebec logs		0	2	3	.. 0	3	9
.. .. sawn planks		0	1	3	.. 0	2	0
Oak: Austrian Wainscot		0	7	0	.. 0	8	0
Walnut: Prime boards and planks		0	6	0	.. 0	6	6
Walnut: Mdm.		0	3	6	.. 0	4	6
Greenheart: Hewn logs		0	3	3	.. 0	4	0
Cedar: Cigar box		0	4	9	.. 0	5	6
Satin Walnut: Imp. sawn boards, prime		0	2	4	.. 0	2	9
Orham: Imp. sawn boards, prime		0	2	0	.. 0	2	3
Mahogany: St. Domingo, Cuba, and Honduras		0	6	0	.. 0	9	0
.. African, Assinee, &c.		0	5	0	.. 0	6	6
.. Lagos and Benin		0	4	6	.. 0	6	0
.. Sekondi and Cape Lopez		0	3	0	.. 0	4	0
.. Gaboon		0	2	0	.. 0	2	3
Satinwood: West Indian		0	10	0	.. 0	14	0
Rosewood	Per ton	8	0	0	.. 12	0	0
Lignum Vitæ	..	7	0	0	.. 14	0	0

STONE.*

Red Mansfield, in blocks	per foot cube	£0	2	4
Darley Dale, ditto	..	0	2	3
Red Corsehill, ditto	..	0	2	1
Closeburn Red Freestone, ditto	..	0	2	1
Ancaster, ditto	..	0	1	11
Greenshill, ditto	..	0	1	11
Chilmark, ditto (in truck at Nine Elms)	..	0	1	10½
Hard York, ditto	..	0	2	0
Ditto ditto 6in. sawn both sides, landings, random sizes	per foot sup.	0	2	8
Ditto ditto 3in. slab sawn two sides, random sizes	..		1	3

*All F.O.R. London.

Bath Stone, delivered on road waggons, Paddington Depot	per foot cube	0	1	7½
Ditto, ditto, Nine Elms Depot	..	0	1	9½
Beer Stone, delivered on rail at Seaton Station	..	0	1	0
Ditto, delivered at Nine Elms Station	..	0	1	6

Portland Stone, in random blocks of 20ft. average:—

	Brown Whit Bed.	White Base Bed
	Per foot cube.	
Delivered on road waggons at Paddington Depot, Nine Elms Depot, or Pimlico Wharf	£0 2 3	£0 2 1

SLATES.

	in. in.	£	s.	d.	per 1,000 of 1,200 at r.stn
Blue Portmadoc	20×10	12	12	6	
.. ..	16× 8	6	12	6	.. ..
Blue Bangor	20×10	13	2	6	.. ..
.. ..	20×12	13	17	6	.. ..
First quality	20×10	13	0	0	.. ..
.. ..	20×12	13	15	0	.. ..
.. ..	16× 8	7	5	0	.. ..
Eureka unfading green	20×10	15	17	6	.. ..
.. ..	20×12	18	7	6	.. ..
.. ..	18×10	13	5	0	.. ..
.. ..	16× 8	10	5	0	.. ..
Permanent green	20×10	11	12	6	.. ..
.. ..	18×10	9	12	6	.. ..
.. ..	16× 8	6	12	6	.. ..

BRICKS.

(All prices net.)

First Hard Stocks	£1	15	0	per 1,000 alongside, in	
Second Hard Stocks	1	11	0	.. ..	river.
Mild Stocks	1	9	0	.. ..	..
Picked Stocks for Facings	2	5	0	..	livered at rly. stn.
Flettons	1	10	0	.. ..	..
Pressed Wire Cuts	1	18	0	.. ..	..
Red Wire Cuts	1	14	0	.. ..	..
Best Fareham Red	3	12	0	.. ..	
Best Red Pressed Ruabon Facing	5	0	0	.. ..	..
Best Blue Pressed Staffordshire	3	15	0	.. ..	..
Ditto Bullnose	4	0	0	.. ..	..
Best Stourbridge Firebricks	3	14	0	.. ..	..
2½in. Best Red Accrington Plastic Facing Bricks	4	10	6	..	Net, delivered in full truck loads in London.

* Accrington Best Red Plastic Facing per 1,000

Bricks	£2	10	0
3⅛" ditto Second Best Plastic ditto	2	2	6
Ditto Ordinary Second Bricks	1	11	3
Ditto Plastic Engineering Bricks	1	17	6
Sewer Arch Brick not more than 3⅛" in thickest part	2	0	0
3⅛" Chimney Bricks fit for outside work	2	6	0
3⅛" ditto ditto through and through	2	0	0
3⅛" Beaded, Ovolo and Bevel Jambs; Octagons; 2¼" and ½" radius Bullnoses; Stock patterns	3	7	6
Accrington Air Bricks, 9"×2 course deep, each	0	0	6
Ditto ditto 9"×1 course	0	0	3

Accrington Camber Arches:—

3 course deep, 4½" soffit, per foot opening						0	1 3
4	ditto	4½"	ditto	ditto	ditto	0	1 8
5	ditto	4½"	ditto	ditto	ditto	0	2 1
6	ditto	4½"	ditto	ditto	ditto	0	2 6
3	ditto	9"	ditto	ditto	ditto	0	2 1
4	ditto	9"	ditto	ditto	ditto	0	2 11
5	ditto	9"	ditto	ditto	ditto	0	3 9
6	ditto	9"	ditto	ditto	ditto	0	4 6

Net free on rail or free on boat at works

GLAZED BRICKS.

HARD GLAZES, (PER 1,000.)

	White, Ivory, and Salt Glazed. Best.	Buff, Cream, & Bronze. Best.	Other Colours. Seconds.	Second Colours.
Stretchers -	£13 7 6	£10 17 6	£13 17 6	£17 17 6	£12 7 6
Headers -	11 17 6	10 7 6	13 7 6	17 7 6	11 17 6
Quoins, Bullnose, and 4½in. Flats—	15 17 6	14 17 6	17 17 6	21 7 6	15 17 6
Double Stretchers—	17 17 6	16 7 6	20 17 6	24 7 6	17 17 6
Double Headers—	14 17 6	13 7 6	17 17 6	21 7 6	14 17 6
One side and two ends, square—	18 17 6	17 7 6	21 17 6	26 7 6	18 17 6
Two sides and one end, square—	19 17 6	18 7 6	22 17 6	26 17 6	19 17 6
Splays and Squints—	17 7 6	15 17 6	21 17 6	24 17 6	17 7 6

Plinth and Hollow Bricks. Stretchers and Headers—5d. each 4d. each 6d. each 6d. each 5d. each

Double Bullnose, Round Ends, Bullnose Stops—5d. each 4d. each 6d. each 6d. each 5d. each

Rounded Internal Angles—4d. each 3d. each 5d. each 5d. each 4d. each

MOULDED BRICKS.

Stretchers and Headers—8d. each 8d. each 8d. each 8d. each 8d. each

Internal and External Angles—1/2 each 1/2 each 1/2 each 1/2 each 1/2 each

Cill Bullnose, Stretchers and Headers—5d. each 4d. each 6d. each 6d. each 5d. each

Majolica or Soft Glazed Stretchers and Headers ..... Per 1,000 £22 17 6

" Quoins and Bullnose... 27 17 6

Compass bricks, circular and arch bricks of single radius £6 per 1,000 over above list for their respective kinds and colours ..... Not exceeding 9in. by 4½in by 2¾in.

Camber arch bricks, any kind or colour, 1s. 2d. each .....

Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.

* These prices are carriage paid in full truck loads to London Stations.

	s.	d.	
Thames Sand	7	6	per yard, delivered
Pit Sand	7	0	" "
Thames Ballast	6	0	" "

	s.	d.		Per ton,
Best Portland Cement	36	0	to 41	0 delivered
Ground Blue Lias Lime	21	0	per ton delivered.	

Exclusive of charge for sacks.

	s.	d.		s.	d.	Per yard,
Grey Stone Lime	13	6	to	14	0	delivered

Stourbridge Fireclay in sacks 27s. 0d. per ton at railway station.

TILES.

	s.	d.	Dlvrd. at
Plain red roofing tiles	42	0	per 1000 ry. stn.
Hip and Valley tiles	3	7	per doz. " "
Broseley tiles	50	0	per 1000 " "
Ornamental tiles	52	6	" " "
Hip and Valley tiles	4	0	per doz. " "
Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000 " "
Ornamental do.	60	0	" " "
Hip tiles	4	0	per doz. " "
Valley tiles	3	0	" " "
Selected "Perfecta" roofing tiles:—Plain tiles (Peake's)	46	0	per 1000 " "
Ornamental do.	48	6	" " "
Hip tiles	3	10½	per doz. " "
Valley tiles	3	4½	" " "
"Rosemary" brand plain tiles	48	0	per 1000 " "
Ornamental tiles	50	0	" " "
Hip tiles	4	0	per doz. " "
Valley tiles	3	8	" " "
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 " "
Hand-made sand-faced	45	0	" " "
Hip tiles	4	0	per doz. " "
Valley tiles	3	6	" " "
Hartshill" brand plain tiles, sand-faced	50	0	per 1000 " "
Pressed	47	6	" " "
Ornamental do.	50	0	" " "
Hip tiles	4	0	per doz. " "
alley tiles	3	6	" "

OILS.

Rapeseed, English pale,	per tun	£28 15 0	to	£29 5 0
Do., brown	" "	26 15 0	"	27 5 0
Cottonseed, refined	" "	29 0 0	"	30 0 0
Olive, Spanish	" "	39 10 0	"	40 0 0
Seal, pale	" "	21 0 0	"	21 10 0
Cocoanut, Cochin	" "	46 0 0	"	46 10 0
Do., Ceylon	" "	42 10 0	"	43 0 0
Do., Mauritius	" "	42 10 0	"	43 0 0
Palm, Lagos	" "	32 5 0	"	33 5 0
Do. Nut Kernel	" "	35 0 0	"	35 10 0
Oleine	" "	17 5 0	"	19 5 0
Sperm	" "	30 0 0	"	31 0 0
Lubricating U.S.	per gal.	0 7 0	"	0 8 0
Petroleum refined	" "	0 0 6¾	"	0 0 6¾
Tar, Stockholm	per barrel	1 6 0	"	1 10 0
Do., Archangel	" "	0 19 6	"	1 0 0
Linseed Oil	per gal.	0 2 3½	"	—
Baltic Oil	" "	0 2 7	"	—
Turpentine	" "	0 2 7½	"	—
Putty (Genuine Linseed Oil)	per cwt.	0 9 0	"	—
Pure Linseed Oil "Stority" Brand	"	0 10 0	"	—

GLASS (IN CRATES).

	15oz.	21oz.	26oz.	32oz.
English Sheet Glass: Fourths	2d.	3d.	3½d.	4¾d.
Thirds	2½d.	3½d.	4½d.	5¾d.
Fluted Sheet	2½d.	3¾d.	6½d.	7d.
Hartley's English Rolled Plate:	¼in. 2½d.	3/16in. ... 2¾d.	¼in. ... 3d.	
Figured Rolled and Repoussine		White. 2¾d.	Tinted. ... 5d.	

VARNISHES, &c.

	Per gallon.
Fine Pale Oak Varnish	£0 8 0
Pale Copal Oak	0 10 0
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of churches	0 14 0
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flatting Varnish	0 18 9
White Copal Enamel	1 4 0
Extra Pale Paper	0 12 9
Best Japan Gold Size	0 10 9
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 0

TRADE NOTES.

Under the direction of Messrs. Blanchard and Wheatley, architects, Hull, Boyle's latest patent "air-pump" ventilators have been applied to the Chapel, Wooton, Lines.

We learn that the engineer for the new baths at South Norwood, which are being erected for the Croydon Corporation, has specified Pudlo for making cement used in the construction entirely waterproof.

Messrs J. B. Joyce and Co., Ltd., Whitchurch, Shropshire, have received instructions to make two large tower clocks for China. Each clock will have four large illuminated dials, and striking the hours. The same firm have also in hand a quarter-chime clock for Sir William Watkin Wynn Bart. Wynnstay, Ruabon, N. Wales, and also another one for Seaforth, Lancs.

The Irish A.C. have revised their award of the Goff Challenge Cup offered in the Flying Mile event. The Talbot 25H.P. competed in this, accomplishing the fastest time at a speed exceeding 107 miles per hour on a sand course! After deducting the handicap allowances, the 15H.P. Straker-Squire was announced the winner, but the official timekeepers overlooked the fact that after allowing for the 6 1-5sec. start this car received from the 25H.P. Talbot, the latter's net handicap time resulted in a dead-heat. The promoting club has now confirmed this by declaring the 15H.P. Straker-Squire and the 25H.P. Talbot to be the joint holders of this trophy, presented by Sir W. G. D. Goff, the doyen of Irish motoring.

CHIPS.

The city council of Nottingham have received a grant of £3,000 for improving Derby-road and Nuttall-road, from the Road Board.

At Friday's meeting of Camelford Rural District Council, the surveyor was instructed to prepare estimates for improving Trewarmett-hill, Tintagel, one scheme being to fill in a valley, and make the road straighter, the other to widen the road at a dangerous bend.

The stained-glass window which has been placed in the south aisle of Holy Trinity Church, Maidstone, to the memory of Dr. and Mrs. Furber, was unveiled on Sunday. Executed by Mr. Arthur Moore, of Southampton-row, London, the window has as its subject "St Luke, the Physician."

According to their annual report, the Public Works Loan Commissioners during the financial year 1912-13 made 1,712 advances for sums amounting together to £4,554,683, as compared with 1,685 advances for £3,954,899 in 1911-12. Of the sum of £4,554,683, £3,984,111 was advanced on security of local rates, and £570,572 on security of property. The average rate of interest was £3 11s. 1d. per cent.—a penny less than the previous year's average.

On the 31st ult. a stained-glass window was unveiled and dedicated in St. Peter's Church, Wallsend-on-Tyne. The window is from the works of Miss S. Purser, A.R.H.A., at 24, Upper Pembroke-street, Dublin. It has been designed and executed by Mr. Michael Healy, one of the artists working in connection with Miss Purser. It is a small, three-light, perpendicular window. In the centre light stands a figure of St. Patrick, the right light is St. Peter, and in that to the left is St. Luke.

Notable facts with regard to housing in Glasgow were disclosed at the Congress of the Scottish Sanitary Association in that city on Friday. Dr. McConnell, chairman of the Glasgow Health Committee, said the Glasgow poor mostly lived in 21,000 tenement houses, where they passed their lives in misery and hopelessness. Yet it would be criminal to dishouse them without preventing a house famine.

Telephone: DALSTON 1388.

OGILVIE & CO. Many years connected with the late firm of W. H. LASCELLES & CO., of Bunhill Row.

Mildmay Avenue, ISLINGTON, N.

EXPERTS in HIGH-CLASS JOINERY.

ALTERATIONS & DECORATIONS. ESTIMATES FREE.

FOR

Olivers' Seasoned Hardwoods,

APPLY TO—

WM. OLIVER & SONS, Ltd., 120, Bunhill Row, London, E.C.

TENDERS.

*** Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

ALDERSHOT.—For making-up Highfield-avenue, between Church-lane and Bridge-road, for the Aldershot Urban District Council. Mr. F. C. Uren, surveyor:—

Turner, T. C., Blackwater... ...	£569 11 6
Free and Sons, Maidenhead ...	523 17 4
Ripley, Strong, and Co., Farnborough	506 18 1
Kemp, G., and Co., Aldershot ...	498 4 9
Norris, W., Farnham (accepted)...	437 4 8

ALNWICK.—For fencing the reservoir, for the urban district council:—

Wilkin and Co. (accepted)... ...	£133 9 0

ARBROATH.—For construction of screening chamber and renewal of the outfall sewer at Dangerpoint, for the drainage committee —

Fife, A., Arbroath	£529 0 0

(Recommended for acceptance.)

ASHFORD, KENT.—For the redecoration of the workhouse, for the West Ashford Board of Guardians:—

	External.	Internal.	Total.
Gwinett, T. S., Ashford—	£139 10 0	... £63 10 0	... £203 0 0
Richardson, J. J., Brixton—	150 0 0	... 42 0 0	... 192 0 0
Dixon, H., Headcorn—	144 9 6	... 46 15 8	... 191 5 2
Shippam, W., Ashford—	146 0 0	... 44 0 0	... 190 0 0
Godden, D., and Sons, Ham-street—	108 0 0	... 37 0 0	... 145 0 0
Howland, Sydney H., Ashford—	104 0 0	... 39 0 0	... 143 0 0
Thomas, C. R., Hythe—	95 0 0	... 40 0 0	... 135 0 0
Southey, E. W., Folkestone—	106 0 0	... 29 0 0	... 135 0 0
Bowles, E. J., Ashford*—	95 0 0	... 40 0 0	... 135 0 0

* Accepted.

BALBY.—For alterations and extensions at the sewage works, for the Balby-with-Hexthorpe Urban District Council:—

Knight (accepted)	£4,896 5 6

BARNSTAPLE.—For repaving on existing foundation the carriageway of a portion of High-street and Boutport-street with creosoted deal blocks (total area 1,279sq. yds.), for the town council. Mr. E. Y. Saunders, M.R.S.I., borough surveyor:—

Slee and Son, Barnstaple	£856 3 10
Griffiths and Co., London	676 16 0
Improved Wood Paving Co., London	671 9 6
Shaddock, T., Plymouth	649 9 0
Acme Paving Co., Middlesex ...	639 10 0
Duke and Son, Plymouth	634 5 0
Shaddock, W. H., Plymouth* ...	621 9 7

* Accepted.

BARROW.—For surface-water drainage, for the town council:—

Pearce, J. W., and Co., Ltd. ... (Accepted.)	£1,753 0 8

BELFAST.—For a vertical retort installation capable of carbonising 480 tons of coal per day, for the gas committee.—

West's Gas Improvement Co., Ltd. (Accepted.)	£70,950 0 0

BISHOP AUCKLAND.—For the making-up of private streets at Eldon-lane and Busty-terrace, in the township of Auckland St. Andrew, for the Auckland Rural District Council. Mr. C. Heslop, 9, Cradock-street, Bishop Auckland, surveyor:—

Denham, J., Bishop Auckland ...	£1,368 17 6
Sowerby, F., Bishop Auckland ...	1,067 3 2
Hudson, W., Bishop Auckland ...	1,014 16 9
Elliott, W., Cockton Hill, Bishop Auckland (accepted)	894 3 4

CHIPPENHAM.—For proposed drill-hall at Chippenham, for the Wiltshire County Association. Mr. R. E. Brinkworth, F.S.I., M.S.A., Bath, architect. Quantities by the architect.—

Parsons, F. B., Bath	£775 0 0
Hayward and Wooster, Bath ...	729 0 0
Light, W., Son, and Co., Ltd., Chippenham	729 0 0
Long, J., and Sons, Ltd., Bath ...	726 0 0
Wills, A., and Sons, Bath	720 0 0
Downing & Rudman, Chippenham	671 0 0
Linzey, E., and Son, Trowbridge*	627 0 0

* Accepted.

CHERTSEY.—For painting, cleaning, and whitewashing the inside of the infirmary at the workhouse, Ottershaw, Chertsey, for the guardians —

Swansborough, E. Farncombe	£275	15	0
Brown, S., and Sons, Weybridge	249	10	0
Potterton, E.	222	10	0
Cooper and Sons, Godalming	199	0	0
Gaze's, Walton-on-Thames	169	0	0
Barker, Chertsey	165	7	9
Blayney, C., Chertsey (accepted)	135	0	0

CHRISTCHURCH, N.Z.—For the supply of converters in connection with the Lake Coleridge supply, for the city council :—

Turnbull and Jones (accepted)	£3,070	0	0

COLCHESTER.—For the erection of a chapel at Severalls Asylum, for the asylum committee :—

Kidman and Sons, Cambridge	£6,175	14	9

(Recommended for acceptance.)

DARENTH.—For cleaning, painting, and repairs at the Darenth industrial colony, for the Metropolitan Asylums Board —

Finch and Finch, Hither Green	£8,728	13	0
Hussey, W., Albert Hall Mansions, S.W.	5,604	0	0
Sumner Bros., Old Kent-rd., S.E.	5,600	0	0
Inns, A. H., Camomile-street, E.C.	5,324	5	9
Proctor, E., and Sons, Plumstead	5 273	19	7
M. McCarthy Clapham Park	5,264	0	0
Kazak, L., Railway-place, Belvedere (accepted)	4,919	0	0
Engineer-in-chief's estimate	£5,185		

GRANTHAM.—For erecting four cottages, to be built in two pairs, under the Housing and Working Classes Act, near Grantham, Lincs, for the district council. Mr. H. Cecil Rudkin, A.R.San.I., 4, St. Peter's Hill, Grantham, architect :—

Bland, T.	£755	0	0
Creigg, W.	736	0	0
Walker Bros.	710	0	0
Read, F.	679	0	0
Parks and Son	600	0	0
Clarke, W. G. (accepted)	594	0	0

GRIMSBY.—For erecting police-van shed and stables, for the watch committee. Mr. H. Gilbert Whyatt, M.Inst.C.E., Municipal Buildings, 170, Victoria-street, Grimsby, borough engineer and surveyor :—

Hipkin, G. H.	£311	16	0
Gilbert, W.	310	6	6
Marshall, E.	310	0	0
Borrill and Cheesman	305	0	0
Swaby and Walsham	297	15	0
Thompson, H. and C.	294	11	0
Smith, E.	284	10	0
Edwards and Raynor	275	0	0
Marrows, H.	274	0	0
Seamer, D.	269	14	6
Emerson Bros.	268	0	0
Taylor and Richardson (accepted)	248	15	0

LUTON.—For erection of school buildings in Tennyson-road, for Luton Education Authority. Messrs. J. R. Brown and Son, architects. Quantities by the architects —

Dunham, W. G., and Sons	£7,943	0	0
Saunders, J., and Sons	7,550	0	0
Drever, O. P., and Son	7,191	0	0
Higgs, T., Northampton*	7,085	0	0

* Accepted.

MAESTEG.—For the erection of public offices, for the urban district council —

Thomas Bros., Pontydwr	£5,454	14	0
Herbert, H. J., and Co., Newport	5,200	0	0
Bowen and Davies, Maesteg	4,875	8	7
Lewis, W. T., Maesteg	4,833	0	0
Jones, W. A., Bridgend	4,699	13	5
Evans, D., and Son, Cardiff	4,600	0	0
Gaylard, P., Bridgend (accepted)	4,363	0	0

MILNROW.—For coating Buckley-hill lane with tar macadam, for the urban district council :—

Shepherd, J., and Sons, Milkstone, near Rochdale.	
(Accepted.)	

NEWCASTLE-ON-TYNE.—For building a tramway-shed at the foot of Brighton Grove, Ponteland-road, for the city council :—

Kirk and Brown (accepted)	£92	11	7

NEWCASTLE-ON-TYNE.—For the erection of Cruddas Park School, for the Newcastle Education Committee :

Robson & Waddle, Blyth (accepted)	£11,539	13	9

(Lowest tender received.)

PETERSFIELD.—For the erection of a new ward and for additions to the administrative block at the Petersfield Isolation Hospital. Mr. H. T. Keates, M.S.A., High-street, Petersfield, architect :—

Deane, H. C., & Son, Midhurst	£2,286	17	0
Cæsar, A., and Sons, Liphook	2,273	9	5
Holder, A. L., Petersfield	2 243	18	8
Pattinson, W., & Sons, Westminster	2,249	0	0
Mould, W., Petersfield	2,221	8	0
Longley, J., and Co., Crawley	2,198	0	0
Crosby and Co., Farnham	2,024	0	0
Fry, D., Godalming (accepted)	1,978	0	0

POOLE.—For supply of a steam engine, machinery, and shafting, for the laundry at the workhouse, Longfleet, Poole, for the guardians :—

Dorset Irontoundry Co., Ltd., Poole (accepted)	£133	0	4

RHYMNEY VALLEY.—For supply of a pump in connection with a scheme for a gas supply in the Rhymney Valley portion of the council's area, for the Bedwellty Urban Council :—

Mather and Platt (accepted)	£217	15	0

SALFORD.—For the installation of electric light in the police department, at the Salford Town Hall, for the Corporation :—

Halliwell and Co., Manchester	£512	7	0

(Accepted.)

SHELL.—For the erection of the sanatorium at Shell, for the Halifax Town Council. Accepted tenders —

Mason and contractor —			
Raynor, G., Free School-lane	£914	8	5
Joiners and builders —			
Fielding, J., and Son, New-road	599	0	0
Plumber and glazier —			
Pollard, A., 27, Queen's-road	557	10	7
Slater and plasterer —			
Pollard, A. Old Cock Yard	347	14	2

(All of Halifax.)

SHOOTERS' HILL, S.E.—For road repairs at Brook Hospital, for the Metropolitan Asylums Board —

Griffiths, W., and Co., Ltd., Bishopsgate, E.C.	£537	0	0
Wall, E., Summerstown, S.W.	188	0	0
Wheeler, W. H., and Co., Ltd., Blackfriars-road, S.E.	180	0	0
Woodham, H., and Sons, Catford	270	0	0
Pearce, W., Forest Hill	268	0	0
Davey and Armitage, Southend-on-Sea (accepted)	180	0	0

Engineer-in-chief's estimate, £180.

SOUTHAMPTON.—For erecting additional pavilion at the Isolation Hospital, for the corporation —

Nichol, J., Southampton	£1,842	0	0

(Accepted.)

(In lieu of tender for £1,792 from H. Lawrence, withdrawn since acceptance.)

SPALDING.—For carrying out work of water supply to the parishes of Pinchbeck, Moulton, and Weston, for the Spalding Rural District Council :—

Ashley, H., Mansfield Woodhouse	£10,781	0	0

(Accepted. Three higher and two lower tenders received.)

STOKE-ON-TRENT.—For carrying out alterations and additions to the administrative block of the isolation hospital, for the Stoke-on-Trent Joint Hospital Board. Mr. Elijah Jones, Hanley, architect :—

Moss, J., and Son, Milton, Staffs.	£6,280	0	0

(Accepted.) (Lowest of thirteen tenders received, highest, £7,475.)

STOKE-ON-TRENT.—For furnishing the staff block extension and a patients' pavilion, for the Stoke-on-Trent Joint Hospital Board. Mr. Elijah Jones, Hanley, architect —

Hopkins, G., Tunstall (accepted)	£585	0	0

(Lowest of six tenders received, highest, £739.)

UXBRIDGE.—For the construction of a ladies' lavatory, for the guardians :—

Curtis	£360	7	6
Pratt, H. E. and I.	349	0	0
Winch	315	0	0
Fassmidge and Sons	359	0	0
Aston, L.	353	0	0
Williamson, W. J. (accepted)	288	0	0

(*Continued on page XII.*)

LIST OF COMPETITIONS OPEN.

Sept. 22	Working Class Houses, Cleator Moor	£5 5s. (merged in commission)	H. Rothery, Clerk, Cleator Moor.
,, 30	Fire Station, Blackburn (F. G. Briggs, F.R.I.B.A., Blackburn, Assessor)	£100, £50, £25	The Town Clerk, Town Hall, Blackburn.
,, 30	Edward VII. Memorial Sanatorium, North Wales (£20,000 limit)	£100, £50, £30	The Secretary, Municipal Offices, Westgate-st., Cardiff.
Oct. 4	Laying-out 50 acres Estate and Working Class Dwellings, Bradford (H. T. Hare F.R.I.B.A., Assessor)		F. Stevens, Town Clerk, Town Hall, Bradford.
,, 6	Front for Cigar Shop, Piccadilly. (Henry Tanner, F.R.I.B.A., 12, Regent-street, W., Assessor)	£50	Martins, Ltd., 25, Cheapside, E.C.
,, 31	Houses and Planning, York	£100, £50, £25	F. W. Spurr, City Engineer, Guildhall, York.
Nov. 1	Royal Palace, Sofia, Bulgaria		Section d'Architecture au Ministere des Travaux Publics, Sofia.
,, 1	Law Courts, Sofia, Bulgaria		Section d'Architecture au Ministere des Travaux Publics, Sofia.
,, 18	Destructor, Schaerbeek-lez-Bruxelles		Service de l'Ingenieur, 30, Rue de la Ruche, Brussels.
,, 29	Band Pavilion, West Cliff, Folkestone (limit of cost £20,000). (Edwin T. Hall, F.R.I.B.A., 34, Bedford-square, W.C., Assessor)		A. F. Kidson, Town Clerk, Folkestone.
Dec. 29	New Offices for Board of Trade, &c., Whitehall Gardens, S.W. [R. Blomfield, M.A. (Oxon), A.R.A., P.R.I.B.A. J. Belcher, R.A., and Sir Aston Webb, C.V.O., C.B., R.A., Assessors] Sketch Designs, ten will be Selected,		
1914.	with £300 Honorarium each		The Secretary, H.M. Office of Works, Storey's Gate, S.W.
Jan. 2	Manchester Royal Exchange, Additional New Buildings and Alterations. Open to all architects in U.K. Not more than 12 architects of repute have been specially invited; each of whom will receive one hundred guineas. The three selected architects will receive one hundred guineas each. Author of design placed first will be appointed. (J. S. Gibson, F.R.I.B.A., Assessor)		Rich. J. Allen, Master, Royal Exchange, Manchester.
,, 2	Departmental and Courts Buildings, Ottawa (T. E. Collcutt, J. H. G. Russell, and J. O. Marchand, Assessors). Double Competition, five unsuccessful competitors in second to receive 3,000dols. each		R. C. Desrochers, Department of Public Works, Ottawa, Ont.
Feb. 15	Savings Bank, Verona (Five Assessors	£1,200, £600	The Savings Bank, 1, Via Garibaldi, Verona.
No date	Twelve Workmen's Cottages, Skelmanthorpe		W. Fisher, Clerk, Skelmanthorpe.

LIST OF TENDERS OPEN.

BUILDINGS.

Sept. 19	Infants' School, Extensions to, Llwynpia	Rhondda Urban DistrictCouncil	J. Rees, Archt., Hillside Cottage, Pentre.
,, 19	Labourers' Double Cottages (36), Belfast	Rural District Council	The Clerk, Belfast.
,, 19	Primitive Methodist Church, Alterations to, Hull		T. B. Atkinson, Archt., 11, Trinity House-lane, Hull.
,, 19	Old Isolation Hospital, Repairs to, Harrogate	Joint Isolation Hospital Committee	J. T. Taylor, Clerk, Municipal Offices, Harrogate.
,, 19	Boys' School, Extension to, Bodringallt	Rhondda Urban District Council	J. Rees, Archt., Hillside Cottage, Pentre.
,, 19	Town Hall, Wallasey	Corporation	Briggs, Wolstenholme, and Thornely, Archts., Liverpool.
,, 19	Parish Church, Repairs to, St. Teath		The Vicarage, St. Teath, Cornwall.
,, 19	Thermal Baths Improvement, Buxton	Urban District Council	F. Langley, M.I.M.C.E., Town Hall, Buxton.
,, 20	Cemetery, Greenhouse at, East Finchley	Islington Borough Council	J. Patten Barber, Boro' Eng., Town Hall, Upper-st., Islington N.
,, 20	Botanic Gardens, Additions to Men's Bothy, Glasgow	Corporation	J. Lindsay, Town Clerk, City Chambers, Glasgow.
,, 20	Orange Hall, Ballyclare		J. M'Connell, Sec., Houston Service's, Main-st., Ballyclare.
,, 20	Two Additional Rooms, The Grove, Shardlow	Guardians	J. Shelton, Archt., Darley House, Long Eaton.
,, 20	Ainsworth Hospital, Additions to, Bury	Joint Hospital Board	J. Settle, Boro' Sur., Bank-street, Bury, Lancs.
,, 20	Mill and Concentrating Plant Premises, Tincroft	Carn Brea and Tincroft Mines, Ltd.	F. A. C. Starling, Sec., Carn Brea.
,, 22	Refreshment Rooms and Offices, Londonderry Station	Great Northern (Ireland) Rly. Co.	T. Morrison, Sec., Amiens-street Terminus, Dublin.
,, 22	New Church, Basford, near Stoke-on-Trent		Austin and Paley, Archts., Lancaster.
,, 23	Alice Briggs Home for Girls, Additions to, Heaton Mersey	Manchester Education Committee	The Education Offices, Deansgate, Manchester.

BUILDINGS *continued.*

Sept	22—Houses (10), Tralee	Great Southern & Western Rly. Co.	R. Crawford, Sec., Kingsbridge Terminus, Dublin.
,,	22—Superintendent's House, Additions to, Wavertree	Liverpool Select Vestry	G. W. Coster, Clerk, Parish Offices, Brownlow-hill, Liverpool.
,,	22—Three Transformer Chambers (overground), Leeds	Electric Lighting Department	The Town Clerk, Pearl Buildings, Leeds.
,,	22—Masonry Tank-house at Station, Strabane	Great Northern (Ireland) Rly. Co.	T. Morrison, Sec., Amiens-street Terminus, Dublin.
,,	22—Almhouses, Works at, Bury St. Edmund's	Guildhall Feoffment Trust	S. Naish, M.S.A., 7, Hatter-street, Bury St. Edmund's.
,,	22—House and Buildings, Additions to, Bourne North Fen	Small Holdings Committee	J. Clare, County Archt., Sleaford.
,,	22—Poorhouse, &c., Additions to, Merryflatts, Govan	Combination Parish Council	C. Marshall and Son, F.F.S., 68, Bath-street, Glasgow.
,,	22—Office Block, Dennistoun Depot, Alterations to, Glasgow	Corporation	J. Dalrymple, Gen. Man., 46, Bath-street, Glasgow.
,,	23—Bain-square Wash-house, Additions to, Glasgow	Corporation	J. Lindsay, Town Clerk, City Chambers, Glasgow.
,,	23—Council Schools, Additions to, Laindon Hills, Essex	Education Committee	The County Architect, Duke-street, Chelmsford.
,,	23—Cottages (30), Canton	Cardiff Corporation	W. Harpur, M.I.C.E., City Eng., City Hall, Cardiff.
,,	23—Re-erection and Additions to Works, Deadwaters		Lunn and Kaye, Archts., Huddersfield.
,,	23—Workmen's Dwellings, Keith-road, Barking	Urban District Council	C. J. Dawson, F.R.I.B.A., Clock House Chambers, Barking.
,,	23—Working-Class Dwellings, Beverley-road, Hessle	Urban District Council	W. Coulson, Parish Hall, Hessle.
,,	23—St. Martin's Church Tower, Completion of, Ypres		M. J. Coomans, Eng.-Archt., Place de la Gare, Ypres, Belgium.
,,	23—Withens Clough Reservoir, Buildings at, Cragg Vale	Waterworks Committee	The Waterworks Manager's Office, Town Hall, Morley.
,,	23—Westkerke Roxem Church, Reconstructing, W. Flanders		M. Carette, Archt., Courtrai.
,,	23—Working-class Houses (47), Blackrock	Urban District Council	Donnelly and Moore, 36, Nassau-street, Dublin.
,,	24—Edgbaston House, Repairs to, Wellington	Guardians	R. Gwynne, Clerk, Edgbaston House, Wellington, Salop.
,,	24—Corrugated Iron Shed, Dalmarnock Stables, Glasgow	Corporation	D. McColl, Cleansing Superintendent, Cochrane-st., Glasgow.
,,	24—Oldham-road Goods Station, Extension to, Manchester	Lancashire and Yorkshire Railway	R. C. Irwin, Sec., Hunt's Bank, Manchester.
,,	24—Steam Disinfecting Station, Isolation Hospital, Lymm	Urban District Council	D. Mort, Sur., Council Offices, Lymm.
,,	24—Schoolrooms, &c., Queen Mary's Hospital, Carshalton	Metropolitan Asylums Board	W. T. Hatch, M.I.C.E., Eng.-in-Chief, Embankment, E.C.
,,	24—St. Anne's Institute, External Repairs to, Babbacombe		H. A. Tessier, Carrigbawn, St. Marychurch, Torquay.
,,	24—Vestry, St. Gluvias Church, Enlargements at, Penryn	Vicar and Churchwardens	F. Harris Boro' Sur., Penryn.
,,	24—Mission Church, Extensions to, Abertysswg		A. F. Webb, M.S.A., Archt., Blackwood, Mon.
,,	25—Filter House, Neuadd Reservoir, Torpontau	Merthyr Tydfil Corporation	The Waterworks Engineer, 101, High-street, Merthyr.
,,	25—Attercliffe Baths, Alterations to, Sheffield	Health Committee	The City Architect, Town Hall, Sheffield.
,,	25—Public Baths, Abbey-road, Barrow-in-Furness	Corporation	The Borough Engineer, Town Hall, Barrow-in-Furness.
,,	25—Baths, Glossop-road, Alterations to, Sheffield	Health Committee	The City Architect, Town Hall, Sheffield.
,,	25—Workhouse Hospital, Two Annexes to, Newcastle West	Guardians	J. D. Leahy, Archt., Cullinagh, Newcastle West.
,,	25—Hospital, Additions to Nurses' Quarters at, Purdysburn	Belfast Public Health Committee	Young & Mackenzie, Archts., Scottish Provident Bldgs., Belfast.
,,	25—Church Tower, Repairing, Llanfihangel-y-Creuddyn		G. T. Basset, A.R.I.B.A., Aberystwith.
,,	26—Water Tower, Botany Bay, Enfield	Metropolitan Water Board	The Chief Engineer's Department, Savoy-court, Strand, W.C.
,,	26—Shelter, St. Peter's-square, Stockport	General Purposes Committee	J. Atkinson, A.M.I.C.E., Boro' Eng., Town Hall, Stockport.
,,	26—Carnegie Free Public Library, Additions to, Mansfield	Free Library Committee	T. P. Collinge, Boro' Eng., Exchange-row, Mansfield.
,,	26—Labour Exchange and Probate Registry, Bristol	Secretary of State for War	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
,,	26—Electric Theatre, Forge-road, Port Talbot	Griffiths and Brokensha	D. J. Jones, M.S.A., Talbot-road, Port Talbot.
,,	26—School Buildings, Turvueren	Brabant Provincial Government	Gouvernement Provincial du Brabant, Bruxelles.
,,	27—Tuberculosis Patients' Pavilion, Hill Top, Bromsgrove	Hospital Committee	A. Vernon Rowe, Archt., 30, Foregate-street, Worcester.
,,	27—Assembly Hall and Class-rooms, Pantyffynon	Hendre C.M. Church	R. S. Griffiths, M.S.A., Tonypandy.
,,	27—West-End Club, Additions to, Amble		The Secretary, West-End Club, Amble.
,,	27—No. 1, Penlu-terrace, Additions to, Tuckingmill	Tuberculosis Committee	C. L. Cowlard, Clerk, Council Offices, Bodmin.
,,	27—Lifeboat House, Fraserburgh	Harbour Commissioners	A. Tarras, Clerk, Town House, Fraserburgh.
,,	27—Grand Stand, Victoria Field Football Ground, Street	Football Club	F. Simpson, Sec., High-street, Street, Somerset.
,,	29—Royal Aircraft Factory, Additions to, South Farnborough	Secretary of State for War	The Director of Barrack Construction, 80, Pall Mall, S.W.
,,	29—Broomhill Schools, Additions to, Mansfield	Education Committee	T. P. Collinge, A.M.I.C.E., Boro' Eng., Exchange-row, Mansfield.
,,	29—Swimming Pond, Storie-street, Paisley	Town Council	F. Martin, Town Clerk, Municipal Buildings, Paisley.
,,	29—Maenllwyd House, Renovation of, Newport	Mrs. James	George, Son, and Davies, Solicitors, Cardigan.
,,	30—Machinery and Storage Depot, Well-street, Paignton	Urban District Council	The Surveyor, Town Hall, Paignton.
,,	30—Court House, Limavady		The County Surveyor's Office, Londonderry.
,,	30—Branch Library, Extension of, West Ealing	Town Council	W. R. Hicks, A.M.I.C.E., Boro' Eng., Town Hall, Ealing, W.
,,	30—Girls' Homes and Mortuary, Haslingden	Guardians	H. Ross, A.R.I.B.A., 15, Cannon-street, Accrington.
,,	30—Four Workmen's Dwellings, Wantage	Rural District Council	J. W. Harris, Engr., East Challow, Wantage.
,,	30—Schools, Additions to, Kimpton, Hants	Rev. J. W. Brady Moore	B. D. Cancellor, Archt., 12, Jewry-street, Winchester.
,,	30—Two Pigsties, Highfield, Llantwit Major	Glamorgan County Council	The Glamorgan County Hall, Cardiff.
,,	30—Manual Instruction Room, Troedyrhiw		The Borough Architect, Town Hall, Merthyr Tydfil.
,,	30—Nurses Home at Workhouse, Additions, Great Yarmouth	Guardians	Olley and Haward, Archts., Queen-street, Great Yarmouth.
Oct.	1—Attendants' Cottages, Redmires and Low Bradfield	Sheffield Water Committee	The City Architect, Town Hall, Sheffield.
,,	1—Old Town Hall, Alterations to, William-street, Woolwich	Borough Council	J. R. Dixon, M.I.C.E., Boro' Eng., Town Hall, Woolwich.
,,	2—Fire Station, Enlarging, Hampton	Urban District Council	E. Cozens, Clerk, Public Offices, Hampton, Middlesex.
,,	2—Council School (230 places), Sutton Valence	Kent Education Committee	W. H. Robinson, M.S.A., Sessions House, Maidstone, Kent.
,,	2—Bowling Green, Extending Pavilion at, Annan	Bowling Club	P. M'Giverin, Hon. Sec., Bowling Club, Annan.
,,	2—Reading Room, Hampton Hill	Urban District Council	E. Cozens, Clerk, Public Offices, Hampton, Middlesex.
,,	4—Drill Hall, Additions to, Guildford	Surrey Terr. Force Assoc.	Jarvis & Richards, Archts., 10, Queen Anne's Gate, Westminster.
,,	4—Girls' Secondary School (210 places), Leigh	Town Council	H. Littler, County Archt., 16, Ribblesdale-place, Preston.
,,	6—Semi-Detached Villas (18), Cwmaman	Penybryn Building Club	J. Llewellin Smith, Archt., Aberdare.
,,	6—Cottage Homes, Eastry, Sandwich	Guardians	Jennings and Gray, Archts., 4, St. Margaret's-st., Canterbury.
,,	6—House, Cwmaman	Mrs. M. Wilson	J. Llewellin Smith, Archt., Aberdare.
,,	6—Theatre, &c., 77 and 78, George-street, Limerick	M. W. Shanly	J. O'Malley, B.A., B.E., Archt., 10, Glentworth-street, Limerick.
,,	7—Parc Gwyllt Asylum, New Block at, Bridgend	Visiting Committee	R. S. Griffiths, M.S.A., Archt., Tonypandy.
,,	7—Houses (52), New Town, Houghton-le-Spring	Urban District Council	J. W. Holbrook, Sur., Newbottle-street, Houghton-le-Spring.
,,	10—New Post-office, Bulford Camp	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
,,	22—Repairs to Forts (Six Months), Milford Haven	War Department	The Royal Engineer Office, Hobbs Point, Pembroke Dock.
No date	—House and Steading, Tregallon, near Dumfries		W. G. Coles, Chief Sur., 29, St. Andrew's-square, Edinburgh.
do.	—Workmen's Dwellings (24), Tuffley, Gloucester		La Trobe and Weston, Archts., Unity-street, Bristol.
do.	—House and Steading, Denbie Mains, Ruthwell		W. G. Coles, Chief Sur., 29, St. Andrew's-square, Edinburgh.
do.	—New Council School, Grantham	Education Committee	The Burgh Sur., Guildhall, Grantham.
do.	—Greenhill House, Additions to, Micklethwaite, Bingley		Nunns and Bracewell, Archts., Bank Chambers, Bingley.
do.	—Six Houses, Stubshaw Cross, Bamfurlong	Bryn Gates Co-op. Soc., Ltd.	P. Bullough, The Willows, Bamfurlong.
do.	—Bungalow, Willerby		Freeman, Son, and Gaskell, Archts., 11, Carr-lane, Hull.
do.	—Residence, Ebbw Vale, Mon.	A. C. Fendick	W. Rosser, Archt., Wilding's Chambers, Newbridge, Mon.
do.	—Six Workmen's Houses, Greenhall	Anthony Cowdy and Sons	H. Hobart, Archt., Scottish Provident Buildings, Belfast.
do.	—Church Institute and Schools, Withernsea		J. R. Ansdell, Archt., 9, Bishop-lane, Hull.
do.	—Pair of Cottages, Whaley		T. G. Eadson, Whaley, Mansfield.
do.	—St. Mary Church, Buxton		Caws, Steel, and Caws, Archts., 22, Fawcett-street, Sunderland.
do.	—Residence, Ebbw Vale, Mon.	N. Roberts	W. Rosser, Archt., Wilding's Chambers, Newbridge, Mon.
do.	—Methodist Manse, Alterations to, Moy		H. Hobart, Archt., Scottish Provident Buildings, Belfast.

ELECTRICAL PLANT.

Sept.	20—Plant, Wigan	Corporation	J. Slevin, Boro' Elec. Eng., Bradford-place, Wigan.
,,	22—Turbines, MacDonald-road, Edinburgh	Town Council	The Engineer, Dewar-place, Edinburgh.
,,	23—High-Tension Switchgear, Greenwich, S.E.	London County Council	The Clerk, County Hall, Spring Gardens, S.W.
,,	24—Cables, Hammersmith, W.	Borough Council	G. G. Bell, Eng. and Man., 85, Fulham Palace-road, W.
,,	29—Overhead Equipment, Dundee	Corporation Electricity Department	W. H. Blyth Martin, Town Clerk, City Chambers, Dundee.
,,	29—Plant, Worthing	Corporation	J. Kennedy Allerton, Town Clerk, Municipal Offices, Worthing.
,,	30—Plant, Leicester	Tramways and Electricity Com.	T. R. Smith, A.M.I.E.E., Market-street, Leicester.
,,	30—Two Cranes at Docks, The Piræus		The Chairman, Harbour Board, The Piræus.
Oct.	7—Electrically Driven Machinery, Melbourne		The Deputy Postmaster General, Melbourne.
,,	7—Generating and Distributing Plant, Ilkley	Urban District Council	F. S. Eckersley, Clerk, Town Hall, Ilkley.
,,	14—Cable Distributing Boxes (100), Melbourne	Deputy Postmaster-General	The High Commissioner for Australia, 72, Victoria-street, S.W.
,,	31—Machinery and Plant, Damanhour	Egyptian Ministry of the Interior	Mons. Le Directeur, Ministere de l'Interieur, Cairo.
Nov.	4—Insulators, Melbourne	Deputy Postmaster-General	The High Commissioner for Australia, 72, Victoria-street, S.W.
,,	12—Two Alternating-current Voltage Regulators, Dunedin	City Corporation	The Town Clerk, Dunedin, N.Z.
,,	12—Switchboard, Adelaide		The Deputy Postmaster-General, Adelaide.
,,	12—Arc Lamps, Melbourne	Victorian Railways Commissioners	The Chief Storekeeper, Victorian Railways Offices, Melbourne.
,,	15—Overhead Electrical Equipment, Melbourne	Suburban Railways	Merz and McLellan, Engs., 32, Victoria-street, S.W.

ENGINEERING.

Sept.	18—Sea-wall Works, Broomhill and Lydd	Sewer Commissioners	Weldon and Stokes, Joint Clerks, 11, Bank-street, Ashford, Kent.
,,	19—Foundations for Gasholder Tank, Haverfordwest	Town Council	J. Gibbon, Gasworks, Haverfordwest.
,,	20—Aqueducts, Squillace and Vallefiorita, Italy		The Palazzo Municipale, Squillace, Italy.
,,	20—Craven Arms Waterworks Extension, Ludlow	Rural District Council	Willcox and Raikes, Civil Engs., 63, Temple-row, Birmingham.
,,	20—Piling and Rubble Pitching, River Dearne, Darfield	West Riding Highways Committee	F. G. Carpenter, West Riding Sur., County Hall, Wakefield.
,,	20—Bridge, Shelfanger	Depwade Rural District Council	A. E. Scarlett, Clerk, Pulham Workhouse, Harleston.
,,	20—Sand-shields on Promenade, Lytham	Urban District Council	The Surveyor, Lytham.
,,	20—Rails for Electric Gantry Cranes, Southampton	Harbour Board	E. C. Poole, A.M.I.C.E., Southampton.
,,	22—Gas Compressing Plant, Dundee	Gas Commissioners	A. Yuill, Eng. and Man., Gasworks, Dundee.
,,	22—Railway from Jumilla to Cieza		The General Directorate of Public Works, Madrid.
,,	22—Vertical Retort Plant, Dundee	Gas Commissioners	A. Yuill, Eng. and Man., Gasworks, Dundee.
,,	22—Heating St. Paul's Church, Tavistock		The Vicar, St. Paul's Church, Tavistock.
,,	22—Heating Infant School, Englefield Green	Schools Managers	The Vicarage, Egham.
,,	22—Dredging (216,000cu.yds.), Aberdeen	Harbour Commissioners	R. G. Nicol, Harbour Eng., Aberdeen.
,,	24—Coal-Handling Plant, Hammersmith, W.	Borough Council	G. G. Bell, Eng. and Man., 85, Fulham Palace-road, W.
,,	24—Five Coal Storage Tanks, Hammersmith, W.	Borough Council	H. Mair, M.I.C.E., Boro' Sur., Town Hall, Hammersmith, W.
,,	24—Widening Bridge in Stone, Beeston	Cheshire County Council	H. F. Bull, County Bridgmaster, The Castle, Chester.

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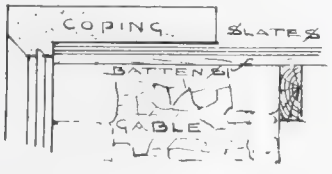
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Whitehall as it Appeared in the Reign of King Charles I.

ROOFS, GABLES, AND COPINGS.

The gables of churches and public buildings are usually finished with stone copings, and private houses, in some localities, are treated in a similar manner. Where oolite of almost any thickness may be obtained self-faced, as in the Cotswold Hills, stone copings are common on dormers as well as on the main gables of farm buildings, the whole roof-covering being thin slabs of the same material. Again, in Yorkshire, where sandstones may be obtained self-faced, of any thickness, slabs of this material are used for roof covering and for copings. The "old Red" of Herefordshire, and some of the adjoining counties, have quarries which yield self-faced slabs of an inch thick and upwards, and these were extensively used for roofing; but, owing to the walls in that district being what is known as "half timber" stone copings were never placed on

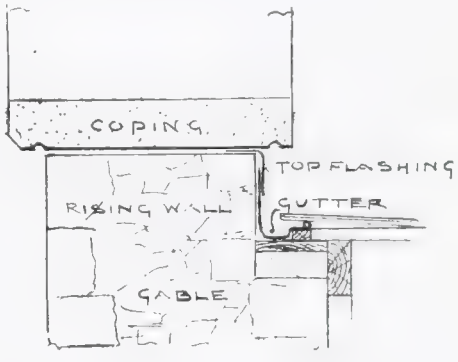


them. Before the introduction of railways, builders had to rely on local resources for their materials. Hence the old roofs were covered with stone slabs, where they could be obtained near at hand, instead of with rail-carried slates and tiles, as at present. The oolites of the Midland Counties (Stonesfield and Collyweston); the Carboniferous Sandstones of Yorks in open quarries and mines; the Wealden Beds of Kent (Horsham); and the "Old Red" of Herefordshire (Stockley Hill); all yield self-faced thin slabs, which make picturesque and efficient roof coverings as long as they last. These thin flags are sometimes called slates; but they are not true slates, for the latter are always obtained from clay rocks, and they split into leaves at some angle with the bedding of the rock. But stone slabs split with the bedding, and never at an angle with it. Slate is composed chiefly of silica and alumina, and its durability depends on the relative proportions of these minerals. Too much alumina makes a soft, earthy slate, which the frost of a few years will destroy; its presence is sometimes indicated by a blackish colour, and always by a dull sound when the slate is struck smartly by the knuckles. Some recently-imported American "Bangor" slates, which a builder tried to use on buildings being erected by us, were of this latter description; possibly they might last for ten or fifteen years; but not longer.

Roofing-slabs—not true slate—are fissile sandstones, sandy indurated clays, or thin-bedded oolites; they vary in thickness from ½in. upwards, and a square of roof covered with them will weigh from 11cwt. (Collyweston) up to 23cwt. (sandstone), as against 5½cwt. for Welsh slates, all laid to a 3in. bond. The best Welsh slate requires the lightest roof timbers, and it is the most enduring; but in this climate its good qualities are negatived by its bad ones, for it is such a poor conductor of heat and cold, that apartments in a roof covered with thin slate are unbearable in summer as well as in winter. The appearance of such a roof is monotonous in the extreme, and not comparable with stone tiles, which grow mosses and lichens ever-changing in colour on a roof slope strongly marked in courses by the thick slab edges. There are these disadvantages, however, in using stone tiles: they are heavy to cart and lay; they require strong roof-timbers; and their chief charm, the ever-changing vegetation with which they get covered, soon destroys them, and, if it is not periodically removed, the end soon comes.

From a constructional point of view, probably the best slate roof would be made with Bangor "tons"; they are about 3ft. by 2ft., varying in width, and strong enough to stand walking on, or ladder-carrying, without breaking. The size is considered objectionable, for they dwarf any building on which they are used. When slating is laid dry, snow will be driven up between the slates, and in wet weather rain will fill these spaces, so that, in a strong wind, blowing in gusts, water will be driven into the roof, and ceilings which catch it will be stained. Rendering, therefore, becomes necessary; but its use is universally misunderstood, for the mortar is plastered all over the underside of the slate, where it is of no use; indeed, it generally falls off, and the joints are left open. The sole object of rendering would be attained by carefully pointing the joints of the slates on the inside, and leaving the slate surfaces uncovered. It is obvious that when slates are laid on felt or on boarding, they cannot be rendered; but in such cases, wherever there are open joints, rain and snow will drive through them, though no sign of such leakage will be seen on the ceilings inside.

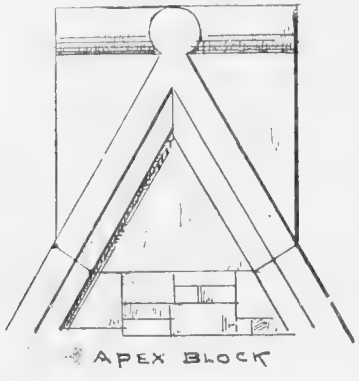
It is not easy to say what becomes of the rain and snow driven into such roofs, we have never seen any sign of leakage in these cases. Possibly any water runs down the felt and drops into the gutters, or it evaporates. We have often noticed that when slates are to be nailed to battens fixed in felt, if rain falls, the felt is not waterproof, for the rain will drop from every hole made by the batten-nails. If, therefore, such a roof is to be made waterproof, before the slates are laid it should be tarred all over the battens and felt. With regard to the bond of slating, it is obvious that the steeper the slope of the roof, the less bond the slates will require; and the flatter the slope, the greater that bond must be. But we have never seen any way suggested for finding what that bond should be for various slopes. Having the proper bond for any one slope fixed, we have therefore worked out an easy way of solving this question for every pitch. By common consent, the bond for a slope of



60deg. is 3in. What, then, would afford similar protection in a roof of 45deg.? If a slope of 60deg. is plotted, and 3in. measured along the slope, it will be equivalent to 2½in. measured on a vertical line. If, now, this 2½in., upright is projected against a line sloping at 45deg., it will measure 3¾in.—the bond required; and for every other slope, if a vertical height of 2½in. is projected against it, the length measured along the slope will give the bond equivalent to 3in. in a slope of 60deg. The figures given are only approximate, and were obtained by plotting—a process near enough for all practical purposes. For strict accuracy, trigonometrical calculation would be necessary. According to this reasoning, if a wall is weather-slated vertically, the bond should be 2½in.; but we have never seen any experiment made to ascertain what the minimum vertical bond should be to make the work weathertight, so that, after all, much of our work in this respect is quite in the dark, and our calculations are only by "rule of thumb."

At seaside places, where walls, usually on the first floor, are weather tiled, the

nails are driven into the fronts of brickwork underneath, so that the tiles must have a bond of 3in., or of 2in., as the tiles are 10in. deep, and the bricks 3in. Tiles must be nailed to an upright wall-face; but they should be hung only to battens on sloping roofs, and never nailed. Every builder knows that slated eaves must be started with an extra under-course, and specification-writers apparently do not know that the depth of this course must be the weather of the slating generally, plus the bond, for they usually

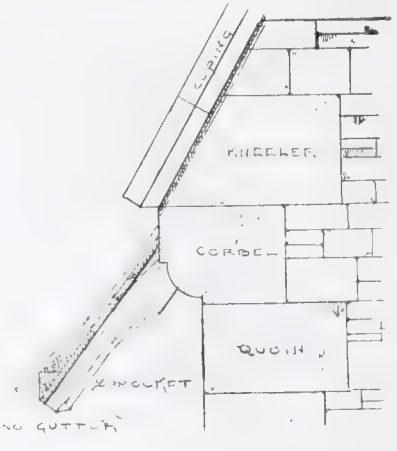


specify a fixed depth, regardless of the size of the slates. Now, the depth of the under-eaves will always depend on the length of the slates used.

Slating is peculiarly liable to be stripped by wind along the eaves: hence it is usual to bed the eaves-course in mortar, and to give the lower courses a "bell-cast" by nailing a tilting fillet to take the tail of the first course of slates. This closes the tails of the second and third courses close on the backs of the slates immediately under them. In Mediæval work this "bell cast" is given by sprocket pieces which run for 3ft. or 4ft. up the rafters, and project from 18in. to 2ft. beyond the walls. These are fixed at a flatter angle than the rafters, to the backs of which they are nailed. The sprockets are shaped where they project, and a line of tilting fillets is nailed along the extreme edges before the slating or tiling is commenced. A most important thing to be attended to in roofing is beam-filling between the rafters and from the wall to the slates. If this is not done, birds will build in the roof, and the noises they make render the rooms in the attics unbearable. It has often been a puzzle to us to know how to finish hips on slated roofs—whether with lead rolls and lead flanges dressed over the slates outside, or with closely-cut slates over lead gutters formed underneath on each side of the hip rafter. We have seen both stripped in storms, even where the sloping slates were cut from specially large sizes so as to avoid the use of small triangular pieces. Some architects like the closed hip, others the lead roll; and it is probable that, in many cases, appearance will be thought of more than the security of the slates.

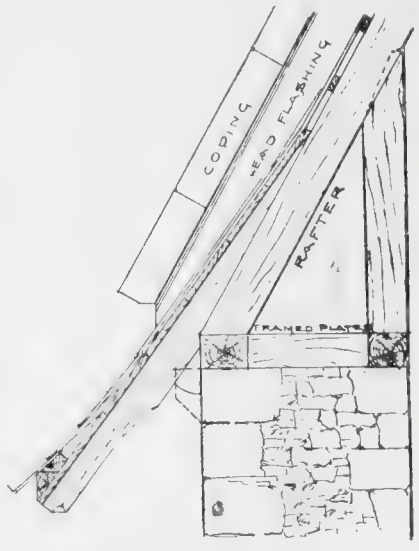
In cottage building there is a tendency to make the roof fit the walls exactly, giving a minimum of projection at the eaves, and none along the gables. A cottage without a bold projecting eave is like an eye without an eyebrow, and when there is no barge, or verge, and projection, the gable is like a hat with the brim torn off. If only for appearance' sake, therefore, the roof should seem to cover the house completely; and for the protection of the walls it is absolutely necessary that it should do so. When the eaves project, they should be boarded on the rafters or under them. In the latter case the boards may be nailed to the underside of the rafters, or they may be secured to horizontal bearers let into the wall at one end, and nailed to the rafters at the other end. In all cases there must be eave-boards. The gable-slates should project 3in. beyond the finished wall-surface, and, as they would probably strip in heavy gales, it is usual to bed a course of narrow slates, say 9in. wide, under the battens, and projecting 3in., like the slates, the space between the upper and under slating being afterwards filled with Portland cement. This treatment will give a thick, well-defined projecting line along the gable, and it will afford a most efficient protection for the walls.

To return to gable copings; the object sought in using them is to secure the slating or tiling from being stripped by high winds. The edges, where exposed, catch the wind, and if they are not protected in some way, the roof soon suffers. Copings, too, project beyond the wall face, and they protect the wall from damage by rain. Stone coping is generally set on a "rising wall," so called because it rises 6in. or more above the roof covering, and its object is to raise the coping sufficiently high to fix lead flashings under it. These flashings are always in two separate pieces: one to go under the slates, and turn up against the wall (it is usually 9in. wide), and the other to be set under the coping, and turned over the flashing first described (its width being about 6in); 5lb. lead is used in each case. A rising wall requires protection on the top from both rain and frost, hence the coping is worked specially to cover it. The width of the coping is not fixed; but it will depend on the thickness of the rising wall, which may be 14in. if of brickwork, and 18in. if of stonework. In the first case, the coping will be 20in. wide, and in the latter 2ft., 3in. projection each side being given to the coping, which is generally 4in. thick. All copings should be throated. The edge towards the gable may be moulded, and that towards the slates left plain. The whole arrangement is therefore necessitated in this way: First, the slates are secured from being wind-stripped along the gables by being butted against a "rising wall"; the rising wall



must be high enough to allow flashings to be properly inserted; the wall itself must be protected on the top from damage by rain and frost, and this end is secured by the coping.

Gables slope, and if steps were not taken to prevent it, copings would soon slip down and come to the ground. To guard against this, bond-stones form part of the coping; they are worked in at starting at the eave, every 5ft. or 6ft. along the slope, and, finally, an apex-block closes both sides of the coping with a solid angle. The first stone laid at the eave is called the "kneeler," or "summer stone"; the others are "bonders." Each bond has a piece of coping worked on one end, in the solid, the other end being tailed into the gable, so that the coping cannot slip without drawing the bond out of the gable, and this would be impossible. It has been said that a top flashing is always bedded under the coping; but this could not be done where bonds occur, for the coping is worked in the solid on them. In such cases it is necessary to sink a groove in the stone under the



coping on the roof side, to take the top flashing, which is pinned in with lead wedges or slate. The joint made by one piece of coping with another is usually straight; but it is sometimes rebated, for the fancied security such a joint would give against soaking rain. Coping is often laid directly on the slating, which, in such cases, is carried out flush with the gable face. Here it is usual to sink the coping an inch where it is bedded on the slates, the unsunk part overhanging the gables, and the rebate makes a watertight joint. Gables frequently show traces of leakage from the top, for the copings are badly set, badly jointed, broken, or the slates underneath are imperfect where they are laid directly on them; the lead flashings, too, may be imperfect, and only a careful search for all possible contributory causes can trace where the defect is.

Where roof slates abut against a rising wall, the joint is made watertight by a small lead gutter, or by "soakers." In the former case, a slating batten is fixed parallel to the gable, and 3in. away from it; the lead, in lengths of 5ft., or thereabouts, is dressed on this latter, drawn to a piece of board fixed under it, and then up the rising wall, where it is covered with the top flashing already described. Soakers are pieces of lead about 9in. wide, and the length of the weather and bond of the slates; one of these is worked in with each course of slates, half the width being set under the slates, and the other half turned up against the rising wall.

ORNAMENTAL TILE-WORK.—I.

The endeavour to "copy" Classic principles, features, etc., with moulded bricks of a set size, and, therefore, quite unfitted for most work, is hardly calculated to appeal to the genuine architect. Neither is it correct to carve and twist up bricks into all sorts of queer-looking shapes, curly pediments, etc., borrowed from the Mediæval (if not prehistoric) cabinet makers' forms which belong to early grotesque woodwork and not to the domain of real architecture. It is difficult to define which is worse, the latter or the pretentious pseudo-Classic villa, with its coating of false cement bays, porch, etc., which, after all, only presents the appearance of pieces of ornate Roman ruins

bolstered up with brickwork. It is quite time materials were more generally studied from a true basic standpoint as general materials, not merely as individual ones, applicable

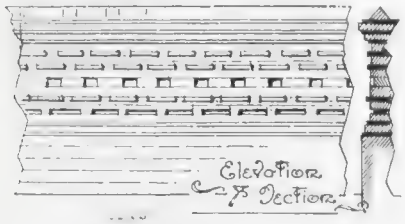


Fig. 1.

alone to certain set positions and governed by suppositious restrictions.

It is, strangely enough, habitually the custom to regard any particular material or specialty—such as the tile, for instance—to be wholly or only utilised in certain carefully-

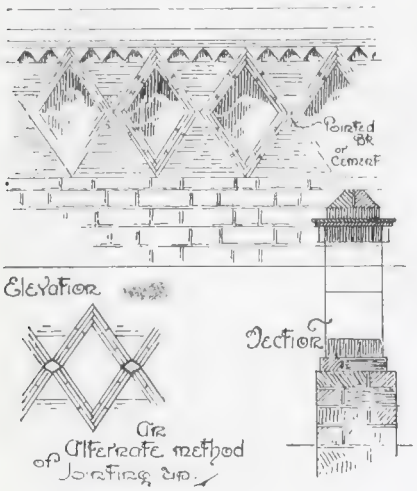


Fig. 2.

defined positions, mainly for roof work, face and gable weathering, or for pavements. To take such a limited view of a material is quite erroneous, instead of viewing it, as an advanced architect should, on the broad

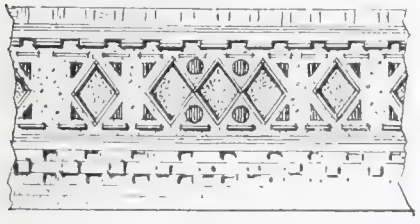


Fig. 3.

grounds of general constructive utility, combined with many fresh possibilities of design and artistic effect. It is a constructive medium adaptable to many other departments, where it may fill a useful constructive position with all due strength and safety, at

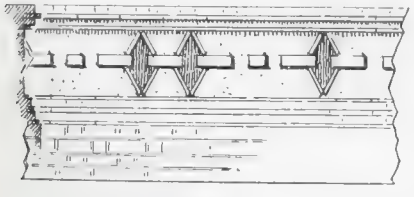


Fig. 4.

the same time fill an ornamental one also. Viewed from this aspect, by their introduction more into general work, it is possible to produce many good, original designs and some beautiful ones.

Tiles are most useful where it is requisite to produce a more refined effect in matters of design, either as a fillet course introduced in single or double line to the projecting bricks of a plain cornice or other similar

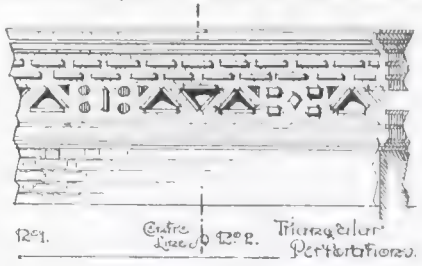


Fig. 5.

features. Used almost, or entirely, alone, with roughcast, or in concrete construction, they form the most valuable and ready-made accessory for decorative work in many types of design. Most of the customary roofing hanging, or even rough paving, tiles are readily adapted to, and combine harmoniously with, elevational brickwork, producing more refined designs. Although at first glance, perhaps, the use of thick paving tiles, for instance, might hardly appear correct to



Fig. 6.

some, there is no reason why they should not be so adopted and used. Especially as they have the added recommendation of cheapness, combined with utility, in dispensing with a great deal of costly cutting, which would certainly prove the case were similar effects carried out in brick. On the other hand, there is usually a great difficulty in satisfactorily adopting the ready made

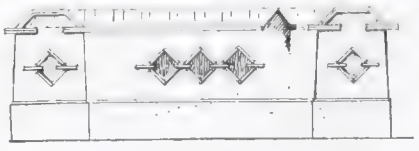


Fig. 7.

moulded brick on customary lines of design, so much so that it often involves the production of specially-moulded bricks where the architecture is at all carefully considered and studied. The latter ideas are very evidently the reasons which prevent any real attempt at studied design in the decoration of a great many brick, roughcast, and concrete structures at present.

LINING, GARDEN, AND PIERCED WALLINGS.

With the introduction of tiles, lining, either continuous or broken, raised and sunk

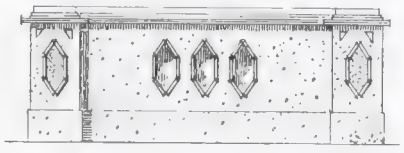


Fig. 8.

work, panelling, massed backgrounds, etc., can be improved by the thin band produced by tiles in continuous coursing. Similar designs can also be carried out in tile-work alone, thus producing a finer system of design. A simple design for garden walling, somewhat of this character, is illustrated by Fig. 1. This should show clearly enough the general principles of adaptation referred to previously, without more elaboration or further illustrations based on the previous work. The tile has so many possibilities of its own which require illustrating that it would probably prove merely a waste of space to trace out very similar variations more

heavily. In pierced wallings the tile is admissible for the composition of many bold designs, possessing a large amount of effect in simple patterns, and also with the added advantages of simplicity and quickness in con-

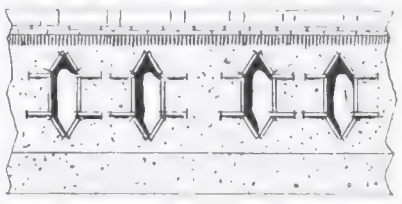


Fig. 9.

struction, such as illustrated by Fig. 2., based on the diamond patterns. The triangular spaces top and bottom being filled with tiles, or two or three rows of tiles with a course of bricks in a different colour, run alternately, could also be used as a further relief. A somewhat similar type is illustrated by Fig. 3, with tile details. The diamond pattern here forms a sunk panel, with smaller perforations formed on a pointed brick, and short lengths of earthenware piping of any

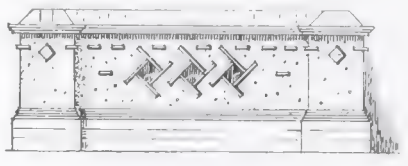


Fig. 10.

convenient diameter. The latter could be left in or withdrawn, as preferred. Such a wall could be easily and readily constructed in concrete, with roughcast on face. The roughcast in the panels being of a finer texture, would produce a further variation in design. Fig. 4 forms a bold design which is very effective, though simple. The upper and lower portions of the perforated panel course being formed with four-and-a-half brick, with

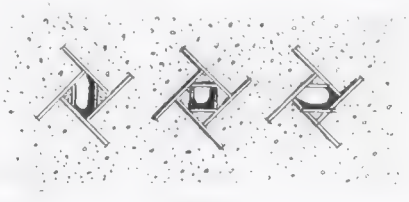


Fig. 11.

a centre projecting course in broken line, as shown. The brickwork to panels, behind the tiles, might be either stepped to them or simply built up straight, toothed, and filled in with roughcast. Fig. 5 illustrates the adaptation of the tile to triangular perforations, which produce a somewhat novel but pleasing effect in conjunction with a little raised brickwork. A further variation of same, in large and small perforations, with a pointed brick introduced as a key-block, is seen in Fig. 6. Groups of small diamonds, on an equilateral basis, with a single tile in the

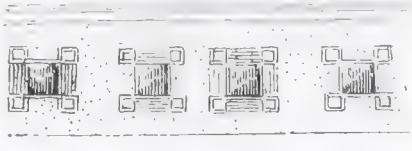


Fig. 12.

centre, as a little rustication, also have a good appearance, either by perforations or introduced as sunk panels, illustrated by the angle pillars on Fig. 7. The same method, extended into a lozenge-shaped panel by tiles forming straight sides, produce other pleasing variations. These can again be rendered more effective by tile quoins or rustications, as illustrated by Figs. 8 and 9. Such panels could,

of course, be carried much further in a similar scheme of decoration by introducing raised and sunk work of various designs, either in brick or tile, or a combination of both. Another method of simple effect is that produced by irregular rustication, after the style illustrated by Figs. 10 and 11. Other

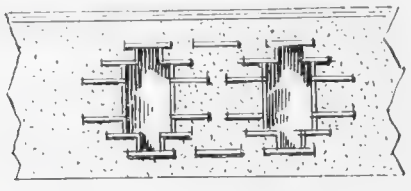


Fig. 13.

forms, more suitable where a somewhat formal aspect is desirable, are illustrated by the designs on Fig. 12, the angle squares being put in with small-size tiles. These can again be varied by filling in the sides between the smaller square with straight tiling, as indicated. The same pattern could also be used on the diagonal, with the further slight enrichment produced by the introduction of pointed bricks in the angular

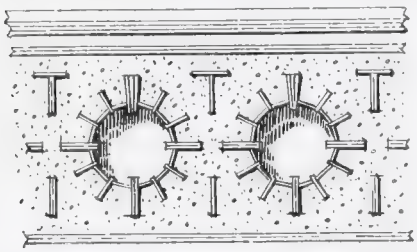


Fig. 14.

spaces thus formed. Stepped panelling also, with tile rustications or quoins, prove very satisfactory, as illustrated by Fig. 13. Circular patterns are very useful for many positions, and can be readily formed, after the nature seen in Fig. 14.

W. G. Kerby.

WHAT RAIN-FLOODS CAN DO.

The engineer in England is comparatively immune from the catastrophes which wreck his work in other countries; but, even this year, one or two significant warnings have been given of what abnormal rainfalls can do: happily, nothing of the nature which prostrated a great American railway system last spring, the results of which are, perhaps, hardly yet fully recorded.

There is a water-shed running north-east and south-west through the northern part of Ohio. To the south it drains by the valleys of several rivers into the Ohio River. Dayton, Zanesville, and Columbus are the three principal cities in these valleys. Each one had the flood of its existence. In Ohio alone there were destroyed 22,000 houses, while 35,000 were seriously damaged by water. A few miles above Zanesville the Muskingum produced a raging lake fifty-one miles long, and this over the main line of the Pennsylvania system, between Pittsburg and Columbus. On the north was formed another east-and-west lake of a length of thirty miles, and this covered the main line of the Pennsylvania between Pittsburg and Chicago.

These "lakes" were anything but pacific creatures. They were filled with rushing, boiling currents so powerful that, during the zenith of their existence, no ordinary boats could live in them. They tore out embankments, carried steel-girder bridges long distances, and eroded away the soil of thousands of acres of fertile land, depositing in its place sand and gravel and stones.

Governor Cox, of Ohio, in the early days of the flood, gave out a statement to the effect that the disaster would prove to be a greater one than the San Francisco earthquake. This was regarded, in some quarters, as one of the wild reports emanating from the flooded district. It has proved more than literally true. It should be borne in mind, too, that there was no insurance against the losses occasioned by the flood. Even after the abolition of temporary relief, some 16,000 families required financial relief in order to return to housekeeping.

Generally speaking, there fell on this Ohio water-shed, in less than three days, more than three months' normal rainfall; and it came when the ground was thoroughly soaked, and every river and stream filled to its limit. The only wonder is that the damage and the loss of life were as small as they were. Governor Cox says that in Ohio alone the population affected numbered a million and a quarter souls, and that the direct money loss was above 300,000,000dol.

This was the situation that confronted the Pennsylvania Railroad in the last week of March, 1913: Its lines all through Ohio, running from east to west and from north to south, were literally shot to pieces; bridges were gone, tracks and embankments swept away—holes in a thousand places; no through line anywhere. Its telegraph and telephone system, too, was a temporary wreck. Passenger and freight cars were marooned, and above 1,250,000 human souls were dependent upon the railway as a means of bringing them the aid and succour they needed in the shape of food, medicines, and the ordinary necessities of life.

To go into detail of the Pennsylvania losses will hardly furnish an adequate idea of the losses as a whole; but it may be interesting to give a few details, only suggesting that the problem met would not have been a simple one had the damage been concentrated instead of being widely scattered, and consequently very difficult to get at efficiently:—

Number of bridges lost, 24; number of bridges damaged, 50; number of spans lost, 39; number of spans damaged, 48; bridges lost—length in feet of road, 3,597; bridges lost—length in feet of single track, 4,318; bridges damaged—length in feet of road, 4,189; bridges damaged—length in feet of single track, 6,239. The estimated cost of replacing these bridges is 1,027,116dol.

Length of trestle built for single track, in miles, 1.94; length of track built for double track, in miles, 0.96; length of trestle built for three tracks, in miles, 0.02; length of trestle built—miles of road, 2.92; length of trestle built equivalent to miles single track, 3.92. The estimated cost of these trestles is 336,144dol.

Length of single-track road requiring repairs, in miles, 88.7; length of double-track road requiring repairs, in miles, 41.1; length of three-track road requiring repairs, in miles, 2.5; length of four-track road requiring repairs, in miles, 2.8; length of road requiring repairs, in miles, 135.1; length of road requiring repairs, equivalent to miles single track, 189.6. The estimated cost of these repairs to the road is 1,396,290dol.

In addition to the above, damage to stations and other buildings was 70,900dol; to equipment, 84,285; and to telegraph lines, 107,505dol. The direct property loss to the Pennsylvania is estimated at 3,600,000 in round numbers.

OUR INLAND WATERWAYS AND HOW TO UTILISE THEM.

A TRIP ON THE WARWICK CANAL.

At the invitation of the executive committee of the Waterways Association, a number of gentlemen interested in the municipal and commercial life of Birmingham enjoyed an excursion last Saturday afternoon on the Warwick and Birmingham Canal. This canal forms part of the waterway route between Birmingham and London, and the object of the trip was to stimulate interest in the question of the improvement of the waterways of the country. The company, which included men of different schools of thought interested in economic and labour questions, went by train from Birmingham to Lapworth, where, at the Navigation Inn Wharf, they inspected a fleet of steam and motor barges. The steamboats have been in use for many years, but the motors, of 15H.P., are a comparatively recent introduction. The visitors were surprised to learn that the motors were of Swedish make, installed because motors of English manufacture were found in practice to be less satisfactory in every way than those from Sweden. After the inspection the company embarked on a canal boat, which, in half an hour, was towed by a motor barge as far as Rowington Wharf, a distance of about a mile and a half. There the visitors were enabled to enjoy the hospitality of the executive committee, tea being presided over by Councillor Neville Chamberlain.

ADVANTAGES OF CANAL TRANSPORT.

Advantage was taken of this interval in the programme by Mr. Frank Impey to explain the object of the excursion. The canal, he pointed out, was one of the four arms of "the Cross," which the Royal Commission recommended for development to connect the ports on the Humber, the Mersey, the Bristol Channel, and the Thames. It commenced at Birmingham and ended at the Paddington basin or at Brentford on the Thames, and would, with the whole of "the Cross," be improved to the 100-ton standard, which would permit on any part of the waterway the use of 100-ton barges, with locks capable of passing three such barges at length in one operation, or six 40-ton barges in pairs abreast. The length of the route from Birmingham to Brentford was 135 miles, with 160 locks; but if the development of the canal were undertaken the distance would be reduced to 128 miles, with 31 locks and 15 lifts. These alterations would afford opportunities for enormous economies in time and cost of transit. At present steam barges occupy sixty hours in the journey from Birmingham to London, but owing to the size of the locks and the construction of the canal, small advantage could be taken of mechanical haulage. Whereas now one man was employed for every 7½ tons of cargo carried, if the recommendations of the Royal Commission were adopted one man would be able to deal with 15 tons. Then, instead of the 160 locks which had to be passed through, there would only be 31 locks and 15 lifts. In this way a great reduction in time would be effected, while, moreover, the boats would be able to travel faster, securing a saving in time of from 25 per cent. to 33 per cent. The present engine power, added Mr. Impey, would, with an efficient waterway, instead of hauling one barge carrying 28 tons, haul three, and only a slight increase in the size and power of the engine would be necessary to enable a boat train of 220 tons to be hauled, if the 100-ton standard canal were provided.

Councillor Neville Chamberlain, in reply, said the Royal Commission reported in favour of centralising and unifying the control of the four routes of what was known as "the Cross." The Waterways Association were endeavouring to induce the Government to take up those principles, for they believed that the appointment of a Waterways Board to have control of the various routes would give a great impetus to canal traffic. If such a board were appointed he did not think they would stop at unifying the canals; they would proceed to improve them. He did not suggest that they should begin by spending a vast sum of money in trying to make the four routes into four ship canals, but they might with enormous advantage spend a comparatively small sum every year in strengthening the weak points in the chain. The benefit from that expenditure, he thought, would quickly be made manifest in the very considerable increase which would take place in the through traffic by canal. The nationalisation and improvement of "the Cross" would be of great national benefit and add to the prosperity of the whole country. The Waterways Association was a national organisation, and they wanted the support of local authorities. They would naturally have to meet with strenuous opposition from the railway companies, and a great deal of spade work would have to be done in educating public opinion before they could get the Government—no matter what party it belonged to—to move in the matter. One criticism against the expenditure that

would be incurred was that, while particular localities would be benefited, the whole country would have to bear the expenditure, and that there did not appear to be any disposition on the part of the local authorities who were going to derive the greatest benefit to bear any part of the cost. So far as Birmingham was concerned he intended to propose a resolution at the next meeting of the city council, first of all in favour of a general approval of the principles of the Royal Commission, and then the acceptance by the city council of the principle of a contribution towards the cost. The four arms of "the Cross" converged on a rough circle which included Birmingham, Wolverhampton, Walsall, Dudley, Bilston, and the Black Country generally. Whoever benefited from the proposals of the Royal Commission the area included in that circle must benefit most, and if Birmingham could hasten forward the project by accepting the principle, without committing themselves to any details, sum, or method of guaranteeing interest or giving a contribution, they ought to do so.

The company then re-embarked on the canal-boat, which, from Rowington Wharf to Hatton was drawn by a horse. The distance was about three and a half miles, and this was accomplished in an hour. The total distance of the canal excursion was about five miles, and it was an exceedingly pleasant and interesting trip. There were no locks to bar the way, but there was Shrewley Tunnel, about a quarter of a mile long, to pass through, and this was a novel experience to most of the visitors.

THE OLD FARMHOUSE IN TOTTENHAM COURT ROAD.

Messrs. Heal and Co., Ltd., have issued an interesting illustrated description of the old Georgian farmhouse which still exists in their delivery yard, written by Mr. Ambrose Heal. The land on which the house stands was known as Cantelowe Close, and the farm was called Capper's Farm, after the family which long held it as tenants of the Dukes of Bedford. One William Mace, a carpenter, appears to have built the house, which has stood until the present year. For on



THE FRONT DOORWAY, WITH PARISH BOUNDARY MARKS.

March 22, 1776, a lease for seventy-eight years was granted to him at £7 a year by Gertrude Dowager Duchess of Bedford—a great figure in 18th-century Society, as readers of Horace Walpole will remember—her son-in-law, George Duke of Marlborough; Caroline Duchess of Marlborough, his wife; and Robert Palmer, agent to the late Duke of Bedford, as trustees under the duke's will, "in consideration of the great expense he hath been at in erecting a farmhouse on part of a field known as 'Cantelowe Close,' and that he, the said William Mace, shall build proper and convenient sheds and other outhouses for the accommodation of forty cows at the least."

The house stood on the old boundary between the parishes of St. Giles'-in-the-Fields and St. Pancras, as is testified by the boundary marks St. Giles, 1784, and St. Pancras, 1791, let into the wall above the doorway. (See illustration.) Until the year 1900 the ancient custom of beating the bounds was kept up by the parish officers and the schoolboys of the neighbourhood. The premises are now, however, entirely in the parish of St. Giles.

Meanwhile the furniture trade, for which Tottenham Court-road has won world-wide renown, was coming into existence. In 1810 John Harris Heal, who had previously been in business with a firm at Savile House, Leicester-square, on the site of what is now the Empire Music Hall, set up business as feather dresser at 33, Rathbone-place, on the north side of Oxford-street. In 1818 he moved to 203, Tottenham Court-road. After his death, in 1833, his widow carried on the business, taking her son, John Harris Heal, into partnership in the following year, and trading as Fanny Heal and Son. (See Tallis's Street Views, 1837.) Fanny Heal died February 26, 1859, and was buried in St. Pancras Cemetery at Finchley.

In 1840 John Harris Heal the younger, who was the only son of the founder of the firm, purchased "Miller's Stables" and erected the buildings which—as No. 196, Tottenham Court-road—were the nucleus of the premises now occupied by Messrs. Heal and Son, Ltd. In 1864 the increase of business made larger premises necessary. Nos. 197 and 198, Tottenham Court-road were acquired. The present premises and the adjoining cabinet factory were erected, for by this time to the feather bed and mattress manufactory had been added the making of bedsteads and all other bedroom furniture. In 1871 the old cowhouses and outbuildings were burnt down and packing rooms and a factory put up in their stead.

Ambrose Heal, jun., and Ralph Heal, great-grandsons of the original John Harris Heal, had been admitted into partnership in 1898 and 1905 respectively. In 1907, for family reasons, the firm was transformed into a small limited liability company, with Ambrose Heal as chairman and his two sons, Ambrose and Ralph, as managing directors. In 1912 Maurice Brewer, son of Alfred Brewer, joined the board of directors. During the last six years the business has doubled in volume. This increase has necessitated a corresponding enlargement of premises, which is now in progress. Fresh land, adjoining the original site, has been secured in Alfred-mews, and additional frontage in Tottenham Court-road. It is now proposed to rebuild the old shops, in order to bring the new and old into line, and construct at the rear a new model bedding factory, which will involve the demolition—regrettable, but inevitable—of the old Farmhouse. The architect of the reconstruction of the premises is Mr. Cecil Brewer, of the firm of Messrs. Smith and Brewer, of 2, Gray's Inn-square, W.C.

SIR HUGH LANE'S OFFER TO DUBLIN.

The Dublin Corporation had once again, and apparently for the last time, before it last Friday the question of the municipal art gallery and the conditions of Sir Hugh Lane's gift. On Monday week, as we stated in our last issue, a quorum was not formed at roll-call, and Friday's meeting was convened on a similar requisition. The lord mayor had himself sent out a circular letter to the members, asking them, for the credit of the city, to attend and decide the matter once and for all. In response to this appeal there were fifty members present at roll-call.

Miss Harrison moved the following resolution: "If the Mansion House Committee guarantees towards the expenses of the erection of an art gallery a sum equal to the difference between £22,000 and £45,000, this council approves of the erection of an art gallery on the site near the metal bridge, and further approves of the designs from Mr. Lutyens; and that this council, in view of the special circumstances of Sir Hugh Lane's guaranteeing any sum over £45,000, as well as the architect's fees, agrees to accept Mr. Lutyens as architect." She said they should not refuse a gift the like of which had never been offered to Ireland, or perhaps to Great Britain, within the memory of man.

Alderman Maguire seconded.

Mr. Ireland, a Unionist member, moved an amendment to the effect that, while grateful

to Sir Hugh Lane for his gift of pictures, the council was of opinion that the bridge site was most unsuitable and impracticable, and requesting Sir Hugh Lane not to insist on the bridge site, but leave the selection of a site and the inviting of designs for the site to the discretion of the council. Ninety per cent. of the citizens of Dublin, he said, were opposed to the bridge site. It was unkind and ungenerous of Sir Hugh Lane to make the stipulations he had made with reference to the acceptance of the pictures. He protested against the appointment of an architect who was not an Irishman. It was not the time to bring forward this project when they were in the midst of an industrial calamity.

In a discussion Mr. Quaid said he had evidence that the pictures were not worth £5,000.

Mr. Cosgrove, who seconded the amendment, strongly objected to the exclusion of Irish architects from competition when it was a question of putting down £60,000.

Alderman Vance, another Unionist member, thought it a degrading thing that the donor of a gift, however valuable, should put a pistol to the head of the recipients and say, "You must accept my conditions as to site and architect."

On a division the amendment was carried by 32 votes to 25, and when put as a substantive motion it was carried by the same majority.

MASTER HOUSE PAINTERS' AND DECORATORS' ASSOCIATION.

CONVENTION AT LEAMINGTON.

The twentieth annual convention of the National Association of Master House Painters and Decorators of England and Wales opened at Leamington last Monday night with a reception by the president (Mr. Thomas Sharp, of Leamington) and Mrs. Sharp, in the town-hall. The attendance included Mr. J. Higson, of Manchester, chairman of executive and president-elect; Mr. Thos. Foster (Burnley), hon. treasurer; Mr. W. G. Sutherland (Manchester), secretary; Mr. A. J. Teall (Birmingham), and others.

There was an exhibition of work sent in for the apprentices' prizes, and work done in Italy by Stanley R. Sleeps, Plymouth, and Ernest Sanderson, Burnley, in fulfilment of travelling scholarships.

On Tuesday the president, Mr. T. Sharp, gave his inaugural address. He said their association was educational, and it spent a large sum of money each year in prizes for their apprentices' work, and on a travelling scholarship of the value of £50.

Mr. W. G. Sutherland (Manchester, secretary) reported that the year had been memorable for the large number of disputes, in some cases resulting in strikes, and in all cases increases of rates of pay had taken place. It was many years since there had been an equal amount of change. In almost every case the demands included rates of pay and alteration of working rules. In some cases these were settled by the parties to the disputes without reference to an arbitrator. In other cases where agreement was not reached a reference to the arbitrator brought about a settlement; while at Chester, Derby, Altrincham, Darlington, and London matters went to the extent of a strike, causing much inconvenience and loss to all concerned. Oldham exhibited the promptest settlement of the year, and this was achieved at a single meeting by wise statesmanship and mutual concession. The men were granted an increase of pay and certain modification of rules, and the masters gained the point, which they considered of great value, of a later hour of starting work, breakfast being taken first. Altrincham presented the remarkable feature of no settlement. The strike dragged on indefinitely, the men drifting away and others taking their place.

Mr. H. Vigurs Harris (Plymouth) said their opportunity of financing their business by reasonable profits was encroached upon by drapers and furnishers, who set out model rooms. Leading architects had awakened to the importance of artistic decoration, and were bestirring themselves to have a school of decoration in London. The mistress of the house was now genuinely interested in the decoration of her home, and to a certain extent she had informed herself and knew what she wanted. That was an advantage. But a little more attention should be given to the practical experience and judgment of the man who had given all his life to the work.

The report was adopted.

The Mayor of Leamington offered the association a civic welcome. Mr. T. Kershaw Bonner, of Edinburgh, tendered the greetings of the master painters of Scotland, and Mr. Sibthorpe (Dublin) and Mr. W. Morrow, of Belfast, those of the master painters of Ireland.

RUSSIA AND HER PEASANT ARTS AND INDUSTRIES.

In the afternoon Mr. Howard C. Cleaver, of London, gave an address on "First Impressions of Russia and Her Peasant Arts and Industries," with sketch illustrations. He complained of the profusion of terracotta at the Winter Palace and other prominent buildings in Moscow, and jocularly suggested that members of that association could give the Russians useful hints regarding decoration of public buildings. Russia was essentially a religious country, and the domes of the cathedrals were generally of solid gilt. If one wanted to enter a trade in Russia the trade of the gilder must be the most lucrative. The columns of the church were of gilt or precious stones, and the walls covered with mosaic. The decoration was in the Florentine style.

The art of Russian peasants was indigenous; but there had recently been a great revival of Renaissance art. The colour scheme of the Russian peasantry was simply barbaric; when examined in detail it was fearfully crude, but when seen at a distance it had a pleasing effect. The houses were of wood, and there was no attempt at painting. The buildings were of a silver-grey colour. The houses were rotten for want of paint, and it seemed to him there was a considerable opening for members of that association in Russia.

THE NEW HOUSE DECORATION.

At the evening session, Mr. John Scott read a paper on "The Future of House Decoration in Painted Work," in which he inquired what in the immediate future should be the prevailing manner by which beauty should be given expression to through the medium of applied paint; and he endeavoured to throw some light upon the important changes which had taken place in style and direction. When the Trade Guilds were abolished their power did not immediately cease; the hereditary influence of their tradition clung for many years to the craft; but by degrees it was almost quenched, making way for the dominant sway of that objectionable overgrowth of civilisation. The first and absolutely essential character of a house decorated in the new style was that it must have no part of the structure relieved or decorated by applied painted ornament in any shape or form. Was that not strange in an age in which the standard of education was extremely high—in an age which made a most elaborate parade of its worship at the altar of beauty.

If they simply ignored the craving after a "national" style on the one hand and the wishing for correctness of style on the other, and worked with the sole object of producing that which pleased themselves and their clients, he believed they would be much more correct in spirit than they were in being—what must appear to many—pedantic in style. Another bugbear was to wish to give expression to the spirit of the age. In combating the evil of arrogant and dogmatic "teaching," he said that association had treated the subject as if they ought to teach the public what they ought to like. The public had been taught until they were tired of all ornamental teaching and work, and that the most fatal of all errors had been made, in that to prove the correctness of their style of workmanship they had made a great demonstration of the mode of working; indeed, that had been carried so far that they had practically made a little paper god of the stencil.

The doctrine of honesty in decoration had gone through many and varied phases since its great outburst in the Victorian days; even when it was built on reason and commonsense it went much too far. A great cause of the exclusion of painted ornament was the perfectionist, who, providing that which was in every detail mechanically and technically perfect, had eliminated from it that quality of personality which would have endeared it and made it comforting to the heart of man.

THE BEAUX ARTS ATELIER.

OPENING OF THE WINTER SESSION.

An informal gathering was held on Wednesday evening last at the Atelier, 16, Wells mews, Wells-street, Oxford-street, W., among those present being the Right Hon. Lord Saye and Sele, and Messrs. H. V. Lanchester, F.R.I.B.A.; A. R. Jemmett, F.R.I.B.A.; Arthur Davis, J. P. Chaures, R. Goulburn Lovell, A.R.I.B.A. (honorary secretary); Percy B. Tubbs, F.R.I.B.A.; F. E. Billerey, Leslie Wilkinson, A.R.I.B.A.; J. S. Gibson, F.R.I.B.A.; C. E. Mallows, F.R.I.B.A.; Harold Sanders, and others.

The drawings on view comprised those executed for the twelve hours Esquisse Esquisse, the subject being "The Pedestal of a Bronze Equestrian Statue," and for the projets, "A Town Residence for a Wealthy Art Collector" and "The Principal Elevation in a Courtyard of a Royal Palace," the latter sets including the rough Esquisses and the finished Rendus. There was also a large number of water-colour holiday sketches of architectural subjects, in competition for prizes to the total value of £10. The patron, Mr. Arthur Davis, gave a criticism of the architectural designs, explaining the reasons in detail which led the jury to make the various awards. He was followed by Mr. Lanchester, who dealt with the water-colour sketches, bringing out the salient points to be observed or avoided, in an exceedingly useful manner.

The awards of the jury were as follows:—"The Pedestal of a Bronze Equestrian Statue" (mention), L. Sylvester Sullivan, A.R.I.B.A. "The Principal Elevation in a Courtyard of a Royal Palace" (mention), L. E. Carreras. "A Town Residence for a Wealthy Art Collector" (first place), W. C. W. Tirrell and L. H. Bucknell, A.R.I.B.A. Holiday Sketches (cash prizes), W. J. Newton, M.A., A.R.I.B.A. (£4); L. H. Bucknell, A.R.I.B.A. (£3), Wilfrid Hoyle, A.R.I.B.A. (£2); Bryan Watson, A.R.I.B.A. (£1). Besides the competition drawings there were a number of water-colours, not necessarily architectural subjects, sent for exhibition purposes by members of the Atelier, including a number sent by one of the Atelier's members in Paris, Mr. H. Bartle Cox, A.R.I.B.A.

HOW THE CHANNEL TUNNEL WILL BE MADE.

At a meeting held at Marble Arch House on Tuesday, Baron d'Erlanger, the chairman of the Channel Tunnel Company, gave some interesting details of the probable returns of the tunnel. He thought the tunnel would capture at least 65 per cent. of the Continental passengers, who at the normal rate of yearly increase would number 2,000,000 at its opening, if construction were at once begun. At a fare of 10s. per head, that would secure an income of £650,000. The transport of luggage would add 10 per cent., or £65,000, and the postal service a further £40,000. It was not too sanguine to put the goods traffic at £800,000, and this would give a total of £1,555,000, while the total working expenses would not exceed £420,000 per annum, leaving a net profit of £1,135,000 on a capital of £16,000,000. In this estimate, however, no account was taken of the increase in passenger traffic which would result from the construction of the Channel Tunnel, and if they were to transport 3,000,000 passengers in a year, it was easy to see how enormously the profit would be swelled.



WHITEHALL AS IT APPEARED IN THE REIGN OF KING CHARLES I.

though the fares would be substantially reduced.

Sir Francis Fox, engineer to the London "Tubes," who dealt with the technical aspects of the tunnel, said the grey chalk through which it would be bored was excellent material for the purpose. The main tunnels would consist of two single-track circular "tubes," each 18ft. in diameter, and thus large enough to accommodate the rolling stock of the British and French main lines, except their locomotives, for which would be substituted electrical locomotives. Including the junctions with the main lines in England and France, the total length of each tunnel would be 31 miles, the actual length under water being 24 miles. The tunnels would be 36ft. apart, lined throughout by cast-iron segments, and covered with cement to prevent leakage into the tunnels and preserve the plates from corrosion.

Assuming that seventeen yards per day could be bored for six days per week, the annual progress would be about three miles at each face, so that the work would occupy four years. Ventilation would be secured by blowing air in the direction in which each train was travelling. To keep the tunnels pure and fresh, it would be necessary to supply 45,000 cubic feet per minute on each line of way, travelling at a velocity of 6ft. per second, which was equivalent to a very light breeze.

To prevent fire, no inflammable material would be used in the rolling stock, and as the motors of the electric locomotive would be "armoured" against fire in case of short-circuiting, no danger would arise as regards the electrical working, even from the employment of ordinary rolling stock. Assuming, however, that, in spite of precautions, any stoppage should occur in the tunnels, the passengers would readily pass along the tunnels in the rear of the train, where there would be a footpath, clear of the electrical conductors. The passengers would thus be free from smoke, in consequence of the direction of the current of air always blowing from the rear of the train towards the front. The tunnels would be lighted throughout by electricity. A separate circuit would be provided, so that, in the event of the main traction current failing, the lights in the tunnels would not be extinguished. Carriage lighting would be independent, each vehicle carrying its own store of light.

Referring to the fears expressed about the tunnel destroying the defence which the sea afforded, Sir Francis Fox pointed out that the great nations of Europe had not hesitated to construct bridges across the rivers between their respective countries, and had even allowed Alpine and other tunnels to be built under ranges of mountains which were looked upon as natural frontier fortifications. He concluded by supporting the view that the tunnel would solve the food problem in time of war, as a succession of food laden trains could be brought through from the Continent in such numbers as might be required.

WHITEHALL AS IT APPEARED IN THE REIGN OF KING CHARLES I.

MR. JOHN B. THORP'S MODEL.

In our issue of last week we inadvertently stated that the model of the above was presented to the United Service Institution by Mr. John B. Thorp. We now find that he received a commission from Lieut.-Colonel Leetham, who presented it to the Institution, to work out and construct the model.

We now give an illustration of the central portion of the model. On the right hand of the picture is the Banqueting Hall, the first portion of Inigo Jones's scheme for the rebuilding of the Palace. To the left of the Banqueting Hall is Holbein Gate, and in the centre is a Tennis Court, which was built by Henry VIII. A small archway can be seen at the right-hand side of this building, which was the entrance to the Cock Pit, a square building in the background. To the extreme left was King-street Gate, and in the centre of the picture is shown the Privy Gardens. The long lead-roofed building, facing the Privy Gardens, is the Stone Gallery. The whole of the buildings in this view have disappeared, with the exception of the Banqueting Hall, which, as most of our readers will know, is known to-day as the United Service Institution.

Mr. Thorp, whose well-known models of Old London are now permanently exhibited at the London Museum, has made a special study of the topographical history of the City, and he is now engaged on a large model of the Tower of London in the year 1600, which will shortly be seen at one of our leading London museums, and should be of very general interest.

LOGGING BY ELECTRICITY.

An interesting paper was presented at the meeting of the American Institute of Electrical Engineers, held at Vancouver, B.C., September 9-11, on "Logging by Electricity," by Mr. E. J. Barry. The paper described the electric logging machines installed in a timber district in Idaho, and gives the results of tests of these machines. The carrier system is known as the "skyline" system, which is especially adapted to steep hillsides, and as the logs are carried with only one end trailing on the ground, rock and gravel do not become embedded in the bark, thus avoiding disastrous results to the saws in the mill.

The estimated saving of the electric over steam operation for this installation is at least 50 cents per 1,000 log-feet, and the electric drive also embraces many collateral advantages, which are enumerated. Briefly: No fuel required, with consequent wastage of good lumber averaging about 1,000ft. (304.8m.) per day for each engine. Elimination of fire risk in the forest. Lower labour costs; no firemen or woodcutters required to supply fuel. No freezing of boiler-tubes in winter, and, consequently, no charge for night watchman in cold weather. Maintenance costs less than with steam; boilers have to be washed every two weeks, and engines with reciprocating parts are harder on upkeep. No water required. This is often a serious item, it being necessary in many cases to pump water for a distance of two miles. No delays to get up steam and no shut-downs through failure of pressure, a frequent happening on very long hauls. No danger of boiler explosion. Greater adaptability in regard to speeds, which can be increased beyond standard engine speed at present in use. The output of each machine can be standardised readily. The output of steam donkeys will vary in ratio to the attention paid to proper firing. It is estimated that a saving of at least 50 cents per 1,000 log-feet would be effected. During 1911 the St. Paul and Tacoma Lumber Co., between contracts and camps, hauled 81,000,000ft. (24,688,850m.), log scale. On combined operations the gross saving would be 40,500dol., from which the cost of energy would have to be deducted.

DANGEROUS TIMBER IN CHIMNEY FOUNDATIONS.

The inquiry at Workington on Tuesday into the deaths of the five men caused by the fall of the steel chimney at the Moss Bay works on September 16 should be noted by all responsible for the erection or maintenance of tall chimneys.

The steel chimney in question seems to have been built about twenty years ago, and, according to the designing engineer to the company, the foundations were of concrete,

and brick and timber were also found, the latter being in the condition of charcoal. Excavations for soaking pits had taken place 18ft. from the outside of the chimney.

Mr. William Blair Hughes, a consulting engineer, expressed his opinion that the charring of the timber between the two layers of concrete in the foundations was the cause of the collapse. The timber, which consisted of four rows of pitch-pine, said Mr. Hughes, must have been in the process of slow combustion, leaving a cavity underneath the concrete. Thus deprived of any support the concrete would give way and the stack would fall. Mr. Hughes, in answer to questions, said he did not approve of the insertion of timber in chimney foundations. He thought it must have been put in with the notion of distributing the weight. He knew of no other chimneys at the works which were built on foundations like those of the overthrown chimney.

Questioned later by the solicitor to the Steel Smelters' Association as to how the timber could have become charred, Mr. Hughes said he could not see how the heat of billets from the heating furnaces when dumped on the ground near the base of the chimney could have been transmitted to the timber in the foundations, because the surface of the ground was covered with sand and gravel, and these were non-conductors. He scouted the theories that the collapse might have been due to water in the ground, to the vibration of the rolling plant, to excavations for new soaking pits, or to an explosion of gas in the flues. Even if such an explosion had occurred it would have followed the line of least resistance and gone up the chimney shaft.

The coroner said the evidence showed that these theories were fallacious. It was clear that the accident was brought about by the charring of the timber. It was satisfactory to know that no other chimneys at the works were built on this principle

THE ASSOCIATED PORTLAND CEMENT MANUFACTURERS (1900), LIMITED.

The thirteenth annual report of the directors, to be submitted to the fourteenth ordinary general meeting of the company, to be held at Winchester House, Old Broad-street, London, E.C., on Monday next, is as follows:

The balance brought forward at July 1, 1912, was		£37,833 0 3
The profits, after deductions, which include £124,789 2s. 1d. for repairs and renewals, amount to ...		627,258 15 7
		£665,091 15 10
From which have been deducted—		
Directors' and trustees' fees	£6,500 0 0	
Debenture stock, mortgage, and other interest	235,116 2 7	
Depreciation and sinking funds	51,291 13 10	
Discount on realisation of securities	35,313 17 1	
	328,221 13 6	
	£336,870 2 4	
An interim dividend on the preference shares to December 31, 1912, was paid on March 31, 1913 ...		62,109 17 0
Leaving a balance of.....		£274,760 5 4
Which they recommend should be appropriated as follows—		
To the general reserve and depreciation account	£65,000 0 0	
To the payment of a final dividend on the preference shares to June 30, 1913, at the rate of 5½ per cent. per annum, amounting to	62,109 17 0	
To the payment of a dividend on the ordinary shares for the year ended June 30, 1913, at the rate of 5 per cent per annum, amounting to ...	96,116 0 0	
	223,225 17 0	
Leaving to be carried forward..		£51,534 8 4

The directors report a substantial improvement in the company's trading results for the past year, which permits of the payment of a dividend on the ordinary shares. The revenue from investments also shows a large increase as compared with the previous year. Trade during the period under review has been active, and prices for cement have been satisfactory. Cost of manufacture has, however, shown a marked increase, owing to various causes, including the higher price of fuel and increased wages. The new works in British Columbia, referred to in the last report, are now practically completed, and manufacturing operations have commenced. The Tolteca Company of Mexico, in which the company holds practically all the share capital, has yielded a substantial return during the past year, notwithstanding the disturbed state of that country. Works are now being erected in South Africa in which the company has a large interest.

The amount of first mortgage debenture stock redeemed and cancelled during the year is £19,207, making a total reduction of this stock to June 30, 1913, of £198,491, and following the practice of the past two years, the expenses in connection with the issue of the second debenture stock have been written down to the extent of £8,344, by transferring that amount to the debit of the first mortgage debenture stock redemption fund. Out of the profits for the year the sum of £33,354 0s. 4d. has been provided for the sinking funds of the first and second debenture stocks, and further amounts aggregating £17,937 13s. 6d. have been reserved in respect of barge depreciation, chalk and clay, sacks, etc. The directors recommend, in addition, that a sum of £65,000 be carried to the general reserve and depreciation account (as against £25,000 last year), bringing that account to £335,000. The total charge for the year for depreciation and sinking funds will then amount to £116,291 13s. 10d.

LOW-TRUSS STEEL HIGHWAY-BRIDGES.*

By G. M. Braune,

Assistant Professor of Civil Engineering, University of Cincinnati.

The plans for small country highway-bridges are usually made by bridge-company agents, and experience proves that the majority of county commissioners will accept almost any plan so long as the price is low enough. A great number of these bridges are, indeed, doing service to-day for ordinary light traffic; but should the members be stressed up to the amount for which they were "designed," the chances are that they will refuse to carry the loads. The peculiar thing about the situation is, moreover, that the collapse of such structures, and even the publication of these occurrences, seems to have small effect upon the future construction of similar structures.

The writer has knowledge of the collapse of a bridge built in one of the Southern States some years ago. The top chord was made of two angles and a web-plate, in the form of a T-section. In this case, however, the bridge had been accepted by the county commissioners, and it was not until a few days after the acceptance that it collapsed under a drove of horses.

PRECAUTIONS WHEN USING A HEAVY CONCRETE FLOOR.

Concrete floors are rapidly replacing the former light wooden floors; therefore, the actual dead-load stresses occurring in the bridge members are a large percentage of the maximum computed stresses, and the details are seldom designed to properly take care of these large actually occurring stresses. The design of the details is too often turned over to a young, inexperienced draughtsman, whose knowledge about the distribution of stresses is generally somewhat meagre.

Not very long ago the writer was shown the shop drawings for a 75ft. pony truss "designed" to carry a heavy concrete floor. A splice of the bottom chord (made of ⅝in. material) was attempted at one of the lower-panel points, and the draughtsman had intentionally, although ignorantly, neglected to provide sufficient splice material to equal the area of the cut chord. The correct number of rivets had, however, been provided to take care of the stresses in the different members that were attached to the ⅜in. gusset-plates. When the error was called to the draughtsman's attention, he was much surprised, and informed the writer "that was their usual method of designing splices." Luckily the bridge had not been shipped, and the corrections were made in the shop.

Since heavy concrete floors have come into fashion, resulting in large dead-loads and large reactions, it is very essential that the ends of the trusses should be provided with pin-bearings, although this detail is to a great extent ignored, not only by a number of bridge companies, but also in some of the recent textbooks. Owing to the uneven distribution of the reaction over the bearing-plate, large secondary stresses will occur in the members designed to take only direct stress.

The writer is personally acquainted with an accident which happened some years ago to a heavy low-truss bridge in which this detail was omitted. As the bridge was not provided with end-pin bearings, large bending moments occurred in the bottom chord, and also, of course, in other members of the truss. One day, when a heavy electric-car was crossing the bridge, the bottom chord parted near the end-panel point. Computations showed that the member was carrying a conservative direct working stress, and faulty material was not the cause of the failure, as was shown by subsequent tests.

Low-truss bridges 100ft. long and over have been constructed in Europe and in this country which, from a standpoint of strength, stiffness, and æsthetics, are all that could be desired. The computations of the stresses, make-up of the sections, and the design of the equally important details require, and always will require, however, a certain amount of intelligence and experience.

POINTS ABOUT SOME OF THE DETAILS.

The lateral forces acting upon the top chord of a low-truss bridge, whether from external causes or resulting from column action, can be cared for without the addition of unsightly floor-beam knee-braces, by designing the vertical posts or diagonals of a form (say, two angles and a web-plate, or, if the design requires it, four angles and a plate) capable of resisting bending and shear. The overturning effect of the lateral forces can then be transferred into the floor-beams by riveting the vertical posts to the floor-beam web, or through the diagonals into the gusset-plates, and thence, by means of a diaphragm, into the floor-beams.

The bending moment in the verticals and diagonals, and hence the resulting indirect shearing action on the rivet connections, would be obtained by multiplying the assumed lateral force by the distance between the centre-line of the top chord (position of application of lateral forces) and the centre of the group of rivets connecting the floor-beam to the vertical posts. The rivet connections should be sufficiently strong to take care of direct shear, and also the shearing action resulting from the bending in the posts and diagonals. The top chord should be of an inverted-trough section, sufficiently wide to allow the vertical posts and diagonals to be inserted between the gusset-plates. Pin-connected pony trusses should not be tolerated.

SUPERVISION OF CONSTRUCTION.

As long as intelligent supervision is not had over the design and construction of highway-bridges, we will hear of occasional collapses, and there will also occur numerous failures which will not be brought to the notice of the engineering profession. The question before us is, How can an improvement of this state of affairs be brought about? Some engineers honestly believe that by licensing the practice of engineering good results could be secured in this direction; others hold, however, that this would not overcome the evil—on the other hand, it might make matters worse, for an engineer holding a license would be per se, in the eyes of a great many county commissioners, a competent bridge engineer, whereas we all know that this would not be the case.

* Abstracted from an article in the "Engineering News."

Currente Calamo.

Here is one of the many instances which we suppose will fail to convince those who helped to smother the Housing Bill last spring that the dearth of houses in the rural districts is a scandal. At Limpsfield, Surrey, on Monday, a Local Government Board inquiry was held into the application of the local council for permission to borrow £300, the price of an acre of land to be purchased from Mr. Charles Leveson-Gower, the lord of the manor, as a site for ten cottages to be erected under the Housing Act. The shortage of cottage accommodation, the council's surveyor said, had been accentuated by the closing of insanitary houses and by the conversion of labourers' dwellings into week-end cottages for middle-class people. A house-to-house inspection had revealed considerable overcrowding. They were still unable to close some overcrowded houses because there were no cottages for the outgoing tenants to occupy. Mr. H. M. Baker, chairman of the housing committee, and Mrs. Marjorie Pease, a member of the council, also gave evidence, the latter stating that there were still twenty-seven applications for houses by people employed in the village. Mr. R. Slindley opposed the application on the ground that it was unfair for a public authority to compete with private enterprise by being able to borrow money at a lower rate of interest—although earlier witnesses had stated that it was impossible to get the cottages erected by private enterprise. The inquiry was closed. We shall watch whether, in the interests of "private enterprise," the Local Government Board will refuse an application like this.

Those who recall our comments on this page in our issue of August 8 last will hardly be surprised to learn that one of the big town-planning schemes which are being developed in Birmingham has been arrested as the result of a conference between the local authority and the landowners on Tuesday. Strong exception was taken to the procedure, which contemplates formal assent to town planning by persons concerned before particulars of the scheme have been submitted. This ended on Tuesday in a negative vote on the proposed town planning of 85,000 acres in South Birmingham pending an amendment to the regulations, and the passing of the following resolution:—"That this meeting strongly condemns the procedure laid down by the Local Government Board which requires a meeting of owners to be held to consider a town-planning scheme before such a scheme has been prepared, and strongly urges that the procedure be altered so as to allow the local authority to prepare all details of a proposed scheme and submit them to the landowners interested at a conference or conferences before the first inquiry by the Local Government Board." Surely that is only fair and reasonable. As one speaker remarked at Tuesday's meeting, "co-operation" is a luring word; but when landowners have once consented to plans, the thin end of the wedge has been put in, and cannot be withdrawn. The speaker (Mr. Richard Fowler) said he well remembered the same cooing note at the inception of the East Birmingham town-planning scheme. The result was well known, and business men were not likely to imitate the fly-and-spider business.

A long and animated discussion took place at Monday's meeting of the city council of Newcastle-on-Tyne on the question of the desirability or otherwise of building a new town-hall. It was stated that for thirty-nine years proposals have been brought forward, and successively rejected, for providing a more adequate and commodious town-hall. In the end an amendment providing for the consideration by a committee of the plans to be prepared by the property surveyor was carried by 31 votes to 22, the original resolution inviting competitive plans from architects, in accordance with the scheme submitted by Professor Beresford Pite, being rejected, as was a further amendment to the effect that a scheme should be presented for the reconstruction in sections of the present building as modern offices, together with, if desirable, provision for a commercial exchange, and that the offices be used by the municipal staff pending the erection by the council of an adequate town-hall and municipal offices elsewhere. It seems hardly likely that this timeworn question has been carried a step nearer solution by Monday's debate. Eventually the Newcastle Corporation will have to face the question of providing dignified municipal buildings, worthy of the city, in a broader-minded and more liberal spirit. The canny toon must not "ca' canny" in this fashion!

A curious impasse has occurred in regard to the urgently-needed enlargement of the Municipal Hospital of Philadelphia. In order that additional buildings might be provided as expeditiously as possible a certain firm of architects was selected and instructed to prepare plans. When, however, the approval of the contract between the city and the architects was asked for, the city solicitors objected on the grounds that the directors of the hospital had no authority to employ any other person to discharge the duties of the duly appointed city architect. That official asserts his willingness to plan and superintend the erection of the buildings, but states there is no appropriation available for the employment of draughtsmen nor the necessary office force to perform the work. What about a little subscription to provide these, so that we may see the legal aspects of the right of the municipal official to shut out outside architects duly threshed out?

"A Tricky Lot," was the terse term used to describe the present Ministers of the Crown by a strongly critical speaker at the recent National Conference of Friendly Societies. This sounds almost treasonable; but that is no reason why it should not also be true. Naturally, these old societies, who have been doing good work for so many years for the thrifty poor, do not like the officious edicts of that mushroom body, the Commissioners under the Insurance Act. The humour of it is that these concerns have been passed as "Approved" Societies by the new bureaucrats, and yet they are constantly being bullied while doing their own business. But they seem to have been going too far, even in the sacrosanct province of Wales, where a strong public opinion has forced the Welsh Commissioners to give way over some absurd regulations they had made forbidding meetings of societies or branches in licensed premises instead of in Sunday-schools. This teetotal tyranny was more than gallant little Wales could stand. Still, we seem to be getting on. Individual freedom is a thing of the past, and of the textbooks. Now the idea is that corporate bodies or "Approved Societies" should also be regulated by those who issue printed forms called "Administrative Orders," as they do in Russia.

"Ticket of leave" is the opprobrious if not appropriate, name which a defiant engineer recently gave to that symbol of the Bond of Brotherhood established by the National Insurance Act, and commonly called "the card," with or without adjectives. But this was a man who would probably have spoken disrespectfully of the Equator. He simply would not obtain an Unemployment Book and deposit it with his employer, as required by the Act, he being within the Schedule of Insured Trades, which includes mechanical engineering. When summoned before the magistrate he was full of that old-fashioned freedom which flourished, say, in the brave days of John Bright. He had means of his own, and was willing to pay his bit, but he "would not be put under a miserable little Act and be put on ticket-of-leave." While admiring the survival of this healthy sort of British spirit, the magistrate pointed out that the law must be obeyed. So the engineer, still declaring he would die in the last ditch, or, in other words, would rather lose his job than take out the Lloyd George ticket, was fined 20s. Of course, he was all wrong. But, after all, should we be surprised that men who regard their freedom and earn good wages think they may be trusted to use or save their money as they like, and so object to being made thrifty by statute?

Readers who are Freemasons probably know that at Leicester there is a "Lodge of Research," and in the Transactions for the year 1912-13, edited by Bro. John T. Thorp, there is a valuable contribution, written by the editor himself, upon "Freemasonry—Gleanings from the Past." He traces the pilgrimage of the early operative masons from the East to the West, and states that they were known in England in the first century. Mr. Thorp says the 12th, 13th, 14th, and 15th centuries were the golden age of operative masonry in England. After that period came the decadence, due in great measure to three causes—namely, the impoverishment of the country in consequence of the Civil War, the dissolution of the monasteries, and the rise of Puritanism. The lodges lost their best members, and turned to the ordinary nobility and gentry for support. They undertook the erection of castles, mansions, and country residences, and examples of their work still survive.

More might be done to develop the usefulness of our canals, in these days of rising railway rates, and many of our own trades would be immensely advantaged thereby. The excursion trip on the Birmingham and Warwick Canal, which we report on another page, most usefully called attention to the facilities which comparatively small expenditure would add to cheap means of transit between London and Birmingham and the various towns on the route. Builders and other users of heavy goods ought to support that excellent body, the Waterways Association, in its efforts to induce the Government to appoint a Waterways Board, not merely to unify, but to improve, our canals. The railway companies, of course, will vigorously oppose all such efforts; but it only needs the co-operation of all concerned to disarm their interested obstruction. As Councillor Neville Chamberlain reminded

its hearers on Saturday, a Royal Commission has already reported in favour of unifying the control of the four routes known as "the Cross." But legislative work of humdrum but most extended usefulness has little attractions for the ordinary politician nowadays. All the more reason is there for practical people to bestir themselves vigorously.

Next Wednesday, for the first time for nearly seventy years, there will be a change in the well-known cover design of *Punch*. The celebrated drawing by "Dicky" Doyle will still continue to be used, but it will in future be printed in two colours. The cover will be printed on much better paper than hitherto, and it will be produced on the finest art printing presses. Few of us recollect *Punch* in any other cover than his familiar garb. He has, however, as a matter of fact, had a number of coats, not less than seven, to be precise. For the first three years of his existence it was the custom to change the cover design of the weekly issue with each half-yearly volume. The first number of *Punch* was issued on July 17, 1841, in a cover designed by A. S. Henning. The second cover was a graceful design containing many figures, by Hablot Knight Browne ("Phiz"), a contributor to *Punch* for a long number of years. The third design was a pretty one by William Harvey, the Shakesperian illustrator. Sir John Gilbert was commissioned to draw the next cover: a fine design, which was subsequently used for a great number of years as a wrapper for the *Punch* monthly parts. Six months later Kenny Meadows produced the fifth cover, which was followed by a first design by Richard Doyle—a drawing in essential respects the forerunner of the now familiar design, which latter was produced by him for the beginning of the next volume, and was used for the first time in January, 1849. There is no better-known cover design in the whole world than the famous drawing of Doyle's, and the appearance of which the addition of the second colour now proposed is said greatly to enhance, making the delightful figures which it contains stand out with greater clearness and vividness. May it, as heretofore, long cover not a multitude of sins, like charity, but an endless succession of volumes, each rivalling its predecessor, and proving to the world that "*Punch* isn't as good as it was"—but better!

The tower of Redbourn parish church is now undergoing restoration. Mr. C. M. Oldrid Scott, of the firm of Messrs. Oldrid Scott and Sons, being the architect. The estimated expenditure is about £1,000.

Sir Walter Phillimore has offered to dedicate to the public 4,600 square feet of land for the purpose of effecting an improvement in the public way at Campden Hill-road. The Kensington Borough Council's Works Committee has decided to recommend acceptance of the offer.

Leeds Corporation Parliamentary Committee have decided to seek powers to annex Pudsey, Calverley, Farsley, Yeadon, Horsforth, Rawdon, Rothwell, Drighington, Gildersome, parts of East and West Ardsley, Adel, Alwoodley, Middleton, Oulton, Thorpe Stapleton, Temple Newsham, and Austhorp.

The new Primitive Methodist Chapel at Lytham, Norfolk, was formally opened on Tuesday week. Built of brick, with stone dressings, the chapel is in the Early English style. The inside dimensions are 38ft. 6in. by 18ft. 6in., and the offices, adjoining the west end, cover an additional length of 14ft. A screen partition at the east end provides separate Sunday-school space. The lancet-headed windows contain tinted glass, and the roof is stain-timbered. Messrs. Sparkes and Latten, Norwich, were the contractors, the architect being Mr. A. F. Scott, of Norwich.

THE UTILISATION OF SEWAGE IN AGRICULTURE.*

Some of the greatest industries of the present time owe their existence to the utilisation of by-products which at some time were considered a nuisance; and sewage, which is the largest by-product, may in like manner become a valuable commodity. The total value of the nitrogenous matter, phosphates, and potash compounds contained in its liquid part is equal to twenty million pounds per annum. The value of its solid matter, termed sewage sludge, is about two million pounds per annum, and the author has succeeded in designing a practicable method by which this amount can be made available. At present the process only deals with the sewage of Oldham, a town of 150,000 inhabitants. It is based on the reasoning that the highly unsatisfactory results which have up to the present been obtained with sewage sludge in farming are attributable to the fact that it contains fatty matter, due chiefly to soap and kitchen refuse, and that if these fatty matters, which render the soil impervious to water and air, and which, by enveloping the active chemical ingredients, prevent them from being dissolved, were removed, a residue of manurial value would remain. By the author's process the dried sludge is mixed with a small percentage of acid and subjected to the action of superheated steam, which carries off the fatty matters (which are condensed in water) and leaves an inodorous brown powder, completely sterilised, which contains, on an average, 1.5 per cent. of nitrogen, 3 per cent. of phosphate of lime, and 0.5 per cent. of potash, distributed in almost molecular state over from 30 to 40 per cent. of organic matter similar to humus, and mixed with a certain amount of carbon in an extremely fine state of division. The results obtained from the residue mixed with phosphates and potash compounds are beyond what might be expected from calculations based on the units of the active principles. The process does not add to the cost of sludge disposal, is automatic, and works day and night without a break, and with only such labour as is required to attending to the fires under the drying machines and boilers, and to mechanical movements. There is no smell from any part of the apparatus, and the men do not handle the sludge from beginning to end, as everything is carried on in closed vessels.

The solution of the problem of sewage-sludge disposal should place the much larger problem of the application of liquid sewage to farming within closer reach of solution. Up to the present the tendency in sewage treatment has been to reduce the amount of sludge, as in practically every place it has been a source of great expense and nuisance. It is now possible, and even advisable, to produce more sludge, and, by doing so, to obtain better effluents with reduced purification plants. So far, the great drawback in sewage farming has been that the sewage has had to be used whether the land required it or not. With a system of removing the solid matter (including the fatty compounds) from sewage without extra cost, the efficiency of the sewage purification plant would be greatly improved, and arrangements could be made by which the sewage could be, at any time, either sent on the land or dealt with in the purification plant, and as the soil could take up more liquid matter without becoming waterlogged, larger quantities of sewage could be used on a given area. The enormous strides which have been made in the last seventy years in engineering, chemistry, and agricultural science, the use of oil- and gas-engines, improvements in pumping machinery, the distribution of electricity, the improvements in motor traction, all seem to point to the fact that within a measurable distance we shall be able to utilise, if not all, at any rate a considerable part of the sewage which is now wasted, by having in connection with municipal sewage works a system of irrigation which would enable farmers to draw upon the effluent when they can profitably use it on their land, and that the time has arrived when experiments on a fairly large scale in that direction should be carried out; such experiments should be made at the cost of the Government, as neither corporations nor individuals can be expected to undertake such work, and it is to be hoped when the recommendations of the Royal Commission on Sewage are acted upon, and a central authority appointed to deal with the sewage question, they will give their attention to this matter.

* Abstract of a paper read before the Agricultural Section of the British Association by Dr. J. Crossman.

OBITUARY.

We regret to have to announce the death of Mr. Thomas Harnett Harrisson, architect, of 53, Rodney-street, Liverpool, which took place on Monday, at the age of seventy years, at 4, Shelton-road, Liscard. Mr. Harnett Harrisson was in his early days a renowned athlete, running, rowing, and boxing as a middle-weight being among the exercises in which he excelled. As an architect and civil engineer he had been in practice since 1873. In the early years of Liverpool University College, now Liverpool University, Mr. Harnett Harrisson lectured to students of architecture and civil engineering. Another position which he held for close on forty years was that of engineer to the River Alt Commissioners. He was once president of the Liverpool Architectural Society, with which he was for many years closely associated. The funeral took place in Bebington Cemetery on Wednesday afternoon.

The death has occurred at Clacton-on-Sea of Mr. Frederick Moore Gordon, A.R.C.A., head-master of the Arts and Crafts Section of the Technical College, Colchester. Mr. Moore Gordon, who was only 31 years of age, was a native of Staffordshire, and began his career as a designer at the Malkin Tileworks, Burslem. He was a student of the Burslem School of Art from 1900 to 1905, and gained many awards in the National Competition, including a bronze medal for modelling from life, and another for designs for pottery. In 1905 he won the Staffordshire County Council Arts Scholarship, value £150, and, entering the Royal College of Art, South Kensington, passed through the schools of architecture and design, studying especially design as applied to textiles, woodwork, and metal work. He there won the travelling scholarship of the School of Design, and left the college as an associate. In 1909 he was appointed director of the Arts and Crafts Section of the Bulac Technical School, Cairo, and inspector of art to the trades schools in Egypt; and in February, 1912, he was appointed head-master of the School of Arts and Crafts at Colchester Technical College.

The death occurred on Saturday at Montreal of Mr. James Ross, engineer, railway contractor, and capitalist. Mr. Ross was born at Cromarty, Scotland, in 1848, and at the age of 20 went to the United States, settling in Canada a few years later. Taking up railway work, he held numerous appointments as engineer and manager on several roads, and subsequently took up contracting work on the Canadian Pacific Railway. Mr. Ross early saw the possibilities of the overhead tramway system, and became actively associated with many companies in Canada and elsewhere, including those in the city of Birmingham, which was afterwards taken over by the British Electric Traction Company, and has now been acquired by the corporation.

New classrooms have just been opened in connection with SS. Peter and Paul's Church Schools, Teddington. They have cost £950 and have been built from plans by Mr. M. Hainsworth, surveyor to the urban district council, who acted as hon. architect.

The Local Government Board have intimated to the Northwich Urban Council their sanction to the loan of £11,732 for the erection of public baths. The scheme, which met with severe opposition, has been necessitated by the subsidence of the old baths given by the Verdin family. The new site, including the council office, cost £2,500. The baths will include plunge, eighteen slipper, and brine baths.

PROFESSIONAL AND TRADE SOCIETIES.

LONDON MASTER BUILDERS ASSOCIATION.—The first ordinary meeting of the Council after the summer vacation was held at the offices of the association on Thursday, the 18th instant, the president, Mr Walter Lawrence, jun., being in the chair, and there was a large attendance of members. Important business which had come before numerous special council meetings and committees during the interval was reported and considered. The position in respect to the strike of painters was stated to be unaltered since the commencement of the month, when all the members of the association were notified of the grant of ½d. per hour increase upon existing rates, in accordance with a resolution of the council on May 15 last, earlier announcement of which had been delayed on account of negotiations which were proceeding with the London Association of Master Decorators. From reports received members of the association are experiencing very little difficulty in getting all demands supplied. New rules with the plumbers' societies have been agreed to. The United Builders' Labourers' Union have been met in conference, and a code of rules with that society, which claims to consist of men engaged only in the building trade, has been offered, and upon the acceptance the matter will be submitted to the members of the association in general meeting at the earliest opportunity. The reports of the finance and special rules committees and proceedings of conciliation boards were received and adopted. The award of the Board of Trade conciliator re the plasterers has been already reported. Correspondence in reference to trade matters, etc., was considered and instructions given.

THE ROMAN CITY OF CORSTOPITUM.—Members of the Newcastle-upon-Tyne Society of Antiquaries on Saturday visited Corstopitum, Corbridge-on-Tyne, to view the results of the excavations which had been carried on during the past year under the supervision of Mr. R. H. Forster, F.S.A., upon the site of the ancient Roman city there. The excavations were begun in 1906, Mr. Forster explained, by the Northumberland County History Committee, and the Corbridge Excavation Committee was formed and took charge of the work in the following year. The discoveries include the position of the great road from the bridge over the Tyne a road which has acquired the name of Watling-street, but which was known in mediæval times as Dere-street; a large buttressed building which has been named "store house," but which, it is conjectured, was designed to form the Prætorium of a legionary fortress which never reached the stage of actual existence; 48 gold coins and a gold ring, wrapped in a piece of sheet-lead, probably deposited where the hoard was found about A.D. 385; several altars, a vast quantity of pottery, a bronze pig containing 160 gold coins ranging from Nero to Marcus Aurelius; the well-known Corbridge Lion, found in a tank in the courtyard of a house; a smithy, where arrow-heads and other articles of iron had been manufactured; a potter's kiln, a fountain, and a furnace containing an ingot of iron weighing 3½cwt.

SCOTTISH BUILDING TRADES FEDERATION.—The nineteenth annual meeting of the Scottish Building Trades Federation was held at 123, George-street, Edinburgh, on Friday. Mr. James Gray, jun., Inverness, president of the federation, occupied the chair. Among those present were included Mr. William Forrest, J.P., president of the Edinburgh Association, and vice president of the federation; Mr. James Farquharson and Mr. Lyall, Aberdeen; Mr. Wm. Pollock and Mr. Thomas Lyon, Kilmarnock; Mr. Hector MacVinish, Inverness; Mr. Baxter, president of the Glasgow Master Wrights' Association; Mr. J. M. Laird, solicitor, secretary; Mr. D. Smith and Mr. George Menzies, Kirkcaldy; and Messrs. Crowe, Angus, Drysdale, James Millar, Currie, Kennedy, Carrick, Duncan, Bain, and Pratt, representing the Edinburgh Association; and Mr. Thos. Ferguson, solicitor, secretary of the federation. A report on the state of trade showed a general improvement throughout the country. A rise in wages had taken place in almost every branch of the trade, due in a great measure to the abnormal emigration which had taken place and to the increased cost of living. It was reported that the claim by the Scottish contractors for repayment of insurance contributions under the triennial contracts with the Office of Works had not yet been finally considered. It is understood that a decision will depend on the result of an arbitration which is pending in a similar contract affecting London contractors. A correspondence with the Office of Works re Government contract conditions was submitted to the meeting. Certain concessions had been granted in connection with percentages allowed upon prime cost values, and in place of the triennial schedules it is proposed to substitute a schedule specially adapted for the valuation of those variations on a new works contract, which cannot be valued on the basis of the bills of quantities. At the request of the contractor also separate copies of the account will be supplied in respect of each trade. A proposal to revise existing contract conditions and to adopt a universal mode of measurement, applicable to Scotland, was considered, and a committee was appointed to deal therewith and to report to a future meeting. The financial report was submitted by the treasurer, and adopted. Office bearers for the ensuing year were appointed:—President, Mr. Wm. Forrest, J.P., Edinburgh; vice-president, Mr. George Lyall, jun., Aberdeen; secretary and treasurer, Mr. Thos. Ferguson, solicitor, 123, George-street, Edinburgh.

SCOTTISH ECCLESIOLOGICAL SOIETY AT INCHMAHOLME.—On Saturday members of the Scottish Ecclesiological Society and friends from Edinburgh, Glasgow, and St. Andrews, meeting at Stirling, motored sixteen miles to the Lake of Menteith, with the view of inspecting the ruins of the Priory, Queen Mary's Garden, on the island of the lake. Mr. Hippolyte Blanc, R.S.A., F.R.I.B.A., of Edinburgh, who was accompanied by his son, acted as guide, and gave in detail a sketch of Inchmaholme, "the island of rest." The priory was founded in 1238 as a religious house for men of the Order of St. Augustine. The church consists of nave and choir only; in accordance with the practice of the Order, it had no transepts. The choir contains sedilia for the use of priest, deacon, and sub deacon. The west doorway, with its slender shafts and delicately moulded arch of three orders, is very graceful, and is the finest relic of the priory. The choir, which is still used as a place of sepulture, has stones in memory of the Stewarts, Grahams, and Drummonds of early times. One slab has in relief a recumbent knight, Walter, the first Stewart Earl of Menteith (1295) and his Countess Mary; the feet of the figures rest on dogs, the symbol of fidelity. A monument (about 1300) bears the effigy of Sir John Drummond, the feet resting on two lions back to back, with tails entwined. A stone vaulted chamber has a fireplace, and in the window recess can be seen a "spill sink." The latter suggests either kitchen or refectory, although the refectory of a priory most frequently occupies the first floor. A building on the south-east side is designated the chapter-house. The apartment over it is said to have been the prior's lodging, and is interesting historically as believed to have been occupied by Mary Queen of Scots during her brief retirement (of probably only three weeks) on Inchmaholme, a period of her eventful career round which much romance has been woven. To the Lake of Menteith the Queen came for refuge after the battle of Pinkie, accompanied by her protectors, Erskine and Livingstone.

ST. ANDREW SOCIETY IN PAISLEY ABBEY.—A party of sixty members of St. Andrew Society, comprising representatives from Glasgow, Paisley, Greenock, and Dumbarton, visited Paisley on Saturday and were shown over the Abbey—which is about to be restored—by the Rev. A. M. MacLean, minister of the first charge. He sketched the early history of the monastery and church from its foundation in 1163, its rebuilding, after being burned by Edward I., in 1307, and the efforts in modern times to completely restore it. No less than £50,000, he said, had been spent on that work, and the restoration committee were now about to proceed with their scheme. The party afterwards proceeded to Blackhall Castle, the original seat of the Stewarts of Blackhall and Ardgowan, which was given to the first of the family by his father, King Robert III.

COMPETITIONS.

A BANNER COMPETITION.—The central executive committee of the Victoria League is offering a prize of £25 for the best design for a banner, which shall be held for a year by that branch of the league in the British Isles which shall have been awarded the best certificate for all-round work during the previous 12 months. Designs sent for competition must be received not later than October 1, 1914. All designs and correspondence respecting them should be addressed to the secretary, the Victoria League, Millbank House, 2, Wood-street, Westminster, London, S.W., and marked "Banner Competition."

BRIGHTON.—A special committee appointed by the Brighton Town Council to consider the remodelling of the Aquarium, in order to provide a permanent home for the increasingly popular orchestra, decided on Wednesday to recommend the corporation to advertise for competitive designs for an attractive concert hall at the western end of the building, with seating accommodation for 2,500 persons. No recommendation is made as to the cost, but it has been roughly estimated at £20,000. Alderman Carden's scheme to demolish the Royal Pavilion and build a Kursaal in its place is deservedly severely criticised.

LIVERPOOL.—Thirty sets of plans have been received for the tuberculosis sanatorium to be built at Fazakerley. These designs were exhibited in St. George's Hall, when the first meeting of the special sub-committee met last Friday under the chairmanship of Dr. V. Hing. Mr. Henry Hartley has been appointed assessor, and will report the award to the Port Sanitary and Hospitals Committee shortly.

PORT-AU-PRINCE, HAYTI.—In the open competition for designs for a national palace to be built at Port-au-Prince, in the island of San Domingo, W.I., the Government have awarded the premium to and adopted the design sent in by M. G. Baussan, a Haytian architect. Tenders are now invited for building the palace, the estimated cost of which is about £70,000.

THE ROME SCHOLARSHIP IN SCULPTURE.—The Royal Commissioners for the Exhibition of 1851 have awarded the Rome Scholarship in Sculpture to Mr. Gilbert Ledward, on the recommendation of the Faculty of Sculpture of the British School at Rome. This scholarship, which is of the value of £200 per annum and tenable at the British School at Rome for three years, is open to students of British nationality under 30 years of age. Similar scholarships are offered annually in architecture and decorative painting. Mr. Ledward, who is 25 years of age, and who has been a student at the Royal College of Art and Royal Academy, is the first sculptor to win the scholarship.

The Brighton Town Council have decided to spend £1,500 on interior improvements to the Royal Pavilion.

At a special meeting of the Malvern Urban District Council on Friday, Mr. W. H. Johns, resident assistant engineer and superintendent, Saltley Gasworks, Birmingham, was appointed gas and electrical engineer to the Malvern Council, in succession to Mr. W. J. Rendell Baker, who has been appointed gas and water engineer to the Mansfield Corporation. Two other candidates were interviewed by the council out of forty applicants Mr. F. H. G. Godwin (Salford) and Mr. H. Marsden (Honley). The salary is £350 per annum rising to £400

Correspondence.

THE PROTECTION OF CEMENT SURFACES.

To the Editor of the Building News.

Sir, Having read with much interest your article on the above matter in the last issue of your journal, we would like to state that the Patent (1906) Concrete and Cement Specialties manufactured by Messrs. Toch Brothers, of Toronto, Canada, and New York, for the past seven years has been used, both integral and surface treatments, for concrete and cement, also a complete line of high-grade gloss and flat paints and enamels which can be applied to these surfaces without injury.

Their method of integral waterproofing is with a dry, whitish powder called "Toxement," which is of the nature of a double resinate and silicate of calcium and aluminium. This material, when incorporated in cement or concrete, combines with the calcium hydrate present in the cement, assembling the concrete in a dense mass, and it will not saponify.

Among the structures which have been successfully waterproofed with this material are the following: Dallas Oak Cliff Viaduct, Texas, 4,778ft. between abutments, 60ft. wide; the New York City Athletic Club Swimming-Pool; and New York Navy Yard Dry Dock No. 4, 703ft. long, 130ft. wide, by 42ft. deep. Messrs. Toch Brothers' method of surface treatment is with a material called "Toxlox pore." This is in a liquid form similar to guttapercha, and is a transparent positive waterproofer for any cement, concrete, or brick surface. Further, it combines with any free alkali present without injury.

The Cement Floor-Paint and Liquid Konkerit are gloss and flat paints respectively. These are intended for the protective and decorative treatment of concrete, cement, roughcast, brick or stone surfaces becoming integral with the surface to which they are applied, filling the pores, and preventing the penetration of moisture. These coatings, being made with a medium which is alkali and acid proof, are totally unaffected by atmospheric conditions.—We are, etc.,

Spicer Brothers, Ltd.,
Sole agents for Messrs. Toch Brothers.
19, New Bridge-street, London, E.C.,
September 22.

CREMATION AND PREMATURE BURIAL.

Sir,—With reference to the interesting report on cremation in your excellent journal of 12th inst., may I venture to remark that, although the regulations of the various cremation societies for medical inspection of persons supposed to be dead is a great prevention of the burial or cremation of people in a condition of trance or catalepsy, the security thus afforded is by no means absolute? In the case of the terrible death of an Italian stationmaster, Signor Castaldi, from suffocation in a coffin a few years ago, it was stated in the Press that the medical witnesses testified, at the inquest held previously to his removal to the cemetery mortuary where his agonising death occurred, that Signor Castaldi had died from heart-disease; and it was only at the second inquiry, after the tragedy happened, that the doctors discovered that the man they had certified dead had been in a state of catalepsy. In a valuable monograph entitled "Premature Burial," p. 18, Dr. Franz Hartmann says: "Dr. E. Altschul writes: 'A young student was brought into the hospital of the University of Prague suffering from pleuro-pneumonia. The inflammation subsided, but a pleuritic exudation remained for a long time. One day the patient arose and stepped with bare feet upon the cold floor, when he immediately fell down "dead." The attending physicians found the body cold and without pulse, the pupils dilated and insensible to any stimulus. A venesection was made; but only a small quantity of blood could be obtained. They shaved his head, applied cupping-glasses and ice to it, and put mustard-plasters on his feet. They tried all possible restoratives. The students themselves stayed with the supposed corpse, and tried to revive it. All hopes were in vain, and the arrangements were made for the funeral, when suddenly, and without any apparent cause, the dead man awoke, exclaiming, "I live!" He had been conscious all the time, and had heard and understood all that had been said and done in his presence; he knew all that was taking place, and lived in the greatest fear that he should be buried alive.'"

From these and numerous similar instances it is quite evident that cases of suspension of life occur in which no array of medical talent, or any tests they may apply, can detect the presence or absence of life; and it cannot be too strongly urged that putrefactive decomposition is the only really unequivocal proof of death. This is the matured opinion of all medical authorities who have carefully investigated this painful but seriously important subject, and yet decomposition is not often waited for before burial, cremation, or embalming takes place. To those of your readers who are interested in premature-burial prevention, I should be happy to send literature relating to it free on receipt of an envelope, stamped and addressed. Thanking you for your kindness, —Yours, etc., Jas. R. Williamson.

100, Chedington-road, Upper Edmonton,
London, N., Sept. 19, 1913.

The first portion of the new permanent parish church of St. James, in the western district of Clacton-on-Sea, was consecrated on Tuesday by the Bishop of St. Albans.

The Cowes Harbour Commissioners have decided to make application for a provisional order to empower them to construct a breakwater in the harbour mouth.

An adjudication has been made in the case of Jabez Evelyn Daw, Oxford-street, W., and residing at St. Marysville-villas, St. Leonards-road, Thames Ditton, surveyor.

Mr. W. H. Johns, resident engineer and superintendent of the Saltley Gasworks, has been appointed gas and electrical engineer to the Malvern Urban District Council, at a salary of £350, rising to £400 per annum.

The Bishop of Taunton dedicated on Tuesday a vestry, which has been added at a cost of £900 to the church of St. Mary Magdalen, Taunton, as a memorial of the late vicar, the Ven. W. H. Askwith, Archdeacon of Taunton.

Great Yarmouth Port and Haven Commissioners have appointed Mr. F. G. Turner as resident engineer in succession to Mr. J. Green, retired on a pension after many years' service. The commencing salary is £300 a year.

Sir W. H. Lever has let the contract to Mr. Bentley, builder, of Horwich, for the rebuilding of his bungalow on Rivington Pike slope, recently destroyed by suffragettes. It will be on the site of the bungalow burned down, but will be of new design, and more substantial character. Improvements in the grounds are also being pushed forward.

A fatal accident, the first during operations, occurred on Tuesday during the work of altering the front of Buckingham Palace. Men were engaged in lifting a roll of roofing-lead, weighing 3cwt., to a truck, when one of them, Charles Clark, slipped, and the lead fell on his head. He died on the way to St. George's Hospital. Clark was a plumber employed by the contractors.

Regarding the proffered contribution of the Ecclesiastical Commissioners to the proposed motor relief road scheme at Croydon as insufficient, the Local Government Board has arranged a conference between the commissioners and the Croydon Town Council. The latter body has offered £30,000 towards the total cost, £60,000, and the Ecclesiastical Commissioners £5,500, in addition to the land required.

A Local Government Board inquiry was held at Kidsgrove on Wednesday week, by Mr. P. M. Crosthwaite, M.I.C.E., with respect to an application of the urban district council for sanction to borrow a further sum of £1,000 for the completion of the water supply works for Newchapel Ward and Packmoor. Owing to unforeseen difficulties which were encountered in the sinking of the well, and the necessity for laying more mains, the original estimate, £4,550, has proved insufficient to cover the cost of the scheme.

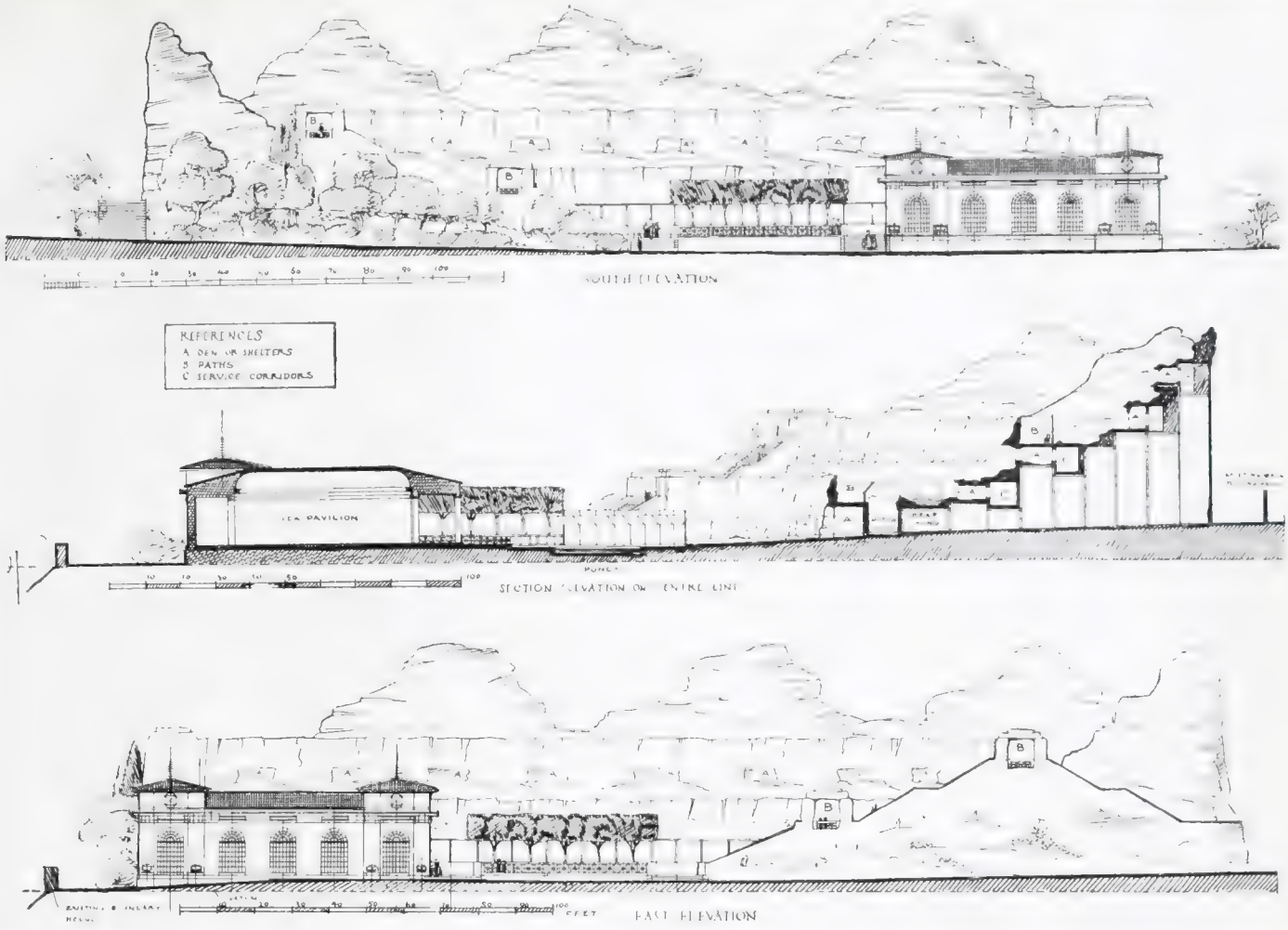
Our Illustrations.

THE MAPPIN TERRACES, ZOOLOGICAL GARDENS, REGENT'S PARK, LONDON, N.W.

This notable addition to the attractions of the Zoological Gardens has been presented by the late John Newton Mappin, head of the firm of Mappin and Webb, Ltd. The plan is in the form of a quadrant, with tiers rising one above another to a range of hills in the background, and on either side a wide staircase leading to the public paths on each tier. A tea pavilion, with spacious terraces, raised about 10ft. above the general level, forms the apex of the lay-out, in front of which is a lawn, with ponds for waterfowl. Beyond this are pens for deer, with shelters underneath the first terrace path, as shown by the sectional diagram. A broad ditch separates this pathway from the bear enclosures, which also communicate with dens carrying a pathway at a higher level. The walls in front of these paths are pierced, so that the public may view the enclosures below without being seen by the other spectators, and behind each tier of dens are corresponding galleries, with a system of steel doors, so that the animals may be conveniently fed from the spaces beneath. From this higher level, about 30ft. above the general level, the hills rise to a height of about 70ft. These are divided by valleys, to allow of various species of mountain sheep, goats, etc., being shown. Each of the bear enclosures has a swimming-tank of large capacity, which can be filled from a storage-tank at a higher level, and under the hills are storehouses and other necessary accommodation. The work is executed in ferro-concrete, with brick and stone facings, to imitate rockwork, and the fittings are all of steel, no wood whatever being used in the construction. Messrs. John Belcher, R.A., and J. J. Joass, FF.R.I.B.A., are the architects. The view given by our double-page plate was exhibited at the Royal Academy Galleries which closed last month.

NATIONAL GOLD MEDAL DESIGNS IN BLACK AND WHITE FOR BOOK ILLUSTRATIONS, BY MISS NOEL LAURA NISBET.

"The Polite Prince" is the title of a children's fairy-book, and the accompanying series of drawings is designed to represent incidents of this tale. The hero of the story is shown in the first picture, in the upper right-hand corner of our plate, setting out on his eventful journey over the hills and far away. The second scene, below the last, depicts the magician of the fable changing the rival of the prince into a raven, and this transformation is effected with manifest annoyance to his soldiery, who give vent to some excess of militancy, and display no small degree of threatened violence, not perhaps unnatural under such untoward circumstances. In the lower left-hand subject the scene is shifted, for here a prince has failed in his endeavour to disenchant the heroine princess, whom the Fates have destined to remain personified as "The Blue Bird," in which form the lady, thus enchanted, but none the less enamoured, is represented by Miss Nisbet's fourth picture, flying away with her lover, "the polite prince," who is being carried "off his feet," so to speak, and, indeed, he is seen high above the tree-tops, while the sun in the distance is setting beyond the western hills, next the horizon. What subsequently happened we cannot tell, being unacquainted with the sequel of this picturesque romance. When reviewing the exhibition of the National Competition works and drawings shown at the Victoria and Albert Museum in our issue for August 1 last, special reference was made to this gold medal set of four drawings by Miss Nisbet. They are mentioned in the official report of the examiners —Messrs. George W. Eve, R.E.; T. Erat Harrison, and Commendatore Walter Crane, R.W.S., in the following terms: "A gold medal has again been awarded to Noel Laura Nisbet, of London, Wandsworth, L.C.C.



"THE MAPPIN TERRACES," ZOOLOGICAL GARDENS, REGENT'S PARK.

Messrs. JOHN BELCHER, R.A., and J. J. JOASS, F.R.I.B.A., Architects.

Clapham School of Art, who shows great advance in technique. The two designs of the warrior crowd show great skill in pen-drawing and fine sense of black-and-white effect, and are distinguished by their excellence of design and drawing carried into details, besides being full of character and dramatic expression."

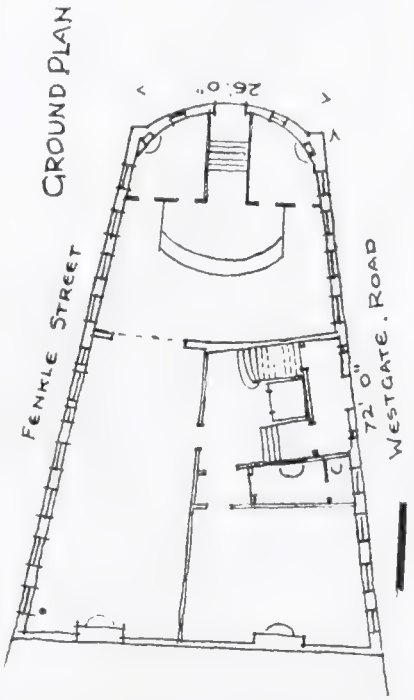
"CROSS HOUSE," NEWCASTLE-UPON-TYNE.

This building stands on the site of some old brick houses of the 17th century, which were cleared away for street widening. The effect of this improvement was to leave a long wedge-shaped site, difficult of satisfactory treatment, financially if not architecturally, owing to its narrowness and its great extent of prominent frontage. The building is a ferro-concrete skeleton structure, with walling of Portland stone and concrete backing only 12in. thick over all. This contrivance of walling solved the difficulty of obtaining adequate floor space for office purposes, and, commercially, the result is successful. The contractors for the building were Messrs. Davidson and Miller, Newcastle. The lift was made by Messrs. Waygood and Co. The architects are Messrs. Cackett and Burns Dick, FF.R.I.B.A., Newcastle, the work having been supervised by Mr. W. Boocock, clerk of works. The drawing reproduced to-day was shown at the Royal Academy this year.

"BOY AND GOOSE," BY BOETHUS OF CHALCEDON, 264 B.C.

NATIONAL GOLD MEDAL SHADED DRAWING FROM THE ANTIQUE, BY MR. WM. H STEVENS.

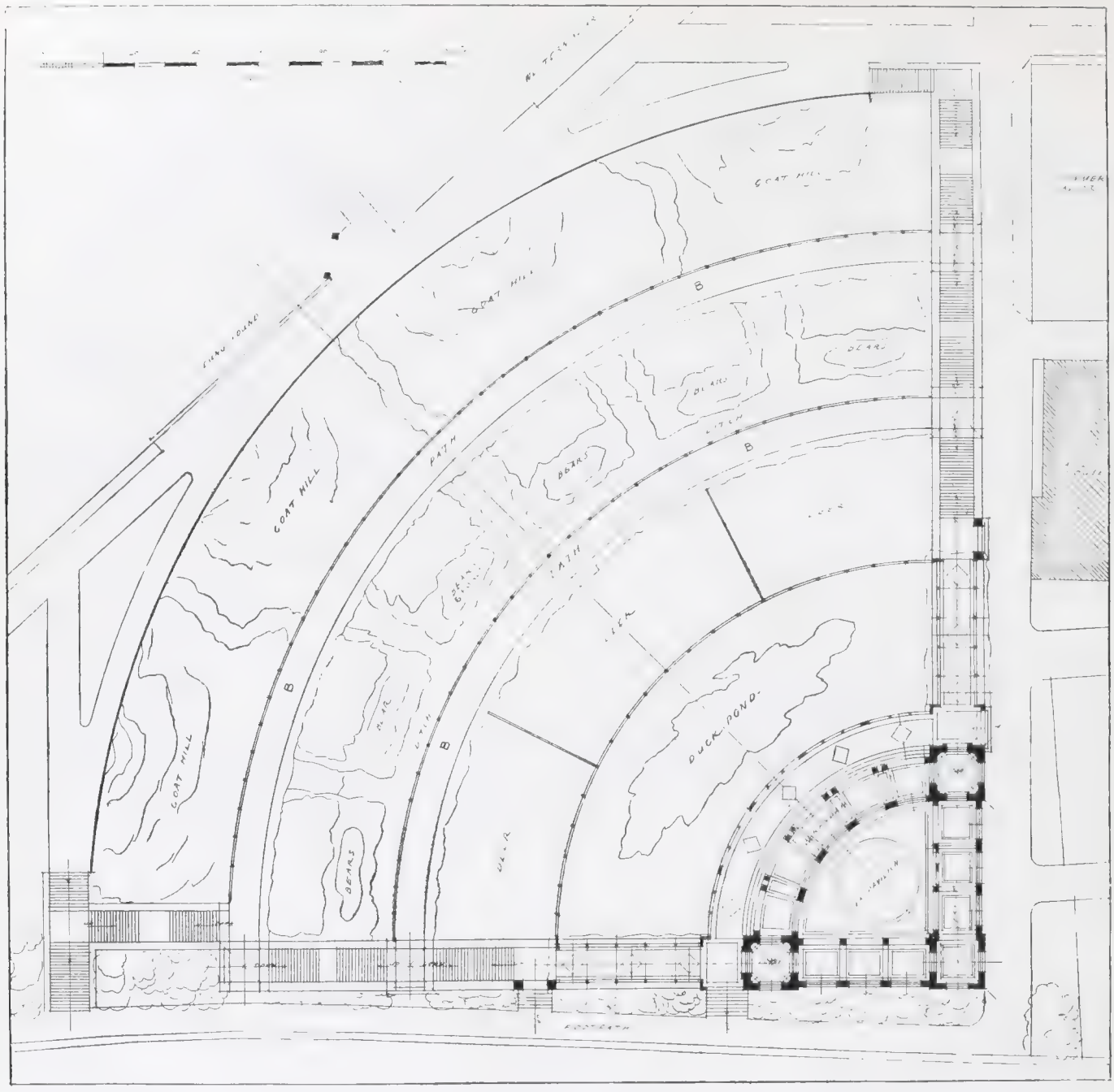
Authorities differ as to the precise intention of this group, which belongs to the commencement of the Hellenistic Age. Common agreement, however, assigns the work to Boethus, a famous artist of the Alexandrian school, which was distinguished for its decorative sculpture and for the minute excellence of many beautiful works wrought in silver and other precious metals.



CROSS HOUSE, NEWCASTLE-ON-TYNE.

Messrs. CACKETT and DICK, Architects.

The date of this statue is not later than 240 B.C., and it is remarkable as a subtle piece of genre, replete with the fascinating charm of intentional humour, conceived in a free spirit of playfulness, indicative of that sense of characteristic mockery so emblematical of a period which found expression in its reaction against the long-prevailing irksomeness of a too-elaborate civilisation, and as a revolt against the culture of the Attic school. The particular charm of this individual work is due to its marvellous truth and skill of execution. Some experts describe its subject as a parody on the first "labour" of Heracles, when he strangled the Nemean Lion; but, on the other hand, Professor Gardner, with more discrimination, points out that to properly understand the subject it must be remembered that the goose was a regular inmate of a Greek house, a model and companion of a good housewife, and the playmate of the children in the home; it occupied, in fact, much the same position as in a modern household is assigned to the domestic cat. The playmates are here represented quarrelling, and that in good earnest, while the reality of the conflict is exemplified by the mock-heroic attitude of the boy as he plants his feet widely apart, in order to wrestle with the unwieldy bird, almost as big as himself, and tightly grasping his companion with both arms round its neck. The subject evidently had a great vogue, and this work of Boethus is referred to in the Mime of Herondas, which describes the visit of two ladies of Cos to the Temple of Æsclepius. Many copies were made of it, and one is to be seen in the Louvre at Paris. Adaptations found favour for use as fountains, the water being made to issue from the beak of the goose. It was repeated again and again, with endless variations; one of the most interesting is a small silver statuette from Alexandria in the British Museum, where a boy is seated and grasps a smaller goose round the body while it bites his ear. Two other statues of children by Boethus are recorded, one of the infant Asclepius and another of a seated boy, gilt, and probably of bronze, which was set up at Olympia. It



THE MAPPIN TERRACES," ZOOLOGICAL GARDENS, REGENT'S PARK: GENERAL PLAN.
Messrs. John Belcher, R.A., and J. J. Joass, F.R.I.B.A., Architects.

may be added that there is no evidence for associating this boy, as has been done, with the "Spinario" of the Capitol, or with the Hellenistic version of the same subject now in the British Museum. Professor Gardner further remarks concerning these juvenile representations that they were the product of the same assumed simplicity which marked the pastoral tendency of Hellenistic reliefs when the people, cooped up in towns, amidst the conventions and restraints of a highly refined and artificial civilisation, experienced a craving for country life and manners, from which they were isolated by the dreary level of the Delta, in the crowded streets and squares of Alexandria. The Greek sculptors of the 4th century had made no attempt to render children with any truth to nature, and when a child formed part of a group, as in the Hermes of Praxiteles, with the infant Dionysus, the treatment accorded to the baby is merely that of an accessory. The proportions of childhood were ignored by these masters, and they represented the body simply like that of a full grown man on a smaller scale, while the faces show no study of childish forms. Exceptions, of course, may be quoted, such as the 4th-century head of a boy from Paphos and that of Cephisodotus in a stela from Lerna; but even these, though they show more of an attempt to catch the characters and expression of childhood, certainly do not imply a recognition of the rounded and chubby figure and undeveloped proportions that properly belong to young children. The Hellenistic age changed this state of things, and from that time on the chubby, babyish Cupids which Late Greek and Roman art rendered with truth to nature become familiar, and, indeed, such a choice was frequently made with especial predilection as a subject for sculpture. It seems as if the age of innocence in children, like the imagined innocence of rustic life, had a peculiar fascination for those who felt themselves oppressed by their too complicated surroundings, and this feeling is equally emphasised in the more ornate work of the Renaissance.

WORKING DETAIL, XXXI. WEYMOUTH STREET, W.

No. 31, Weymouth-street is an example of a town house with full accommodation which has been erected at moderate cost. It is constructed partly over an archway leading to premises at the rear, and advantage has been taken of this to provide a fine drawing-room on the first floor, about 35ft. by 20ft. The façade is entirely of Portland stone, and the walls of the principal rooms are panelled and painted white, with the doors and finishings in mahogany. The illustration was reproduced from the outline detail drawing exhibited this year at the Royal Academy. Messrs. John Belcher, R.A., and J. J. Joass, FF.R.I.B.A., are the architects.

A Local Government Board inquiry will be held at Bridlington on Tuesday next, into an application of the corporation for sanction to borrow £600 for the purchase of property in Portland-place for depôt purposes, £600 for the purchase of Centre House for the improvement of Market-place; and £4,600 for the widening and improvement of Cardigan-road.

The present exhibition of Pre-Raphaelite pictures from Lancashire collections at the Tate Gallery will close on Sunday next, and from October 16 onwards until January a collection of works by William Blake will be on view at Millbank. Besides about 150 of the most important paintings, drawings, and books, by Blake, a few pictures by his contemporaries and pupils, Flaxman, Fuseli, Stothard, George Richmond, Calvert, Linnell, and Palmer, will be exhibited, with a view to showing Blake's influence on British art of the period.



"THE MAPPIN TERRACES," ZOOLOGICAL GARDENS, REGENT'S P.



, LONDON.—Messrs. JOHN BELCHER, R.A., and J. J. JOASS, F.R.I.B.A., Architects.

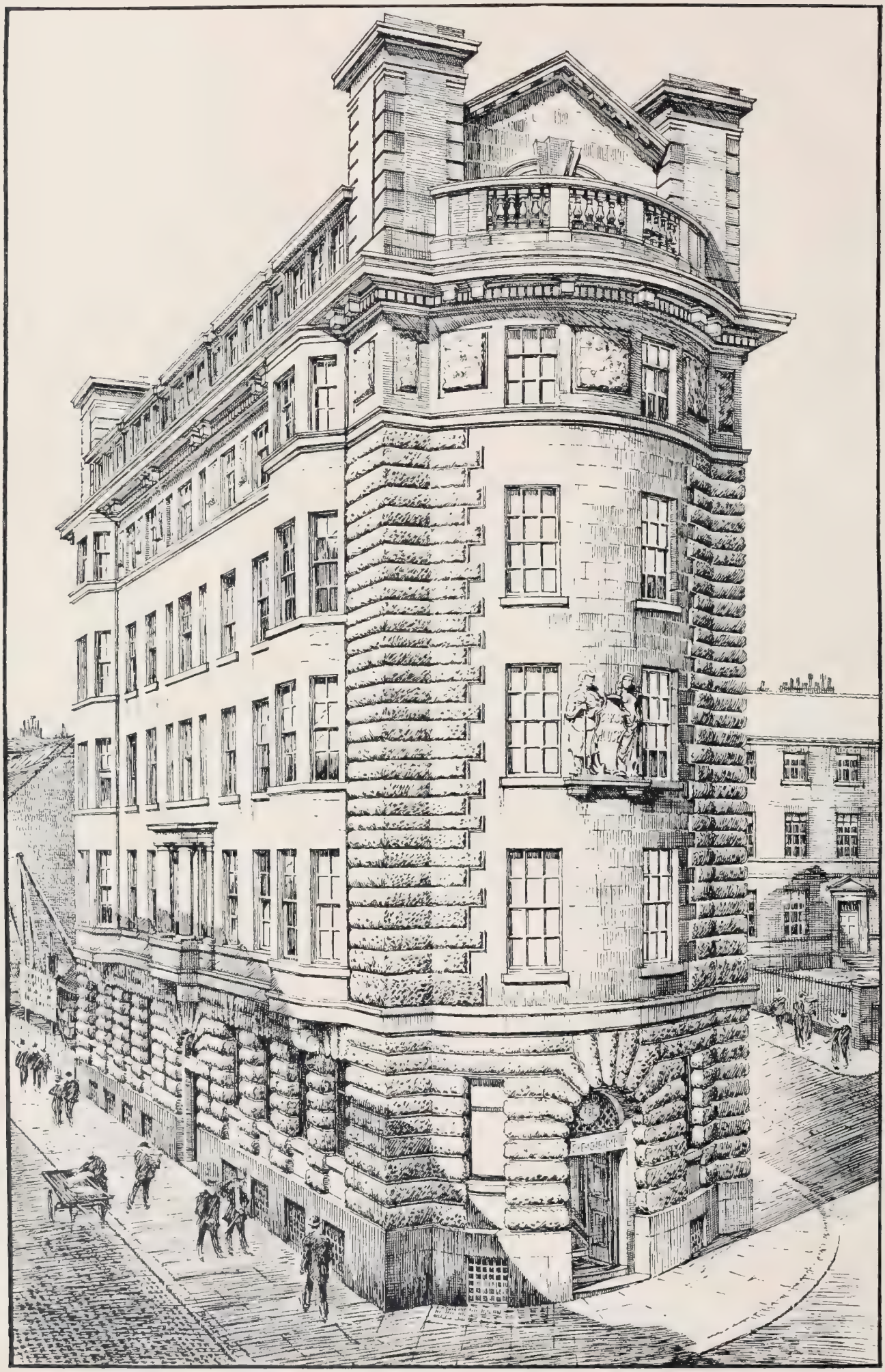








NATIONAL GOLD MEDAL DESIGNS IN BLACK AND WHITE FOR BOOK ILLUSTRATIONS.—By Miss Noel Laura Nisbet.
SCENES FROM "THE POLITE PRINCE."

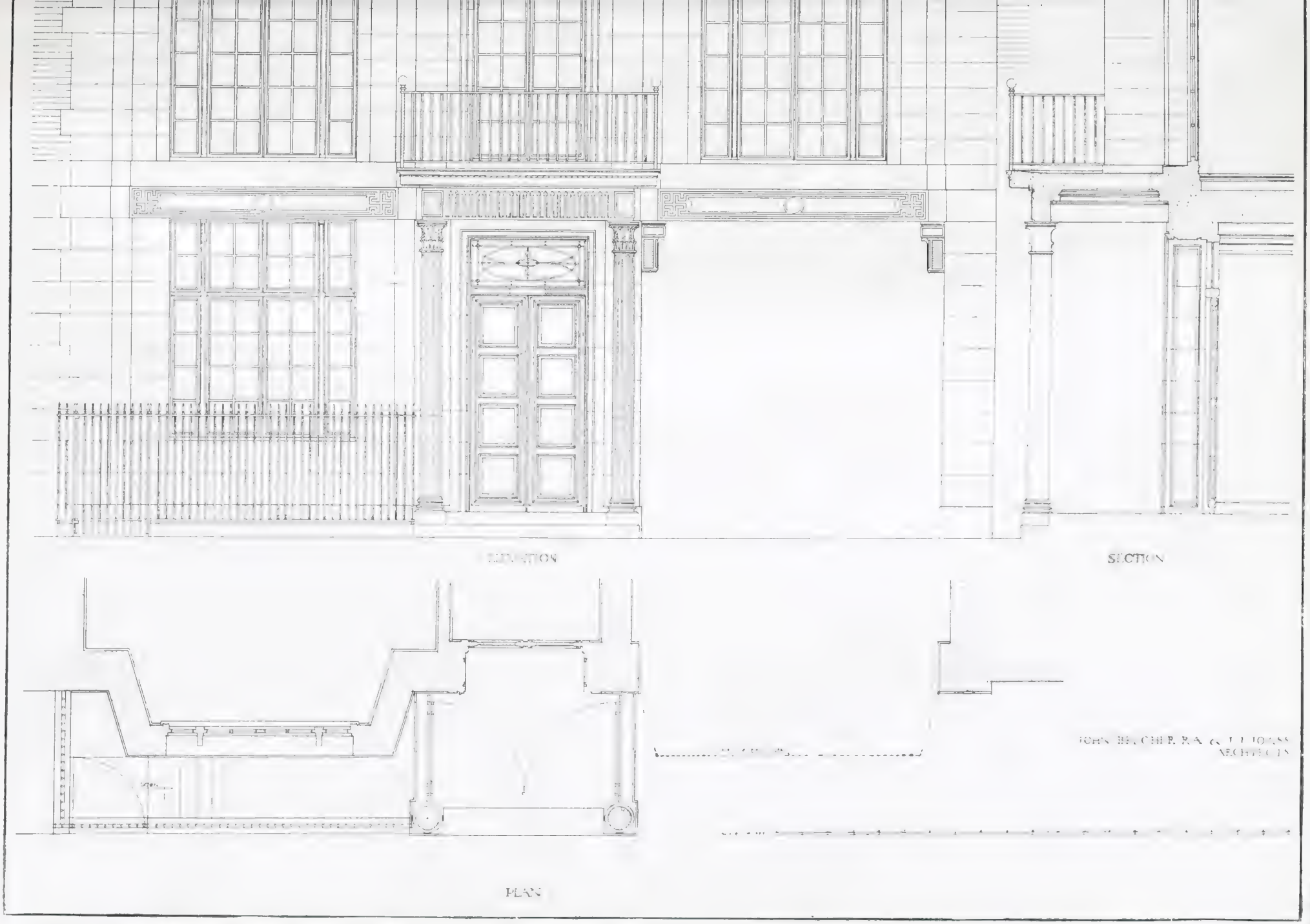


"CROSS HOUSE," NEWCASTLE-ON-TYNE.
Messrs. CACKETT and DICK, FF.R.I.B.A., Architects.



"BOY AND GOOSE," BY BOETHUS OF CHALCEDON, 264 B.C.
NATIONAL GOLD MEDAL SHADED DRAWING FROM THE ANTIQUE.
By Mr. Wm. H. Stevens.


DEVONSHIRE STREET W.
for
HENRY POWLOCK Esq.



DETAIL DRAWING OF XXXI. WEYMOUTH STREET, W. Messrs. JOHN BELCHER, R.A., and J. J. JOASS, F.R.I.B.A., Architects.

Building Intelligence.

HAMILTON.—The new Academy erected in Auchincampbell road by Hamilton School Board at a cost of, with equipment, £70,000 was, on Monday afternoon, formally opened. The new building is the fourth successor of the old Grammar school of Hamilton, founded by the ducal family of Hamilton early in the 16th century. It stood near the old churchyard adjoining the present Palace, and was endowed by John, Lord Hamilton, in 1588, with 920 Scots. The present building, which is three stories high, with basements, has three front entrances, and in its general arrangement provides for the ordinary class rooms to the front, and the technical school classrooms, with separate outside entrances, to the rear, and the art rooms on the upper floor. The central hall is, perhaps, the most important architectural feature in the building, and will be used for special purposes. It extends through two stories, and is lit by six large windows, each having leaded and stained glass, with figures representing literature, science, art, music, technology, and gymnastics. The other departments of the Academy include a lecture-hall, six laboratories, manual-training room, art rooms, engineering laboratories, gymnasium, etc. The building has been erected to plans by Messrs. Cullen, Lochhead, and Brown, architects, Hamilton. We illustrated and fully described their design, which was selected in competition, in our issue of November 26, 1909.

HEBBURN.—The formal opening of St. Oswald's new mixed school at Hebburn Colliery took place on Monday. The school, which accommodates about 250 scholars, is a single-story building, consisting of five classrooms, opening off a wide corridor, with boys' and girls' entrances and cloakrooms at each end. By means of collapsible partitions, three of the classrooms can be thrown into one large room for parochial purposes. The work has been carried out by Mr. W. D. Allison, contractor, Whitburn, to the designs and under the superintendence of Mr. J. E. Morton, F.R.I.B.A., Newcastle and South Shields. The heating is on the low-pressure hot-water system, and natural ventilation is obtained by hopper sashes in the lower, and pivot-hung sashes in the upper, part of the windows, which are steel casements throughout. The lighting is by electricity. Externally, the building has been treated in a simple manner.

Mr Frank T Verity, F.R.I.B.A., who holds the appointment of architect to the Lord Chamberlain's Department, has received the honour of election as corresponding member of the Société Archéologique de France.

The fire which broke out on Friday night in the Franciscan monastery at Ragusa destroyed the interesting Early 14th-Century pharmacy with its contemporary vases for preserving herbs. The church and library were fortunately saved.

New York architects have been asked to submit competitive plans for a building that will be more than twelve stories high, which will be erected at Second-avenue and Second-street in that city, for the Essex Market Police-court. Plans are to be submitted by November 15.

The urban district council of Llandudno approved on Saturday, after long consideration, a committee's plans prepared by Mr. Arthur Hewitt, architect to the Pier Company, for widening the pier and constructing a new entrance. The council will construct a new concrete jetty under the overhanging portion of the pier extension, the company agreeing to contribute to the cost.

At a meeting of the urban district council of Wellington, Salop, on Friday, a communication was received from the Local Government Board, sanctioning a loan of £3,125 for the purpose of providing workmen's houses under the Housing of the Working Classes Act. The Board pointed out that the rent, 3s. 6d. a week, appeared to be too low for the class of house proposed to be erected, and intimated that, having regard to the number of houses closed in the district, a further scheme should be embarked upon. The letter was referred to the sanitary committee for consideration.

LEGAL INTELLIGENCE.

FALL OF A MANTELPIECE. COTTAGE LANDLORDS' OBLIGATIONS.—An important case, affecting the liabilities of owners of [illegible] under the Housing and Town Planning Act, 1909, was heard in the Sheriff Court at Glasgow on Friday, when Arthur Mitchell, the owner of Cowlishaw's-[illegible], was sued by John Isherwood, general broker, a former [illegible], for £[illegible] damages for injuries sustained as a consequence of the defendant's alleged failure to comply with the section of the Act requiring houses of that class to be kept by the owner reasonably fit in all respects for human habitation. Mr. Walter Cobbett, for the plaintiff, said plaintiff had to patch up the flagged floor in the kitchen. The [illegible] were the repairs of the landlord, [illegible] had to call for the housekeeper [illegible] taken ill with diphtheria, and had to be removed to the hospital. While she was there, the local authority served notice upon the landlord, requiring him to take up and relay the yard, which was in a very defective and apparently insanitary condition. Shortly after the housekeeper returned from the hospital, the plaintiff was standing in the kitchen, when the stone mantelpiece fell [illegible] struck him. As a result he was prevented from following his employment. His Honour gave judgment for the plaintiff for £20.

KIRKCALDY BUILDER'S BANKRUPTCY.—In Kirkcaldy Bankruptcy Court on Friday, Alexander Welsh, jun., was examined in bankruptcy. He stated that he commenced business five years ago as a speculative builder. He had then £20 capital. He had built at least fifty houses. His liabilities amounted to £1,796 5s. 10d., and his assets to £98 18s. 1½d. He accounted for the large deficit in five years to the state of the property market.

FATAL FALL FROM SCAFFOLDING.—An inquest was held at Bristol on Friday, on Thomas Walter Bryant (27), of 14, Callowhill-street, St. Paul's, a labourer, employed by Messrs. T. Lovell and Sons, of Bath-road, in that city, who met his death on Thursday as the result of a fall from some scaffolding. William Phelps, 9, Edward-street, Upper Easton, a plasterer employed by Messrs. T. Lovell and Son, said that the deceased and he were taking down strutting on a ledge at Mark-lane, St. Augustine's. They were both standing on a 9in. plank resting on the scaffolding poles, facing each other across the lane. The plank was quite firm, and could not move. The strut suddenly came loose, and caused Bryant to fall, and with him a quantity of the timbering on the house. The witness said that the only thing that they had to support them was the 9in. plank. There was no guard-rail fitted to the plank, nor were there any edging-boards. Cross-examined by Mr. Metcalfe, the witness said that the plank was 9ft. long, and although he had worked on similar saffolding many times, he had never seen a guard-rail or edging-board used. J. O'Connell, who erected the scaffolding, and was there at the time of the accident, said that the cause of the accident was the knocking out of the strut, which caused the two uprights to lean forward, and so disturb the lower timbering, bringing the whole down. A verdict of "Death from concussion of the brain caused through being involved in a falling scaffolding" was returned.

Mr. J. H. W. Park, late colonial engineer in British Guiana, has been appointed Director of Public Works in Jamaica, in place of Mr. P. R. A. Willoughby, and has assumed duty.

The Bristol Board of Guardians decided at their meeting on Friday to obtain on a twenty-one years' lease the tenancy of premises adjoining St. Peter's Hospital, and instructed Mr. W. S. Skinner, architect, of Bristol, to prepare plans for the necessary alterations to the new property, including the reconstruction of the first floor, to form additional offices for the clerk's department.

At the Sessions House, Spalding, on Tuesday week, a meeting was held of the Holland Roads and Bridges Committee. The death was reported of Mr. J. R. Smart, examiner of the urban main road claims to the committee, and his partner, Mr Joseph Stevenson, of Peterborough, was appointed to the position. The principal business was the appointment of a South Division main roads surveyor, in the place of Mr. T. J. Peacock, of Spalding, resigned. Originally there were 46 applicants; but these had been reduced by a sub-committee to four, from among whom Mr. Arthur William Lloyd, assistant surveyor to Black Sluice Commissioners, Boston, was elected. The salary is £150 a year.

WATER SUPPLY AND SANITARY MATTERS.

LANARK EXTENDED WATER SUPPLY.—In May, 1906, the town council began to make additional provision for the water supply to the burgh as follows:— 1. A new service reservoir at Lanark. 2. A 9in. main pipe from the Cleuch Burn to Lanark to utilise at once the water of that stream on which the proposed reservoir was to be situated. 3. A storage reservoir on the Cleuch Burn. 4. Filters and clear water tank at the Cleuch reservoir. 5. Filters and clear water tank at the existing Lochlyock Reservoir on the Blythsgate Burn. The construction of the service [illegible] completed at the beginning of 1910. Immediately after the arrangements were made for [illegible] plated, and the operations were begun about two years ago. The Cleuch Reservoir is situated on the Cleuch Burn, near the junction of a [illegible] mile distant from the Lochlyock Reservoir. The area draining into this reservoir lies mainly on the western slope of Tinto. The reservoir will have a capacity of about 22 million gallons, and the top water level is 1,050ft. above mean sea-level. The greatest height of the embankment is 47ft., and the maximum depth of water is 38ft. The scheme was originally reported on by Mr. Radcliffe Barnett, C.E., now of Keighly Waterworks, under whose direction the first portion was carried out. The latter portion has been carried out under the direction of Mr. T. O. Niven, C.E., Glasgow, the contractor being Mr. Wm. Wilson, Hamilton. The cost of the whole scheme will be about £30,000. The works were opened on Thursday.

ROCHDALE.—The first section of the extensions at the Roch Mills sewage-disposal works of the Rochdale Corporation was opened on Thursday in last week. The full scheme which Mr S. S. Platt, the borough engineer, designed and submitted to his committee and the council in the early part of 1910 involved an outlay of £54,000. The council decided to provide only half the installation at this stage, the Local Government Board giving its sanction on the understanding that the second portion also is completed by May, 1915. Expenditure on the work now carried out amounts to about £32,000, leaving £22,000 still to be laid out to finish the scheme. To provide storm-water tanks for the sudden outfall, Mr. Platt has utilised the existing tanks erected in 1888, which have been inadequate in capacity for their original purpose. After chemical precipitation, a fifth of the tank liquor will be dealt with on 45 acres of land already laid out for filtration, the remainder of the dry-weather flow passing by gravitation to a pump-well, where it will be treated upon thirteen percolating filters, each 9ft. deep. After passing through the filters, the flow from the tanks is taken by channels to two humus tanks, through which it passes slowly. The humus tanks are in duplicate, to allow periodical cleansing. The filter effluent, having passed through these tanks, can, if necessary, be dealt with on the adjoining fine ash beds 2½ acres in extent, and hitherto used as secondary contact beds. The pump-house is one story high above ground, and is finished in Accrington facing bricks, with Yorkshire stone dressings. The power is here, as for all the new work, electrical. There are also in connection with the scheme catchpits, screening and raking apparatus, and chemical mixing plant. The electrical part of the scheme has been designed and supervised by the electrical engineer, Mr. C. C. Atchison, acting in co-operation with Mr. Platt. The constructional work of the extensions has been carried out under contract by Messrs. J. Bentley and Co., of Bradford.

A new council school has been formally opened at Gartheli, Cardiganshire. Mr. Dickens Lewis, of Aberystwith, was the architect, and Mr. J. Owen, of Lampeter, the contractor.

Plans of Newcastle-on-Tyne Corporation's town-planning scheme in Craghall Dene area may be inspected at the town-hall for a period of 21 days, commencing from the 17th inst. The land covers an area of 52½ acres, half of which is situated within the city boundaries, and the remaining portion in the urban district of Gosforth. The land lies to the north of High West Jesmond, and is very pleasantly situated.

The King Edward memorial at Northampton was unveiled on Saturday. The memorial, which is the work of Sir George Frampton, R.A., is placed at the corner of Cheyne-walk and Billing-road, and consists of a bronze bust on a pedestal approached by steps. Behind is a curved screen wall of masonry, surmounted by a group of St. George and the Dragon in bronze. The cost has been £1,156.

Our Office Table.

The University Extension lectures this session include two courses of great interest—one on "Ancient Architecture" and another on "Renaissance Architecture," by Mr. Banister Fletcher, F.R.I.B.A., the author of "A History of Architecture on the Comparative Method." The lectures, illustrated by lantern-slides and models, will be delivered in the British Museum and Victoria and Albert Museum respectively. They deal with the beautifying of our cities, the building of the home, and they trace the evolution of architectural styles, and will supply the knowledge necessary to identify the periods and characteristics of buildings both at home and abroad, while there will be a unique opportunity of visiting the Museum exhibits. The interest in this subject is steadily increasing, and Earl Curzon of Kedleston has joined the committee for these lectures on architecture. Particulars can be obtained from the hon. sec., 10, Woburn-square, W.C.

The autumn exhibition at the City Art Gallery, Manchester, includes, among the comparatively few portraits, that by Sir Hubert von Herkomer of Viscount Morley of Blackburn in his academical robes as Chancellor of the Victoria University of Manchester (a canvas presented to the University by Convocation), and another by Arthur T. Nowell of Sir Alfred Hopkinson, first Vice-Chancellor of Manchester University, attracts attention. Mr. Briton Riviere's "Androcles and the Lion" has been given a topical interest by Bernard Shaw's absurdity. The best snow scenes are John Lavery's "Jungfrau," Byron Cooper's "The Alps at Dawn," and "The Solemnity of Winter," by Harry W. Adams. Other noteworthy landscapes are George Smith's "Benbecula Ford"; "A Lancashire Valley," by Sir Alfred East; W. M. Frazer's "Flowing to Loch Tay"; and Ogilvie Reid's "On the River Spean." The foremost genre work is T. C. Gotch's "Return from the Pageant."

In a letter to the *Times*, "An Intending Competitor" draws attention to the manner in which the new Board of Trade offices in Whitehall are to be built. He points out that a line has been drawn across the centre of the building site, and architects are invited to consider the southern half of the site as the portion to be built over first, particulars of the accommodation required being given for that half only, with a vague statement that the other half may be assumed to be essentially similar in arrangement. To divide a site across the centre in this way, and make two jobs of it, is, as he says, to place a serious difficulty in the way of evolving a great and comprehensive architectural scheme. It would surely be wiser to allow the competing architects to work out the plan and design as a whole, and afterwards consider how much of it can be carried out in the first instance.

The Hollingbourne Rural District Council considered at their last meeting a letter from Messrs. L. J. Clark and Co., explaining why plans had not been forwarded for approval before the commencement of a building, in the course of which Messrs. Clark wrote that they hoped it would suffice if the plans were approved by the council, acting on the report of the sanitary inspector, as "for private reasons we would prefer that they were not presented to the plans committee." Mr. Wood, a member, pointed out that an inspector had no authority to pass plans, and suggested Messrs. Clark and Co. should be censured for writing such a letter as that. The sanitary inspector reported that the plans did not comply with the by-laws, inasmuch as they did not show the block plans, scale, or dampcourse. Mr. Roseveare moved that the council accept Messrs. Clark's explanation of why the plans were not deposited with the council before. Mr. Wood proposed that proceedings be taken against Messrs. Clark for not complying with the by-law. There was no seconder of Mr. Wood's amendment, while seven voted for Mr. Roseveare's resolution, which was carried.

A Local Government Board inquiry has been held by Mr. C. H. Sykes, inspector, at Loughborough, Leicestershire, with reference to the corporation's application for sanction to borrow £5,325 for the widening and improvement of New-street, and the construction of a new street from Church-gate to Rectory-place, and the widening of Rectory-place. The town clerk, Mr. H. Perkins, explained that there were two separate schemes. A loan of £800 was required to carry out the improvement in New-street, a narrow private street with a poor class of houses on both sides. It was proposed to sweep away the whole of the property on both sides of the street, and to make a 40ft. road. With respect to the proposed loan of £4,525 for the Steeple-row improvement, the scheme consisted of making a street 40ft. wide from Churchgate to Toothill-road. This would involve pulling down the whole of the property in Steeple-row, and the widening of a considerable portion of Rectory-place. On each side of the new road there would be ornamental grounds 28ft. in width.

The Building Exhibition in the Zoo Buildings, Glasgow, organised by Messrs. H. Greville Montgomery and Hugh C. Montgomery, was declared open on Saturday by Sir John Ure Primrose, Bart., and includes examples of practically everything that goes to make the ideal modern house—building materials, devices for the lighting and heating of houses, appliances for the better sanitation and the "weather-proofing" of older houses, roofing and flooring materials, and "washes" and other treatments for walls. Over 600 firms are showing, and the exhibits include types of machinery, implements, building materials, gas and electric-lighting appliances, fire-resisting flooring, damp-proof roofing, bathroom fittings, ranges, stoves, etc. In addition, there is a model cottage which has two rooms, kitchen, scullery, cupboards, a fair-sized lobby, etc. The exterior is treated in the Scottish style, and the interior washed in a simple colour. Such a cottage could be erected for £250. At the opening ceremony Sir John Ure Primrose said that the exhibition was designed in the highest sense as an educative exhibition—educative to the architect and to the builder, and as giving some idea of what resources were now in their hands for the building of desirable dwellings.

In the course of a correspondence in the *Birmingham Daily Post* upon the duty of licensing justices to endeavour to safeguard the public by insisting upon receiving details of construction of picture palaces, Mr. T. Salway Nichol, the president, and Messrs. Holland W. Hobbiss and John B. Surman, the hon. secretaries of the Birmingham Architectural Association, write expressing the opinion that immediate steps should be taken to strengthen and extend the city by-laws so as to include street construction. This should apply not only to cinemas, but to every type of building erected. They add that the association will gladly assist the city council in any steps they deem necessary to take. Another correspondent, writing from West Bromwich, draws attention to the way in which many of the sub-contracts for structural steelwork are let in connection with picture palaces and other buildings. In many cases the architect's drawings only indicate the work required by thin blue lines, representing roof trusses, girders, stanchions, etc., no scantlings being given. The general contractor, when sending in his tender for the complete building, makes more or less a rough calculation of the probable cost of the steelwork from information supplied to him indirectly. If he is successful in obtaining the contract, he then sends out to various structural firms for prices, and, of course, accepts the lowest. The writer refers to cases where a contractor has made use of the lowest tender received to bring another firm (not yet invited to tender) still lower in price by the offer of the contract. A constructional engineer often finds that his price is, perhaps, 50 per cent. higher than that of the successful firm, the fact being that the successful firm's steelwork is correspondingly lighter in design. He suggests that it would manifestly be better for the architect, when making plans, to send out for competitive designs and estimates for his steelwork, and consider the prices in conjunction with the merits of the designs submitted. The firm whose tender was accepted could then supply stress diagrams and calculations to justify their scantlings, and these the architect could submit along with his plans to the city surveyor.

The State of California has under contemplation the erection of 1,164,500dol. worth of buildings. Fifty thousand dollars is to be spent for the erection of a Home for the Adult Blind in Oakland; 95,000dol. for additional buildings at Agnews, 50,000dol. for the construction of a gymnasium at the California Institution for the Deaf and Blind at Berkeley; 33,000dol. for shop-building and 7,000dol. for farm-building at Folsom State Prison; 185,000dol. for Fresno State Normal School; 10,000dol. for glass plant at Mendocino State Hospital; 20,000dol. for group of cottages at Napa Asylum; 25,000dol. for laundry at Napa; 12,000dol. for the erection of a hospital building at the Preston School of Industry; 17,000dol. for cottage for epileptic patients at Sonoma State Hospital; 2,000dol. for restoration of old Sonoma Mission at Sonoma; 19,000dol. for erection and furnishing of nursery building at Sonoma; 100,000dol. for construction of four cottages at Southern California Asylum; 250,000dol. for site and new buildings for new Southern California Hospital; 76,000dol. for new buildings at Stockton Asylum and Farm; 15,000dol. for assembly and library building, and 13,000dol. for general repairs, at Veterans' Home, Yountville.

MEETINGS FOR THE ENSUING WEEK.

Friday (To-day). Royal Archæological Institute. Special Visit to Stonehenge. Train from Waterloo Station 10.50 a.m.
L.C.C. Westminster Technical Institute. "Reinforced Concrete Design," by Percy J. Waldram. 7.15 p.m.

Saturday (To-morrow). Institution of Municipal and County Engineers. South-Western District Meeting at Tiverton. 10.30 a.m.

Monday. Society of Engineers. "Highways," by C. B. Cooper, M.Inst.C.E. Institution of Electrical Engineers. Victoria Embankment, E.C. 7.30 p.m.

Wednesday. Institute of Sanitary Engineers' Opening Sessional Meeting. Caxton Hall, Westminster. 7.30 p.m.

Thursday. University Extension Lecture, L.C.C. Central School of Arts and Crafts, Southampton-row. "The Art and Craft of Architecture," by S. C. Kaines Smith, M.A., 8 p.m.
Royal Photographic Society. "Chartres Cathedral," by Henry W. Bennett, F.R.P.S. Suffolk-street Galleries, Haymarket. 8.30 p.m.
London Salon of Photography. "The King's Highway," by A. H. Blake, M.A., 9a, Pall Mall, East. 8 p.m.

The Rhondda Urban District Council has appointed Mr. J. M. Bowman, at present chief engineer of the Hertford undertaking of the North Metropolitan Electric Power Supply Co., to the position of engineering clerk of works in connection with the council's electricity undertaking.

A statue, entitled "Labour Awakening," was unveiled on Saturday at Unity House, Euston-road, N.W., the headquarters of the National Union of Railwaymen, by the sculptor, Mr. Cyril Chitty. The statue represents Labour as a nude young man rising from a recumbent position and throwing off a set of shackles.

A Local Government Board inquiry was held at Durham, by Mr. Cross, on Friday, into an application by the city corporation to borrow a further £1,500 in respect of the sewage works. The expenditure is in connection with a scheme for dealing with the sewage during heavy rainstorms. There was no opposition.

The contract for the new Lothian railway, to facilitate the traffic between the Lothian coalfields and the port of Leith, has been placed by the North British Railway Company with Hugh Symington and Sons, Ltd., railway contractors, Glasgow. The amount of the contract is £165,000, and the line is to be completed within eighteen months. There will be three and three-quarter miles of double track, and two and three-quarter miles of single track, and also six miles of sidings.

Trade News.

WAGES MOVEMENTS.

LONDON.—A disorderly meeting of the heterogeneous body styled the "London Labourers' Union" was held last Sunday afternoon at the Ring, Blackfriars, at which amid much noise and confusion the following resolution was declared carried:—"This meeting of the London Labourers' Council, having heard the report of the deputation that waited upon the Master Builders' Association, hereby resolves that the offer of the Master Builders' Association is unsatisfactory, and we advise our members not to accept the new rules unless the employers agree to an advance of ½d. per hour, beginning the third week in October, and grant the overtime rates from 5 p.m. to 8 p.m. on ordinary weekdays at the rate of time and a quarter, time and a half for Saturday afternoons from 12 to 4, and all overtime rates to apply equally to night and day workers. Failing a satisfactory reply to these demands by Wednesday next, we delegate authority to the London Labourers' Council to arrange for notices to be handed in on that day." It need hardly be said that the United Builders' Labourers' Union, which is a genuine and respectable society, on perfectly friendly terms with, and quite recognised by, the Master Builders, had delegated no authority to the outsiders who want it to carry them on its back, to do anything of the sort. The United Builders' Labourers' Union is still discussing terms with the Master Builders' Association, and another conference is to be held up next Monday. The demands of the Builders' Union have a substantial basis of reason and justice. There is nothing ridiculous about them, like the recent attempts of the painters to boycott non-unionists. The outcome should be a settlement on the lines of give and take, and that will probably be effected.

TRADE NOTES.

To insure the flat roofs and parapets of the new county schools at Langport, Somerset, being leakproof, the powder Pudlo, which makes cement waterproof, has been specified.

The National Gas Exhibition opens on October 1 at the International Exhibition Halls, Shepherds Bush, W., and will remain open during the month. Conferences and lectures will be held daily.

The asphalte to the superstructure of the new Stationery Offices, Stamford-street, will be supplied and laid by Claridge's Patent Asphalte Co., Ltd., 21, Surrey-street, Victoria-embankment, London, W.C.

Under the direction of Mr. G. E. Maynard, architect, Bexhill-on-Sea, the "Boyle" system of ventilation (natural), embracing Boyle's latest patent "air-pump" ventilators and air-inlets, has been applied to the Picture House, Silver Hill, St. Leonard's-on-Sea.

Messrs. J. B. Joyce and Co., Ltd., Whitchurch, Shropshire, have received instructions to make a large clock, striking the hours and Cambridge quarters, for Norton Church, Evesham; also a clock striking the hours, and showing time upon two dials each 5ft. diameter, for Caerwys Church, Flintshire.

The hill-climbing triumphs of the Invincible Talbot Car are not confined to Britain alone. After winning over 40 highest awards in the classic events promoted by the principal motoring associations of this country, Talbots have just demonstrated their prowess in an international hill-climb held at Biarritz.

Mr. F. G. Mager has been appointed to act as executive engineer at Perak.

The salary of the surveyor to the Montgomery County Council has been increased by £150 per annum.

The work of regilding the ball and cross above the dome of St. Paul's and the pine-cone terminals of the two campanili has now been completed by Messrs. J. W. Gray and Son, of Leadenhall-street, E.C., who will now proceed with the regilding of the golden gallery. The work has been executed in double English gold. The same firm are overhauling the lightning-conductors of the cathedral.

Mr. Thomas Wonnacott, F.R.I.B.A., of Devonshire House, Fairfield, near Farnham, who is in his 80th year, has just celebrated his jubilee as a lay preacher of the Wesleyan Methodist Church. Mr. Wonnacott joined the Royal Institute of British Architects as an Associate in 1870, becoming a Fellow six years later, and retiring from practice eleven years ago. He carried out a large practice in London.

LATEST PRICES.

IRON.

Steel Joists, Belgian and German (ex steamer, London)	per ton	£6	2	6	to £6	5	0
Steel Joists, English		7	10	0	,, 7	12	6
Wrought-Iron Girder Plates		7	0	0	,, 7	5	0
Steel Girder Plates		7	2	6	,, 8	2	6
Bar Iron, good Staffs		6	5	0	,, 8	10	0
Do., Lowmoor, Flat, Round, or Square		20	0	0	,, 0	0	0
Do., Welsh		5	15	0	,, 5	17	0
Boiler Plates, Iron—							
South Staffs		8	0	0	,, 8	15	0
Best Snedshill		9	0	0	,, 9	10	0

Angles 10s., Tees 20s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £8 15s. to £9
Ditto galvanised, £14 to £15 10s. per ton

Galvanised Corrugated Sheet Iron—

	No. 18 to 20.	No. 22 to 24
6ft. to 8ft. long, inclusive	Per ton.	Per ton.
gauge	£13 0 0	£13 10 0
Best ditto	13 0 0	14 0 0

Wire Nails (Points de Paris)—

3 to 7	8	9	10	11	12	13	14	15	B.W.G.
8/3	8/9	9/3	9/9	10/3	11/-	11/9	12/6	13/6	per cwt.

	Per ton.			Per ton.		
Cast-Iron Columns	£7	10	0 to	£9	0	0
Cast-Iron Stanchions	7	10	0 ,,	9	0	0
Rolled-Iron Fencing Wire	8	5	0 ,,	8	10	0
Rolled-Steel Fencing Wire	7	5	0 ,,	7	10	0
,, ,, ,, Galvanised	8	15	0 ,,	9	5	0
Cast-Iron Sash Weights	5	0	0 ,,	5	5	0
Cut Floor Brads	9	15	0 ,,		–	
Corrugated Iron, 24 gauge	16	0	0 ,,		—	
Galvanised Wire Strand, 7 ply, 14 B.W.G.	14	5	0 ,,		—	

B.B. Drawn Telegraph Wire, Galvanised—

0 to 8	9	10	11	12	B.W.G.
£10 10s.	£10 15s.	£11 0s.	£11 5s.	£11 15s.	per ton.

Cast-Iron Socket Pipes—						
3in. diameter	£6	2	6 to	£6	7	0
4in. to 6in.	6	0	0 ,,	6	5	0
7in. to 24in. (all sizes)	5	7	6 ,,	6	0	0

[Coated with composition, 5s. 0d. per ton extra, turned and bored joints, 5s. 0d. per ton extra.]

Pig Iron—	Per ton.					
Cold Blast, Lilleshall	110s.	0d.	to	117s.	6d.	
Hot Blast, ditto	70s.	0d.	,,	75s.	0d.	
Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—						
Gas-Tubes				75	p.c.	
Water-Tubes				72½	,,	
Steam-Tubes				67½	,,	
Galvanised Gas-Tubes				65	,,	
Galvanised Water-Tubes				62½	,,	
Galvanised Steam-Tubes				57½	,,	

OTHER METALS.

Spelter, Silesian	Per ton	£20	1	0 to	£21	0 0
Lead Water Pipe, Town		25	0	0 ,,	—	
,, ,, ,, Country		25	15	0 ,,	—	
Lead Barrel Pipe, Town		26	0	0 ,,	—	
,, ,, ,, Country		26	15	0 ,,	—	
Lead Pipe, Tinned inside, Town		27	0	0 ,,	—	
,, ,, ,, ,, Country		27	15	0 ,,	—	
Lead Pipe, Tinned inside and outside, Town		29	10	0 ,,	—	
,, ,, ,, ,, Country		30	5	0 ,,	—	
Composition Gas-Pipe, Town		28	0	0 ,,	—	
,, ,, Country		28	15	0 ,,	—	
Lead Soil-pipe (up to 4½in.) Town		28	0	0 ,,	—	
,, ,, ,, Country		28	15	0 ,,	—	
[Over 4½in. £1 per ton extra.]						
Lead Shot, in 28lb. bags		24	15	0 ,,	—	
Copper Sheets, sheathing & rods		91	0	0 ,,	91	10 0
Copper, British Cake and Ingot		78	0	0 ,,	79	0 0
Tin, English Ingots		194	15	0 ,,	195	0 0
Do., Bars		195	15	0 ,,	196	0 0
Pig Lead, in 1cwt. pigs (Town)		22	0	0 ,,	—	
Sheet Lead, Town		24	10	0 ,,	—	
,, ,, Country		25	5	0 ,,	—	
Genuine White Lead		30	15	0 ,,	—	
Refined Red Lead		25	0	0 ,,	—	
Sheet Zinc		29	0	0 ,,	—	
Old Lead, against account		19	10	0 ,,	—	
Tin	per cwt.	11	0	0 ,,	—	
Cut nails (per cwt. basis, ordinary brand		0	11	6 ,,	—	

TIMBER.

CONSTRUCTIONAL.

Yellow Pine Deals, Quebec, per standard:—						
1st quality	£38	0	0 to	£45	0	0
,, ,, ,, 2nd ,,	26	0	0 ,,	32	0	0
,, ,, ,, 3rd ,,	16	0	0 ,,	18	10	0
Spruce Deals: St. Johns	10	0	0 ,,	11	10	0
,, ,, Miramichi	9	10	0 ,,	10	10	0
,, Boards: Swag	11	0	0 ,,	12	0	0
Red Deals: rchangel 1st quality	21	0	0 ,,	24	0	0
,, ,, ,, 2nd ,,	16	0	0 ,,	19	0	0
,, ,, ,, 3rd ,,	12	0	0 ,,	14	0	0
,, ,, St. Petersburg—						
,, ,, ,, 1st quality	16	10	0 ,,	18	0	0
,, ,, ,, 2nd ,,	14	10	0 ,,	15	10	0
,, ,, Wyburg & Uleaborg	12	10	0 ,,	15	0	0
,, Gefle, Gothenburg, and Stockholm	12	10	0 ,,	17	0	0
White Deals: Crown	11	0	0 ,,	15	10	0
,, ,, Seconds	11	10	0 ,,	13	0	0
Flooring: White and Planed—						
1st and 2nd quality mixed	10	15	0 ,,	11	15	0
1st, 2nd, & 3rd quality mixed	10	5	0 ,,	11	0	0
Red Planed, 1st quality	14	10	0 ,,	17	0	0
Pitch Pine: Prime Deals and Boards	18	0	0 ,,	23	0	0
Lignum Vitæ	Per ton	7	0	0 ,,	14	0 0

	Per cubic foot.					
Yellow Pine Logs (waney board)	0	5	0 ,,	0	5	6
Pitch Pine Logs	0	2	0 ,,	0	2	6
Birch: Quebec Logs	0	2	3 ,,	0	2	9
Oak: Austrian Wainscot	0	7	0 ,,	0	8	0
Mahogany: Gaboon	0	2	0 ,,	0	2	3

(Continued on next page.)

THE BEST BOOK ON MODERN BUILDING.

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ADDRESS .....

.....

FURNITURE AND HARDWOODS.

Teak: Burmese, per load, 50ft.	£20	0	0	to	£25	0	0
Teak: Java, per load, 50ft.	16	0	0	,,	21	0	0
	Per cubic foot.						
Oak Planks: U.S.A., imported	0	1	9	to	0	2	6
,, Boards ,, ,, Prm.	0	3	0	,,	0	3	6
,, ,, ,, Mdm.	0	2	6	,,	0	2	9
Sequoia (Californian Redwood)	0	2	1	,,	0	3	6
Birch: Quebec logs	0	2	3	,,	0	2	9
,, ,, sawn planks	0	1	3	,,	0	2	0
Oak: Austrian Wainscot	0	7	0	,,	0	8	0
Walnut: Prime boards and planks	0	6	0	,,	0	6	6
Walnut: Mdm. ,, ,,	0	3	6	,,	0	4	6
Greenheart: Hewn logs	0	3	3	,,	0	4	0
Cedar Cigar box	0	4	9	,,	0	5	6
Satin Walnut: Imp. sawn boards, prime	0	3	4	,,	0	3	9
Orhan: Imp. sawn boards, prime	0	2	0	,,	0	3	3
Mahogany: St. Domingo, Cuba, and Honduras	0	6	0	,,	0	9	0
,, African, Assinee, &c.	0	5	0	,,	0	6	6
,, Lagos and Benin	0	4	6	,,	0	6	0
,, Sekondi and Cape Lopez	0	3	0	,,	0	4	0
,, Gaboon	0	2	0	,,	0	2	3
Satinwood: West Indian	0	10	0	,,	0	14	0
Rosewood, Per ton	8	0	0	,,	12	0	0
Lignum Vitæ ,,	7	0	0	,,	14	0	0

STONE.*

Red Mansfield, in blocks, per foot cube	£0	3	1
Darley Dale, ditto ,,	0	2	3
Red Corsehill, ditto ,,	0	2	2
Closeburn Red Freestone, ditto ,,	0	2	0
Ancaster, ditto ,,	0	1	10
Greenshill, ditto ,,	0	1	1
Chilmark, ditto (in truck at Nine Elms) ,,	0	1	1½
Hard York, ditto ,,	0	2	0
Ditto ditto 6in. sawn both sides, landings, random sizes, per foot sup.	0	2	8
Ditto ditto 3in. slab sawn two sides, random sizes ,,		1	3

* All F.O.R. London.

Bath Stone, delivered on road waggons, Paddington Depot per foot cube	0	1	7½
Ditto, ditto, Nine Elms Depot ,,	0	1	9½
Beer Stone, delivered on rail at Seaton Station ,,	0	1	0
Ditto, delivered at Nine Elms Station ,,	0	1	6

Portland Stone, in random blocks of 20ft. average.—

	Brown Whit Bed.	Base Bed
Delivered on road waggons at Paddington Depot, Nine Elms Depot, or Pimlico Wharf	Per foot cube.	
	£0 2 5	£0 3 1

SLATES.

	in. in.	£	s.	d.	per 1,000 of
Blue Portmadoc	20×10	12	12	6	1,200 at r.stn
,, ,,	16× 8	6	13	6	,, ,,
Blue Bangor	20×10	13	3	6	,, ,,
,, ,,	20×12	13	17	6	,, ,,
First quality	20×10	13	0	0	,, ,,
,, ,,	20×12	13	15	0	,, ,,
,, ,,	16× 8	7	5	0	,, ,,
Eureka unfading green	20×10	15	17	6	,, ,,
,, ,,	20×12	18	7	6	,, ,,
,, ,,	18×10	13	5	0	,, ,,
,, ,,	16× 8	10	5	0	,, ,,
Permanent green	20×10	11	12	6	,, ,,
,, ,,	18×10	9	13	6	,, ,,
,, ,,	16× 8	6	13	6	,, ,,

BRICKS.

(All prices net.)

First Hard Stocks	£1	15	0	per 1,000 alongside, in	
Second Hard Stocks	1	11	0	,, ,,	river.
Mild Stocks	1	9	0	,, ,,	,,
Picked Stocks for Facings	2	5	0	,,	livered at rly. stn.
Flettons	1	10	0	,, ,,	,,
Pressed Wire Cuts	1	18	0	,, ,,	,,
Red Wire Cuts	1	14	0	,, ,,	,,
Best Fareham Red	3	12	0	,,	,,
Best Red Pressed Ruabon Facing	5	0	0	,, ,,	,,
Best Blue Pressed Staffordshire	3	15	0	,, ,,	,,
Ditto Bullnose	4	0	0	,, ,,	,,
Best Stourbridge Firebricks	3	14	0	,, ,,	,,
2½in. Best Red Accrington Plastic Facing Bricks	4	10	0	,,	Net, delivered in full truck loads in London.

Accrington Best Red Plastic Facing Bricks per 1,000	£2 10 0
3½" ditto Second Best Plastic ditto	3 2 6
Ditto Ordinary Second Quality	1 11 3
Ditto Plastic Engineering Bricks	1 17 6
Sewer Arch Brick not more than 3½" in thickest part	2 0 0
3½" Chimney Bricks fit for outside work	2 6 0
3½" ditto ditto through and through	2 0 0
3½ Beaded, Ovolo and Bevel Jambs; Octagons; 2½" and 4½" radius Bullnoses; Stock patterns	3 7 6
Accrington Air Bricks, 9" × 2 course deep, each	0 0 6
Ditto ditto 9 × 1 course ,,	0 0 3

Accrington Camber Arches:—

3 course deep, 4½" soffit, per foot opening						0	1 3
4	ditto	4½"	ditto	ditto	ditto	0	1 8
5	ditto	4½	ditto	ditto	ditto	0	3 1
6	ditto	4½	ditto	ditto	ditto	0	3 6
3	ditto	9"	ditto	ditto	ditto	0	2 1
4	ditto	9"	ditto	ditto	ditto	0	2 11
5	ditto	9"	ditto	ditto	ditto	0	3 9
6	ditto	9"	ditto	ditto	ditto	0	4 6

Net free on rail or free on boat at works.

GLAZED BRICKS.

HARD GLAZES, (PER 1,000.)

White, Ivory, and Salt Glazed. Best.	Seconds.	Buff, Cream, & Bronze.	Other Colours.	Second Colours.
Stretchers—				
£12 7 6	£10 17 6	£13 17 6	£17 17 6	£13 7 6
Headers—				
11 17 6	10 7 6	13 7 6	17 7 6	11 17 6
Quoins, Bullnose, and 1½in. Flats—				
15 17 6	14 17 6	17 17 6	21 7 6	15 17 6
Double Stretchers—				
17 17 6	16 7 6	20 17 6	24 7 6	17 17 6
Double Headers				
14 17 6	13 7 6	17 17 6	21 7 6	14 17 6
One side and two ends, square—				
18 17 6	17 7 6	21 17 6	26 7 6	18 17 6
Two sides and one end, square—				
19 17 6	18 7 6	22 17 6	36 17 6	19 17 6
Splays and Squints—				
17 7 6	15 17 6	21 17 6	24 17 6	17 7 6
Plinth and Hollow Bricks, Stretchers and Headers—				
5d. each	4d. each	6d. each	6d. each	5d. each
Double Bullnose, Round Ends, Bullnose Stops—				
5d. each	4d. each	6d. each	6d. each	5d. each
Rounded Internal Angles—				
4d. each	3d. each	5d. each	5d. each	4d. each

MOULDED BRICKS.

Stretchers and Headers—				
8d. each	8d. each	8d. each	8d. each	8d. each
Internal and External Angles—				
1/2 each	1/2 each	1/2 each	1/2 each	1/2 each
Cill Bullnose, Stretchers and Headers—				
5d. each	4d. each	6d. each	6d. each	5d. each
Majolica or Soft Glazed Stretchers and Headers				Per 1,000 £22 17 6
,, ,, Quoins and Bullnose				27 17 6
Compass bricks, circular and arch bricks of single radius £6 per 1,000 over above list for their respective kinds and colours				Not exceeding 9in.
Camber arch bricks, any kind or colour, 1s. 2d. each				by 4½in by 2½in.
Stretchers cut for Closers and Nicked Headers, £1 per 1,000 extra				Double

* These prices are carriage paid in full truck loads to London Stations.

	s.	d.	
Thames Sand	7	6	per yard, delivered
Pit Sand	7	0	,, ,,
Thames Ballast	6	0	,, ,,
			s. d. Per ton.
Best Portland Cement	36	0	to 41 0 delivered
Ground Blue Lias Lime	21	0	per ton delivered.

Exclusive of charge for sacks.

	s.	d.	s. d. Per yard.
Grey Stone Lime	13	6	to 14 0 delivered
Stourbridge Fireclay in sacks	27s.	0d.	per ton at railway station.

TILES.

	s.	d.	Dlvrd. at
Plain red roofing tiles	42	0	per 1000 ry. stn.
Hip and Valley tiles	3	7	per doz. ,, ,,
Broseley tiles	50	0	per 1000 ,, ,,
Ornamental tiles	52	6	,, ,, ,,
Hip and Valley tiles	4	0	per doz. ,, ,,
Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000 ,, ,,
Ornamental do.	60	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	0	,, ,, ,,
Selected "Perfecta" roofing tiles:—Plain tiles (Peake's)	46	0	per 1000 ,, ,,
Ornamental do.	48	6	,, ,, ,,
Hip tiles	3	10½	per doz. ,, ,,
Valley tiles	3	4½	,, ,, ,,
"Rosemary" brand plain tiles	18	0	per 1000 ,, ,,
Ornamental tiles	50	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	8	,, ,, ,,
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 ,, ,,
Hand-made sand-faced	45	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	6	,, ,, ,,
Hartshill" brand plain tiles, sand faced	50	0	per 1000 ,, ,,
Pressed	47	6	,, ,, ,,
Ornamental do.	50	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
alley tiles	3	6	,, ,,

OILS.

Rapeseed, English pale, per tun	£28	15	0	to £29	5 0
Do., brown ,, ,,	26	15	0	,, 27	5 0
Cottonseed, refined ,, ,,	29	0	0	,, 30	0 0
Olive, Spanish ,, ,,	39	10	0	,, 40	0 0
Seal, pale ,, ,,	21	0	0	,, 21	10 0
Cocoanut, Cochin ,, ,,	46	0	0	,, 46	10 0
Do., Ceylon ,, ,,	42	10	0	,, 43	0 0
Do., Mauritius ,, ,,	42	10	0	,, 43	0 0
Palm, Lagos ,, ,,	32	5	0	,, 33	5 0
Do. Nut Kernel ,, ,,	35	0	0	,, 35	10 0
Oleine ,, ,,	17	5	0	,, 19	5 0
Sperm ,, ,,	30	0	0	,, 31	0 0
Lubricating Oils per gal.	0	7	0	,, 0	8 0
Petroleum refined ,, ,,	0	0	6½	,, 0	0 6½
Tar, Stockholm per barrel	1	5	0	,, 1	10 0
Do., Archangel ,, ,,	0	19	6	,, 1	0 0
Linseed Oil per gal.	0	2	3¼	,,	—
Baltic Oil ,, ,,	0	2	6	,,	—
Turpentine ,, ,,	0	2	6½	,,	—
Putty (Genuine Lin seed Oil) per cwt.	0	9	0	,,	—
Pure Linseed Oil "Stority" Brand ,,	0	10	0	,,	—

GLASS (IN CRATES).

English Sheet Glass:	15oz.	21oz.	26oz.	32oz.
Fourths	2d.	3d.	3½d.	4½d.
Thirds	2½d.	3½d.	4½d.	5½d.
Fluted Sheet	2½d.	3½d.	6½d.	7d.
Hartley's English Rolled Plate	⅛in.	3/16in.	¼in.	
	2½d.	2½d.	3d.	
Figured Rolled and Reponssine		White.	Tinted.	
		3½d.	5d.	

VARNISHES, &c.

	Per gallon.
Fine Pale Oak Varnish	£0 8 0
Pale Copal Oak	0 10 0
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard drying Oak, for seats of churches	0 14 0
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flatting Varnish	0 18 9
White Copal Enamel	1 4 0
Extra Pale Paper	0 12 9
Best Japan Gold Size	0 10 9
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 0

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TENDERS.

*** Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

Aberdan. For cemetery extension, for the Merthyr Corporation:—

Lloyd, R., Merthyr	£1,097 7 0
Bond, G., Cefn	878 11 3
Murray, J., Dowlais	869 3 0
Jones, D., Dowlais	495 0 0
Davies, E. P., Dowlais	482 17 6
Jones, D., Brecon	480 0 0
Rees, R. E., Aberdan	469 0 0
Morris, G., Cardiff	450 0 0
Protheroe, H., Merthyr	450 10 3
James, J. T., Merthyr	432 11 0
Sutherland, J., Aberdynon	370 7 0
Evans, T., Troedyrhiw (accepted)	361 15 0

Broomhill and Lydd. For carrying out sea-wall works, for the sewer commissioners. Messrs. Weldon and Stokes, 11, Bank-street, Ashford, Kent, joint clerks:—

Price A. E. J., Stroud, Rochester	£5,308 17 6
Braun, G., Broomhill, Sussex	2,700 0 0
Gillett, H. G., and Pope, H., Lydd, Kent (accepted)	2,490 0 0
Cutler A. F., 23, Lloyd-sq., W.C.	2,489 0 0

Bushey.—For the construction of 90 lineal yards of 9in. diameter cast-iron pipe sewer, for the Bushey Urban District Council. Mr. E. E. Ryder, Rudolph-road, Bushey, surveyor:—

Stockman, Finchley	£322 19 6
Surveyor, Urban District Council	224 0 0
Trentham, Birmingham	209 0 0
Bliss, Bushey	193 17 0
Halsey and Sons, Edgware	174 5 6
Bailey and Sons, Bushey Heath*	157 19 3

* Accepted.

Cheadle.—For laying a 9in. sewer in Lid-lane, Cheadle, for the rural district council:—

Alcock, W. (accepted)	£105 0 0

Corwen.—For carrying out work at the homes, for the guardians:—

Hugh, W. O., Tygwyn	£485 0 0
Owen, H., Corwen (accepted)	367 0 0

Croydon.—For alterations and additions to the boiler-house at the workhouse, for the guardians:—

Poulton and Timms, Reading	£1,773 14 3
Sharp, W. J., Whitehorse-lane	1,464 0 0
Gatty, W., Bromley	1,378 0 0
Bacon, H., and Son, Thornton Heath and Coulsdon	1,297 0 0
Warrington, T., Hyde	1,251 0 0
Barker, D. W., & Son, Croydon	1,198 0 0
Smith, W., & Son, London-road	1,191 0 0
Everitt, G. E., & Sons, Windmill-road	1,170 0 0
Honour, F. W., Warlingham*	1,113 0 0

* Accepted.

DOVERCOURT.—For erecting stables and dairy, Dovercourt, for the Harwich, Dovercourt, and Parkeston Co-operative Society, Ltd. Mr. F. G. Vincent Brown, A.I.S.E., Orwell-terrace, Dovercourt, architect :—

Sage, J. R., and Son, Wix	£1,768	0	0
Bennett, F., Ipswich	1,755	0	0
Downes and Sage	1,725	0	0
Fisher and Woods	1,624	0	0
Newton, E. E., Harwich	1,565	0	0
Saunders, E. (accepted)	1,535	0	0

(Rest of Dovercourt.)

EDINBURGH.—For the erection of a golf clubhouse and tea rooms, Cockenzie, for the Port Seton Tea House Co., Ltd. From plans by Mr. A. Murray Hardie, L.R.I.B.A., 20, George-street, Edinburgh. Accepted tenders :—

Plumber.—

Munro, A., Prestonpans	£1 766	0	0

Masons, joiners, plasterers, and slaters —

Wilson, J., and Son, Tranent	1,504	0	0

EXETER.—For alterations at the Paris-street school, for the Exeter Education Committee. Mr. J. Jerman, F.R.I.B.A., 1, Bedford-circus, architect :—

Stephens, J.	£275	0	0
Eveleigh, A. E.	239	18	6
Soper and Ayers	239	10	0
Baker, W.	216	10	0
Castle, J. W.	198	0	0
Brealy, W. (accepted)	187	0	0

All of Exeter.

EYE. For work at new infirmary, Eye, Suffolk. Mr. Herbert J. Green, 31, Castle Meadow, Norwich, architect.—

Reade, W. C., Aldeburgh	£18,498	10	9
Bennett, F., Ipswich	18,700	8	7
Grimwood, G., and Sons, Sudbury	18,654	15	1
Catchpole, E., and Sons, Ipswich	17,987	0	0
Scarles Bros., Norwich	17,414	0	0
Shanks, R., Charteris	17,398	0	0
Grimwood, G., and Son, Ltd., Ipswich	17,249	0	0
Clarke, E., Thetford	17,085	0	5
Youngs, J., and Son, Norwich	16,996	0	0
Smith, E. J., Bunwell	16,523	0	0
Gibbons, A. J., Crowfield*	15,842	16	8

* Accepted conditionally.

FECKENHAM.—For repairs to White House Farm, for the county small holdings, &c., committee :—

Barley, Inkberrow (accepted)	£382	16	0

FOLESHILL.—For culverting the brooks in Holbrooke-lane and Bedlam-lane, for the rural district council :—

Green (accepted)	£697	0	7

GLASTONBURY.—For the supply of pumping machinery at the sewage disposal works, for the town council. Messrs. Cotterill and Carr, engineers.—

Hunt, A. M., Bristol (accepted)	£700	0	0

GRANTHAM.—For erection of four workmen's cottages, for the rural district council. Mr. H. C. Rudkin, A.R.S.I., 4, St. Peter's-hill, Grantham, architect.—

Bland, T.	£755	0	0
Cragg, W.	736	0	0
Walker Bros.	710	0	0
Read, F.	679	0	0
Parks and Son	600	0	0
Clark, W. G. (accepted)	594	0	0

GREENWICH, S.E.—For forming and paving East-brook-road as a new street, for the borough council :—

Griffiths, W., and Co., Ltd.	£779	0	0
Fry Bros.	756	0	0
Woodham, H., and Sons	748	0	0
Mowlem, J., and Co., Ltd.*	739	0	0

* Recommended for acceptance.

GREENWICH, S.E.—For supply of bookcases, &c., to the central library, for the borough council :—

Mills, E.	£197	15	0
Shorter, J., and Co.	197	11	6
Gorham, F. J.	152	15	11
Mills, W., and Sons, Ltd.	137	4	0
Bruin, D., and Sons	130	13	0
Libraco, Ltd.	113	0	0
Hammer, G., and Co., Ltd.*	101	10	0

* Recommended for acceptance.

HACKNEY, N.E.—For high-tension ring main conduits, for the borough council :—

Dick, Kerr, and Co., Ltd.	£22 845	0	0
Griffiths, W., Ltd.	20,774	0	0
Foot and Milne, Ltd.*	16 019	0	0

* Recommended for acceptance.

HACKNEY, N.E.—For supply of hand-operated travelling cranes, for the borough council :—

Smith, J., Keighley	£369	0	0
Chatteris Engineering Works Co., Ltd.	622	13	0
Holt and Willets	445	0	0
Morris, H., Ltd., (as specified)	437	5	0
Ditto (standard design)*	389	5	0

* Recommended for acceptance.

KINGSWAY, W.C.—For the heating, ventilation, and hot water supply for Imperial Buildings, a block of offices and business premises, fronting on Kingsway, now in course of erection by Messrs. King and Arnell, Ltd. Mr. A. H. Barker, consulting engineer —

Wembley Heating Co., Ltd. (accepted).

LEITH.—For the construction of the Lothian railway, for the North British Railway Co. :—

Symington, Haigh, and Sons, Ltd., Glasgow (accepted)	£165,000	0	0

MIDDLESBROUGH.—For providing a plant of 72 Collin regenerative coke ovens, with by-product plant on the direct process, also benzol and tar distillation plants of a capacity of 3,000 tons each week, for Messrs. Bell Brothers, Ltd. :—

Coal Distillation Co., Ltd., Middlesbrough (accepted).

REIGATE.—For private street works to be executed in Ringley-avenue, Horley, for the Reigate Rural District Council. Mr. A. J. Heal, 48, High-street, Reigate, surveyor :—

Whitmore, W., Victoria-road, Horley (accepted)	£329	0	0

RIVINGTON PIKE, HARWICH.—For rebuilding for Sir W. H. Lever, Bart, a bungalow on Rivington Pike Slope, recently destroyed by incendiary suffragettes —

Bentley, of Horwich (accepted).

TILSTONE.—For the erection of an organ in St. Jude's Church —

Conachers, Huddersfield (accepted)	£265	0	0

WALSALL.—For alterations and additions to the tramway offices, The Bridge, for the town council :—

Letts and Airston, Walsall (Accepted.)	£1,585	0	0

WALTHAMSTOW.—For heating Folkestone-road Hall, Walthamstow.—

Davies, F., Murchinson-road, Leyton, Essex (accepted)	£112	0	0

WELLINGBOROUGH.—For alterations and additions to the Doddridge Memorial Church. Mr. F. H. Allen, A.R.I.B.A., architect.—

Chapel.

Green, E.	£1,835	0	0
Archer, E., and Son	1,585	0	0
Chown, A. J.	1,575	0	0
Higgs	1,498	0	0
Powell, J. T.	1,474	0	0
Hawtin, A. P. (accepted)	1,449	0	0

Schools.

Green, E.	£4,085	0	0
Archer, E., and Son	3,999	0	0
Chown, A. J.	3,902	0	0
Higgs	3,789	0	0
Powell, J. T.	3,758	0	0
Hawtin, A. P. (accepted)	3,669	0	0

WEYMOUTH.—For the construction of cast-iron and stoneware sewers and manholes at rear of Argyle-road, for the owners Mr. G. A. Andrews, Weymouth, engineer and surveyor :—

Knell and Son	£166	10	0
Stone and King	147	0	0
Parsons, Ltd.	132	16	0
Jesty and Baker	92	10	0
Conway, Ltd. (accepted)	89	19	6

All of Weymouth.

TO CORRESPONDENTS.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

It is particularly requested that all drawings and all communications respecting illustrations or literary matter, books for review, etc., should be addressed to the EDITOR of the BUILDING NEWS, Effingham House, 1, Arundel-street, Strand, W.C., and not to members of the staff by name. Delay is not infrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

*** Drawings of selected competition designs, important public and private building, details of old and new work, and good sketches are always welcome, and for such no charge is made for insertion. Of more commonplace object—small churches, chapels, houses, etc.—we have usually far more on hand than we can insert, but are glad to do so when space permits on mutually advantageous terms, which may be ascertained on application.

When favouring us with drawings or photographs, architects are asked kindly to state how long the building has been erected. It does neither them nor us much good to illustrate buildings which have been some time executed, except under special circumstances.

NOTICE.

Bound copies of Vol. CIV. are now ready, and should be ordered early (price 12s. each, by post 12s. 9d.), as only a limited number are done up. A few bound volumes of Vols. XXXIX., XLI., XLVI., XLIX., LII., LXI., LXII., LXIV., LXV., LXVI., LXVII., LXVIII., LXIX., LXXI., LXXII., LXXIII., LXXIV., LXXV., LXXVI., LXXVII., LXXIX., LXXX., LXXXI., LXXXII., LXXXIII., LXXXIV., LXXXV., LXXXVI., LXXXVII., LXXXVIII., LXXXIX., XC., XCI., XCII., XCIII., XCIV., XCV., XCVI., XCVII., XCVIII., XCIX., C., CI., CII., CIII., and CIV., may still be obtained at the same price; all the other bound volumes are out of print. Most of the back numbers of former volumes are, however, to be had singly. Subscribers requiring any back numbers to complete volume just ended should order at once, as many of them soon run out of print.

RECEIVED.—W. M. W. L. Ltd.—C. I. W.—Cox and Co.—D. C. A.—J. B., Ltd.—J. B. and Son.—H. A. C.—P. O. O.—T. T. G. and Son.—Z. P. M. and Co.—J. W. and Son.—L. H. S. and Bro., Ltd.—O. and Co.—F. F. Co., Ltd.—B. A. R. Co.—W. B. T. L. S. and Co.—J. B. J. and Co.—H. H. and Co., Ltd.

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CANADIAN SUBS.—Best thanks. We hope so.

SCARLET.—A spat to catch a mackerel, we expect. You might waste a penny stamp in reply, and find out the result.

DODO.—Thanks, no. 2. Very likely! We quite expect to see some day, among that body's examination questions, a demand for suggestions, plans, specification, and model tender form for Noah's Ark!

ROTHERHAM.—We should not go so far afield. Put yourself in the hands of a good builder in Sheffield, such as F. Naylor, Ltd., Abbeydale-road.

L. B. (Banbury).—An excellent system of timber drying, was described by us not long ago. Send for the free catalogue of the Sturtevant Engineering Co., Ltd., 147, Queen Victoria-street, E.C. Ask for B. 1115.

JONAS.—You cannot do better than Messrs. Coulter and Co., of Batley, Yorks, for the Stone Scabbling Machines.

LIST OF COMPETITIONS OPEN.

Sept. 30	Fire Station, Blackburn (F. G. Briggs, F.R.I.B.A., Blackburn, Assessor)	£100, £50, £25	The Town Clerk, Town Hall, Blackburn.
,, 30	Edward VII. Memorial Sanatorium, North Wales (£20,000 limit)	£100, £50, £30	The Secretary, Municipal Offices, Westgate-st., Cardiff.
Oct. 4	Laying-out 50 acres Estate and Working Class Dwellings, Bradford (H. T. Hare, F.R.I.B.A., Assessor)		F. Stevens, Town Clerk, Town Hall, Bradford.
,, 6	Front for Cigar Shop, Piccadilly. (Henry Tauner, F.R.I.B.A., 12, Regent-street, W., Assessor)	£50	Martins, Ltd., 25, Cheapside, E.C.
,, 31	Houses and Planning, York	£100, £50, £25	F. W. Spurr, City Engineer, Guildhall, York.
Nov. 1	Royal Palace, Sofia, Bulgaria		Section d'Architecture au Ministere des Travaux Publics, Sofia.
,, 1	Law Courts, Sofia, Bulgaria		Section d'Architecture au Ministere des Travaux Publics, Sofia.
,, 18	Destructor, Schaerbeek-lez-Bruxelles		Service de l'Ingenieur, 39, Rue de la Ruche, Brussels.
,, 29	Band Pavilion, West Cliff, Folkestone (limit of cost £20,000). (Edwin T. Hall, F.R.I.B.A., 34, Bedford-square, W.C., Assessor)		A. F. Kridson, Town Clerk, Folkestone.
Dec. 29	New Offices for Board of Trade, &c., Whitehall Gardens, S.W. [R. Blomfield, M.A. (Oxon), A.R.A., P.R.I.B.A. J. Belcher, R.A., and Sir Aston Webb, C.V.O., C.B., R.A., Assessors] Sketch Designs, ten will be Selected,		
1914. Jan. 2	with £300 Honorarium each. Manchester Royal Exchange, Additional New Buildings and Alterations. Open to all architects in U.K. Not more than 12 architects of repute have been specially invited; each of whom will receive one hundred guineas. The three selected architects will receive one hundred guineas each. Author of design placed first will be appointed. (J. S. Gibson, F.R.I.B.A., Assessor)		The Secretary, H.M. Office of Works, Storey's Gate, S.W.
,, 2	Departmental and Courts Buildings, Ottawa (T. E. Collcutt, J. H. G. Russell, and J. O. Marchand, Assessors). Double Competition, five unsuccessful competitors in second to receive 3,000dols. each		Rich. J. Allen, Master, Royal Exchange, Manchester.
Feb. 15	Savings Bank, Verona (Five Assessors)	£1,200, £600	R. C. Desrochers, Department of Public Works, Ottawa, Ont. The Savings Bank, 1, Via Garibaldi, Verona.
No date	Twelve Workmen's Cottages, Skelmanthorpe		W. Fisher, Clerk, Skelmanthorpe.

LIST OF TENDERS OPEN.

BUILDINGS.

Sept. 27	Tuberculosis Patients' Pavilion, Hill Top, Bromsgrove	Hospital Committee	A. Vernon Rowe, Archt., 39, Foregate-street, Worcester.
,, 27	Assembly Hall and Class-rooms, Pantyllynon	Hendre C.M. Church	R. S. Griffiths, M.S.A., Tonypandy.
,, 27	West-End Club, Additions to, Amble		The Secretary, West-End Club, Amble.
,, 27	Two Blocks of Houses, Queenstown		A. H. Allen and Son, 1, Westbourne-place, Queenstown.
,, 27	House, Midgley		G. W. Moxon, Archt., Bretton West, near Wakefield.
,, 27	Vicarage House, Additions to, St. George-the-Martyr, Deal	Wardens	The Wardens, St. George-the-Martyr, Deal.
,, 27	No. 1, Penlu-terrace, Additions to, Tuckingmill	Tuberculosis Committee	C. L. Cowlard, Clerk, Council Offices, Bodmin.
,, 27	Lifeboat House, Fraserburgh	Harbour Commissioners	A. Tarras, Clerk, Town House, Fraserburgh.
,, 27	Grand Stand, Victoria Field Football Ground, Street	Football Club	F. Simpson, Sec., High-street, Street, Somerset.
,, 29	Royal Aircraft Factory, Additions to, South Farnborough	Secretary of State for War	The Director of Barrack Construction, 80, Pall Mall, S.W.
,, 29	Broomhill Schools, Additions to, Mansfield	Education Committee	T. P. Collinge, A.M.I.C.E., Boro' Eng., Exchange-row, Mansfield.
,, 29	Swimming Pond, Storie-street, Paisley	Town Council	F. Martin, Town Clerk, Municipal Buildings, Paisley.
,, 29	Concrete Floors at Generating Station, Dundee	Corporation	H. Richardson, M.I.E.E., Dundee.
,, 29	Workhouse, Repairs at, Wicklewood	Forehoe Guardians	W. Partridge Smith, Clerk, Wicklewood, Norfolk.
,, 29	Maenllwyd House, Renovation of, Newport	Mrs. James	George, Son, and Davies, Solicitors, Cardigan.
,, 30	Machinery and Storage Depot, Well-street, Paignton	Urban District Council	The Surveyor, Town Hall, Paignton.
,, 30	Court House, Limavady		The County Surveyor's Office, Londonderry.
,, 30	Branch Library, Extension of, West Ealing	Town Council	W. R. Hicks, A.M.I.C.E., Boro' Eng., Town Hall, Ealing, W.
,, 30	Girls' Homes and Mortuary, Haslingden	Guardians	H. Ross, A.R.I.B.A., 15, Cannon-street, Accrington.
,, 30	Four Workmen's Dwellings, Wantage	Rural District Council	J. W. Harris, Eng., East Challow, Wantage.
,, 30	Schools, Additions to, Kimpton, Hants	Rev. J. W. Brady Moore	B. D. Cancellor, Archt., 12, Jewry-street, Winchester.
,, 30	Houses (21), Dockfield, Shipley	Urban District Council	W. H. Dawson, Sur., Manor House, Shipley.
,, 30	Two Pigsties, Highfield, Llantwit Major	Glamorgan County Council	The Glamorgan County Hall, Cardiff.
,, 30	Manual Instruction Room, Troedyrhiw		The Borough Architect, Town Hall, Merthyr Tydfil.
,, 30	Reroofing Barn, Gargreave Farm, Kirby-in-Furness		J. Barton, Gargreave, Kirky-in-Furness.
,, 30	Residence, Luscombe Estate, Dawlish		S. Dobell, Archt., 79, Queen-street, Exeter.
,, 30	Nurses Home at Workhouse, Additions, Great Yarmouth	Guardians	Olley and Haward, Archts., Queen-street, Great Yarmouth.
Oct. 1	Attendants' Cottages, Redmires and Low Bradfield	Sheffield Water Committee	The City Architect, Town Hall, Sheffield.
,, 1	Old Town Hall, Alterations to, William-street, Woolwich	Borough Council	J. R. Dixon, M.I.C.E., Boro' Eng., Town Hall, Woolwich.
,, 1	Drill Hall, Lampeter		Ll. Bankes Price, Archt, Doldrement, Lampeter.
,, 1	Hot-Water Pipes, Victoria Park Museum, Keighley	Corporation	The Borough Engineer, Keighley.
,, 1	House, Main-street, Kesh		J. Elliott, Merchant, Kesh.
,, 1	Ebenezer Hall, Additions to, Trecynon, Aberdare	Ebenezer Con. Church Trustees	J. Ll. Smith, L.R.I.B.A., Aberdare.
,, 1	School, Teacher's House at, Mereside, Ramsey	Hunts Education Committee	The Surveyor, Education Com., Market-place, Huntingdon.
,, 1	Red Cottage, Additions to, Rhosneigr, Anglesey	J. E. Webb	J. Owen and Thomas, Archts., Exchange Chambers, Holyhead.
,, 1	Stabling Accommodation, Lawley-street, Birmingham	Midland Railway Co.	The Engineer's Office, Derby Station, Birmingham.
,, 2	Workhouse Laundry, Alterations to, Barnstaple	Guardians	W. C. Oliver and Sons, Archt., Barnstaple.
,, 2	Houses (16), Glebe Estate, Bedwas	Cinema Building Club	W. E. Lloyd, 2, St. Barrog's-terrace, Bedwas.
,, 2	Working-Class Dwellings, Belfast	Public Health Committee	Chillingworth and Levie, Archts., 11, South Mall, Cork.
,, 2	Premises, Extensions to, Ryhope, Durham	Industrial and Provident Soc., Ltd.	W. and T. R. Milburn, FF.R.I.B.A., 19, Fawcett-st., Sunderland.
,, 2	Fire Station, Enlarging, Hampton	Urban District Council	E. Cozens, Clerk, Public Offices, Hampton, Middlesex.
,, 2	Council School (230 places), Sutton Valence	Kent Education Committee	W. H. Robinson, M.S.A., Sessions House, Maidstone, Kent.
,, 2	Bowling Green, Extending Pavilion at, Annan	Bowling Club	P. M'Giverin, Hon. Sec., Bowling Club, Annan.
,, 2	Reading Room, Hampton Hill	Urban District Council	E. Cozens, Clerk, Public Offices, Hampton, Middlesex.
,, 4	Drill Hall, Additions to, Guildford	Surrey Terr. Force Assoc.	Jarvis & Richards, Archts., 10, Queen Anne's Gate, Westminster.
,, 4	Girls' Secondary School (210 places), Leigh	Town Council	H. Littler, County Archt., 16, Ribblesdale-place, Preston.
,, 4	Besore Farm, Additions to, Kenwyn, Truro	Cornwall County Council	J. Davis, County Land Agent, County Hall, Truro.
,, 6	Semi-Detached Villas (18), Cwmaman	Penybryn Building Club	J. Llewellin Smith, Archt., Aberdare.
,, 6	Cottage Homes, Eastry, Sandwich	Guardians	Jennings and Gray, Archts., 4, St. Margaret's-st., Canterbury.
,, 6	Garage, Workshop, and Showrooms, Halifax	Motor Exchange	T. L. Patchett, Archt., George-square, Halifax.
,, 6	House, Cwmaman	Mrs. M. Wilson	J. Llewellin Smith, Archt., Aberdare.
,, 6	Theatre, &c., 77 and 78, George-street, Limerick	M. W. Shanly	J. O'Malley, B.A., B.E., Archt., 10, Glentworth-street, Limerick.
,, 7	Parc Gwyllt Asylum, New Block at, Bridgend	Visiting Committee	R. S. Griffiths, M.S.A., Archt., Tonypandy.
,, 7	Houses (52), New Town, Houghton-le-Spring	Urban District Council	J. W. Holbrook, Sur., Newbottle-street, Houghton-le-Spring.

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THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House, Strand, W.C.

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OUR ILLUSTRATIONS.

Clarkson Hospital for Women, New Basford. View and plans. Messrs. Ivett & Evans, F.R.I.B.A. and A. W. Hall, A.R.I.B.A., Architects.

No. 60, St. James's Street, S.W. Mr. Leonard Martin, F.R.I.B.A., Architect.

No. 9, St. James's Street, S.W. Messrs. Faulkner and Gathorne, Architects.

National Gold Medal Prize Sheet of Drawings from the Schools. By Mr. Arthur Mace.

Charing Cross District Railway Station, Victoria Embankment, W.C. Elevations, sections, and plans. Mr. H. W. Ford, Architect.

National Bronze Medal Drawings for Book Illustration. The Ivy House, Lakenham, and the Star Inn, Alfriston, Sussex.

DICTIONARIES, COPINGS, AND QUOINS.

A pressing want of the present time is a standard work on building construction, in which that subject would be exhaustively treated. There is no lack of primers written for technical school pupils, and there are others, mostly pot-boilers; but a monumental work on the lines of Rondelet, Kraft, or Emy has yet to come.

It seems strange that a hundred years ago a book on building should have been published in three volumes quarto, with one volume, atlas folio, consisting of engraved plates, while our best effort is exhausted in three volumes demy octavo and no plates. One would have thought that process printing, placing, as it does, such a marvellously cheap way of reproducing the architect's own drawings, would have led to the publication of works of greater value and interest than any produced before; but this is not the case. Indeed, none of our modern books on building are in point of illustration equal to Peter Nicholson's Dictionary of 1813. But he was a Classic man, and no trace of any Mediæval work can be found in it; in fact, Gothic architecture was not discovered at the time. Nicholson was a voluminous writer. He explained much that he was well acquainted with, and he seldom attempted to write about what he only knew at secondhand, unlike many of our modern authors, who are most discursive on those subjects they know least about. The only would-be mediæval work alluded to by Nicholson is the Gothic groin rib, and he makes the very natural mistake of describing it as an elliptical curve, whereas it is well known that all such ribs were arcs of circles, some with the centres above, and others below, the springing. No curve generated by any section of a cone forms part of a groin rib, except, of course, one parallel to the base, when it is at right angles to the axis. We have tried many such ribs by means of ordinates projected on a base, and in every case the curve, when plotted, was found to be circular. The earlier Building Dictionary, by Richard Neve, in one volume, was intended to be a work "which a gentleman surveying his workmen, or walking round his grounds, might commodiously carry about with him, and refer to as occasion required." That a country gentleman, taking his walks abroad, should carry about a dictionary of building work, to while away the time, argues much for a state of society in primitive innocence; for our part, we should, under similar circumstances, prefer a handy volume of Herrick or Byron and if we only had the choice of Neve or Browning, we would almost take the latter. This early one-volume dictionary was soon followed by another in two volumes, "faithfully digested from the most approved writers," much to the disgust of Neve, who said that it would be easy for him "to follow the fashion in an age of index and dictionary learning—i.e., to plunder all the authors who have wrote on the subject." Neve denounces this as a reprehensible practice, and we are in accord with him; but what annoyed Neve most was that the pirates obtained the blessing of Nicholas Hawksmoor, John James, and James Gibbs on their work, which they were not slow to publish in their preface. A book on building, to be of any value, would need many contributors, each dealing with what he was best acquainted with, and an editor whose qualifications should be an accurate general knowledge of science and that experience of building which comes only by a life-long service to it in many places. These remarks were occasioned by a reference to some recent publications on building construction, and it was evident that in some cases the author had no practical knowledge of what he was writing about. In an article on copings we referred chiefly to those in stone; but in brick districts copings are generally built with two courses of roof tiles, on which a course of brick on edge in cement is bedded, the tiles projecting at each side to cover and protect the wall on which they are laid, the latter being always a brick thick. In Thanet, and other places where flint facings are framed in brickwork, the gables, instead of being straight from eaves to ridge, are usually worked up in curves of contrary flexure, the coping following these lines. This kind of work was well illustrated by the late John P. Seddon, in his "Ancient Examples of Domestic Architecture in the Isle of Thanet," 1872, now out of print. When the copings are of brick, it is not usual to flash them with lead, the tiling is made good to the rising wall by a filleting of mortar, or tiles are bedded in it, and this, when carefully done, makes a watertight joint; cement-mortar should be used. In the Middle Ages, when a roof met a vertical wall of some height, as for instance a nave roof against a tower wall, it was usual to cover the joint by building a weathering of stone into the tower. Porch roofs striking against nave or arch walls were protected in a similar manner. The actual joint must have been made with mortar; for, in our experience of these old

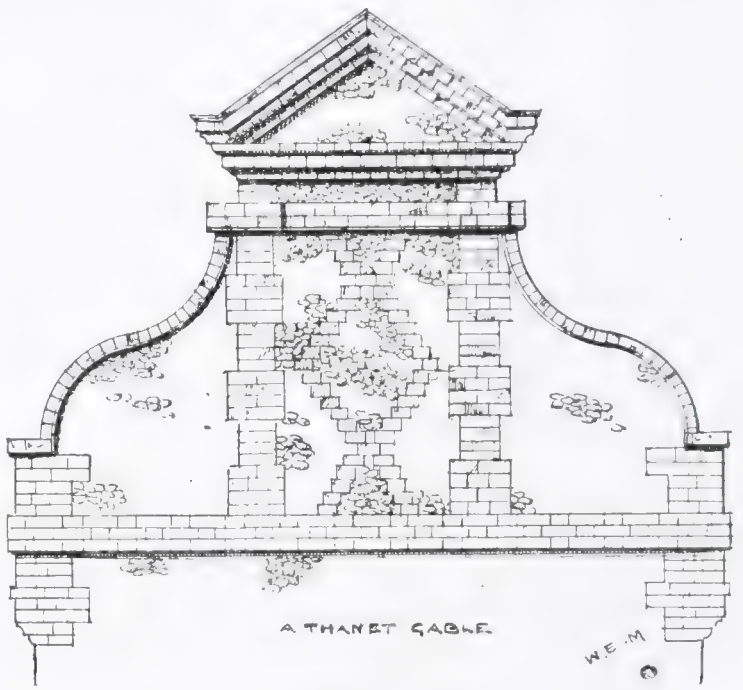


FIG. 1.

weatherings—and we have examined many we never found any trace of their having been dashed with lead. In the thirteenth century, church roofs were built to a stiff slope (about 60deg.), and the weatherings of that time still, in many cases, bear testimony to the pitch and exact position of the roofs which they protected. In the fifteenth century, when it became the fashion to raise clear stories on the arcade

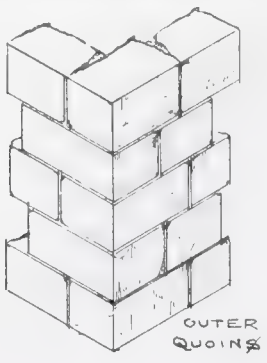


Fig. 2.

walls, to get light, roofs were made to a much lower pitch, and they frequently cover the old weathering, which may still be seen projecting from the east wall of the tower. Flattening the pitch of the roof necessitated the use of lead for its covering, as neither slates, tiles, nor shingle would keep out the rain, and it is singular that quickening the pitch, as in the spire at Godalming Church, and others, had the same effect; but, in such cases, slates and tiles were not used to avoid cutting along the hips, though shingles were frequently, for they lent themselves both to nailing and cutting, and, unfortunately, to splitting. Lead covering makes a troublesome kind of roof, for lead stretches in a hot sun and slips down. The expansion is not much; but, as it is recurring, and it never slips up, in the course of years, the lead along the eaves hangs down a foot or more. We have removed the old lead from roofs for this fault. As it is used in building, the term weathering is a vague expression, for it is applied to the slopes of a buttress, the fall of a window-sill, or a projecting course of stone to cover slating. Generally speaking, any stone, slate, or tile fixed to a slope, to throw off

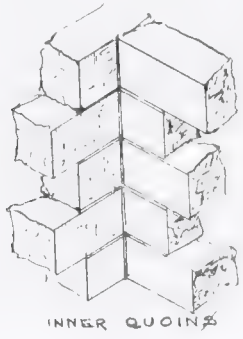


Fig. 3.

rain, is a weathering. Church buttresses are usually weathered with stones having the slopes worked in the solid; but in many Essex churches brick buttresses have 3in. stone weathering, or the work is weathered by setting the brick courses at right angles to the slope. In passing it may be well to remind the reader that though buttresses are usually attached to a building for ornament, it is advisable that they should be carried up from a secure foundation, for, if not, they are sure to come away from the wall to which they are apparently bonded, or they may bring the wall with them. We have dealt with cases where buttresses came away from an aisle wall, bringing part of the wall with them. A buttress, to be of use, should give efficient support to any wall to which it is attached, this being necessitated by some outward thrust of an arch or roof touching against the upper part of the wall. The thrust of stone or brick arches must be met by buttresses; but that of a wooden roof is most economically dealt with by tying in the walls with beams or iron rods. A wall is generally designed to carry a dead weight, and a buttress to sustain a thrust which may turn it over on its base, hence the principles affecting the design of each differ much. A skilful builder will ascertain if there is a thrust against a wall, and its amount; he will then calculate the weight of the necessary buttress, and its base area. But many buttresses attached to modern buildings do no work—they are sham—and they might be removed without injury to the building. In carrying up stone walls, the internal as well as the external angles should have quoins, efficiently bonded. Stones of nearly the same length should work as headers and stretchers alternately, the header of one face being the end of the stretcher on the other face, and the height of a header should never exceed its width on the bed.

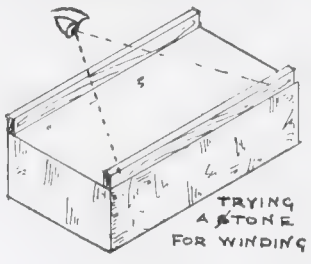


Fig. 4.

Quoins in Gothic work, where they occur in scabbled walling, are frequently doubled; a single quoin will take about 1¾cu.ft. of stone, a double quoin 2¾ft., and an inner angle 1½ft., per lineal rising foot. It is a common practice to cut the back of quoins to a wedge shape, and get two out of a rectilinear block; but, in good work, such a practice should not be allowed. The tail end of quoins, on the face of a wall, should be cut straight from top to bottom, whether square-ended or raking, and they should never be notched out to take rubble walling, a style much practised by railway engineers. Quoins should have their beds marked to a true plane; that is, out of winding. A very simple way to ascertain if this has been done is to place two straight edges along the opposite margins of the bed, then, by looking across these, the eye can see at once if the surface is truly marked. It is assumed that any intermediate place on the bed will stand the same test. Close joints are required in masonwork, upright jambs to doors and windows are also necessary; but neither will ever be obtained where the beds of the stones are not worked to true planes, and the faces, moulded or otherwise, squared from these planes. It is painful to see stone-setters trying to make badly-worked stones fit closely, and it is a waste of time. Such stones should be returned to the banker, and, if past mending, they might be destroyed. We have just had a hard stone-moulded-doorway worked, and one of the jamb stones had a bed of more than ¼in. in one place, and not 1-32in. in another place. If the ¼in. was closed down to 1-32in., the upright mouldings would overhang the base: so the stone had to be re-worked. Disaster is always sure to follow badly worked stone. Soft stone may be chiselled and dragged to some kind of regularity, but with hard stone this is not possible, and special care should be taken to see that the worked surface and angles are true, before the stone leaves the banker.

In carrying up the door-jambs of public

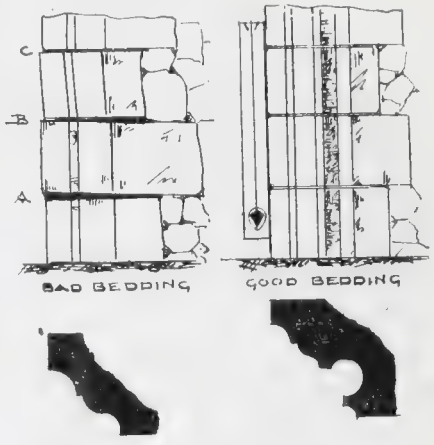


Fig. 5.

buildings, provision should be made for securing the door-frames to them, and this is best done by letting gunmetal dowels into the top beds of stone, where they are required. These dowels are wedge shaped, and jagged on the angles where they enter the stone; they are also leaded. The projecting part may be ¾in. in diameter, and screwed at the end; about six are enough for any ordinary door-frame. When the latter is ready it is put up against the dowels, and the exact position of these being marked on the frame, it is removed, and the dowel holes bored in it. When the frame is fixed the bolts cannot be seen, as the nuts are sunk ½in. in the wood, and covered with a piece of the same stuff. In church work the doors are sometimes hung direct to the stonework there being no frame. But this arrangement does not exclude draughts as a frame does; in this latter case hanging-hooks must be fixed in the jambs as they are raised. The word "bed" has been used above, and it is well to recollect that a bed of stone, say, in a quarry, is the stone itself; but here it is taken to mean two of the bounding surfaces of a worked stone: that on which it lies, and that which carries the stone next above it. The expression "quarry bedded" means that a worked stone is set on its natural bed, it is "joint bedded" when set

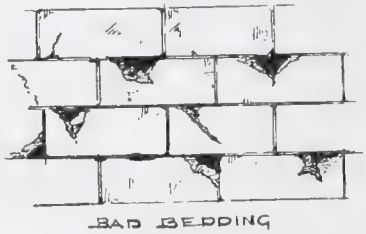


Fig. 6.

on end with the quarry bed vertical, and it is "face-bedded" when set on the original quarry face. In sandstones and oolites it is of importance to set stones in a building on their quarry beds; but for hard stones, like carboniferous limestone, it does not matter in the least how they are set.

THE SPANISH OLD MASTERS EXHIBITION.

All serious students of Spanish Art will be grateful to the Committee which has gathered together the very satisfactory collection of nearly 200 examples of Spanish Art, now on view at the Grafton Galleries.

We have had nothing like it in London before, and we congratulate its promoters very heartily on its scope. The pictures shown cover a lengthy period of 600 years, the earliest dating back to 1250, when Cimabue was a boy of ten, and sixteen years before Giotto was born.

The committee frankly acknowledge they have not been able to compass the impossible. They failed to obtain the loan of the famous examples by Velasquez from Grosvenor House, Kingston Lacy, Longford and Woburn; but photographs of the others, belonging to Mr. Laurie Frere and Sir George Donaldson, are shown; by Murillo, from Aynhoe and Somerley; by Ribera, from Ickworth and Langton; and by Goya, from Quantock.

On the other hand, the three largest and most representative collections of Spanish pictures, outside the National Gallery, have been placed unreservedly at the disposal of the Committee. These are the Bowes Museum at Barnard Castle; the collections formed by the late Sir William Stirling-Maxwell (now divided between Keir and Pollok in Scotland, and London); and the Gallery at Doughty House, Richmond, belonging to Sir Frederick Cook (Visconde de Monserrate). The committee also acknowledge the co-operation of several Spanish collectors in Madrid and elsewhere, and particularly of the well-known French collector, Dr. Carvallo. The King has lent five portraits from the private apartments at Buckingham Palace, and King Alfonso has honoured the Exhibition by becoming its patron.

The pictures are most satisfactorily hung. The first room contains Early Spanish paintings, ranging from 1250 down to Morales (1509-1586). A few Early Portuguese pictures are also shown. The general influence of Flemish Art is conspicuous. The first two walls in the large gallery are hung with examples of Velasquez and of his masters Herrera and Pacheco, and of his immediate follower Del Mazo. The dais and other wall display outstanding pictures by Murillo, and the portrait-painters Alonso Sanchez Coello, and Pantoja de la Cruz. The next gallery contains a further representation of Coello and of Murillo, and works by Zurbaran, Valdes Leal, and other masters; one wall is entirely devoted to El Greco, of whose art there are 16 examples. The next room is mainly filled with pictures from the Bowes Museum at Barnard Castle. The end gallery contains miscellaneous examples, with one wall devoted to Goya (12 in number), and his follower, Eugenio Lucas (1824-1870).

The catalogue is a model one, and too much praise cannot be given to the able secretary to the exhibition, Mr. Maurice W. Brockwell, for his scholarly and discriminating introduction. It goes without saying that the attribution of all the pictures is that of the owners who have lent them. Many will doubt some of the statements; but it is no part of our duty to challenge them. The catalogue fairly and fully quotes the opinions of competent authorities, and supplies all possibly obtainable data. There is certainly no wall space wasted on rubbish, and the committee have been fortunate in securing some rare and hitherto unexhibited examples.

The oldest, as we have said, is No. 9, an altar-front of the Early Catalan school (A.D. 1250), lent by Mr. Roger Fry, with Christ in the centre of five divisions. Distinctly Catalanian in style, Byzantine and Moorish influences are yet visible. It is without doubt one of the oldest pictures painted on wood, in any country, now in existence. To the third decade of the 15th-Century is assigned the four panels (Nos. 7, 10, 12, 15), illustrating "The Life of St. Ursula," by some unknown Catalan painter. Soon after, worked Juan de Burgos, whose "Annunciation" (No. 25) belongs approximately to the year 1450. Nos. 14, 17, 20 give an adequate idea of the art of Fernando Gallegos; all of about 1480. Correa's "Meeting of Joachim and Anne" (No. 33) is a work of the transitional period of about 1550. Two years earlier the Netherlandish painter, Pedro Campana (No. 28) extended his travels from Italy to Spain, residing for a long period in Seville, where Luis de Vargas was born in 1502. Luis de Morales's "El Divino" is seen to advantage in his Pietà (No. 31). His "Christ Bearing His Cross" (No. 19) renders the national tendency to the sombre and the tragic painfully and distractingly. With Juan de Juanes, who lived on until twenty years previous to the birth of Velasquez, we close the study of primitive Art as here shown.

Sanchez Coello is exceptionally well represented by eleven portraits, including three lent by the King. A notable example of the art of Juan Pantoja de la Cruz, who succeeded Sanchez Coello as Court painter to Philip III., is the "Margaret of Austria, Queen Consort of Philip III." (No. 75), from the Buckingham Palace collection. Vicenzo Carducci, of Florence, naturalised in Spain as Vicente Carducho, is represented by his "Self-Portrait" (No. 1). Juan Fernandez Navarrete, better known as "El Mudo," has two pictures catalogued under his name (Nos. 110, 173). Domenico Theotocopuli, or El Greco (1548?-1614), was a Cretan by birth, as is attested by signatures on four of his 16 pictures exhibited. Traces of the influence of the works of Titian, Tintoretto, and Bassano are visible in the early "Christ Driving the Money Changers out of the Temple" (No. 116), lent by Sir Frederick Cook. By 1577 he had left Rome for Toledo, where shortly afterwards, Mr. Brockwell thinks, he must have painted the "Christ Led to Calvary" (No. 122). To his second Toledan period are assigned Lord Yarborough's "Christ and the Money Changers" (No. 118), Senora Dona de Iturbe's "Salvator Mundi" (No. 120), and Captain Archibald Stirling's "Christ Bearing His Cross" (No. 125). Greco's assistant and imitator, Luis Tristan, is rarely seen out of Spain; but a gruesome "Martyrdom of St. Andrew" (No. 135) is attributed to him.

In 1599 Spain gave birth to her greatest painter, Diego Rodriguez de Silva y Velazquez. Velazquez worked first under Francisco Herrera the Elder for a few months, and then for five years under Francisco Pacheco, by whom there is a portrait of "A Knight of Santiago" (No. 46). Of the 27 pictures by Velazquez catalogued, certainly with varying degrees of certainty as to their authenticity, we may probably assign the hitherto unknown "Kitchen Maid" (No. 41), the "Two Young Men at a Meal" (No. 45), the "Omelette" (No. 47), and "The Water-Carrier" (No. 49) to this period. In 1625 Pacheco introduced Velazquez to the Court, and the youthful full-length "Portrait of Philip IV." (No. 61) in the collection of Sir George Holford belongs to that time. About 1640 seems to have been painted the "Spanish Gentleman" (No. 62), in the collection of the Duke of Wellington, in whose collection also is found the "Innocent X." (No. 59). Juan Bautista Martinez Del Mazo, Velazquez's son-in-law and assistant, is only credited with a single work, "A Corregidor" (No. 68), but quite possibly other pictures shown are by him, wholly or in part.

Jusepe Ribera, called also Lo Spagnoletto, probably painted "The Blind Sculptor" (No. 190), while his "Astronomers" (No. 161) has not been previously exhibited. Zurbaran is represented by his large "Martyr Bishop" (No. 98), one of the 10 pictures lent by Dr. Carvallo. Pedro de las Cuevas is unrepresented, but there are works by his pupils Antonio Pereda (Nos. 89, 101, 164) and Juan Carreno de Miranda. The latter was the master of Mateo Cerezo, "The Penitent Magdalen" (No. 169) and of Juan Martin Cabezalero, whose "St. Jerome" (No. 187) is a signed canvas by an exceedingly rare painter. Antonio de Puga, "St. Jerome" (No. 191), seems to be known by only one other picture, "The Itinerant Knife-Grinder," in the Hermitage Gallery. Fray Juan Rizi, a Benedictine Monk in the monastery of Monserrate, in Catalonia, may possibly have painted his own portrait in the "Madonna of Monserrate, with a Donor" (No. 162), which comes from the Bowes Museum at Barnard Castle. His younger brother; Francisco Rizi, Court painter to Philip IV. and Charles II., is now credited with the large "Belshazzar's Feast" (No. 104), long attributed to Carreno. One of the many versions of the "Immaculate Conception" is by Antolinez (No. 155). Claudio Coello painted the romantic portrait of "Ivan de Alarcon," in the collection of Senor A. de Beruete (No. 170).

Juan del Castillo, the master of Alonso Cano and Murillo, the author of "The Holy Family" (No. 107), probably taught better than he painted. Murillo is represented by 23 canvases, ranging from 1645, the date of the "Two Franciscan Monks" (No. 77) and the "St. Giles" (No. 156), down to a late period in his career. Murillo's rival in Seville, Juan Valdes Leal, has 10 works assigned to him in the Catalogue. Always a favourite in England, he will probably divide the honours with Velazquez as far as the general visitor is concerned.

THE EVOLUTION OF ARCHITECTURE.

Mr. Banister Fletcher, F.R.I.B.A., gave the first of twenty-four University Extension lectures on "Ancient Architecture" at the British Mueum yesterday (Thursday). During the coming winter he will trace the evolution of architecture in Egypt, Assyria, Greece, Rome, and Byzantium, with special emphasis on its influence on all subsequent styles down to our own day. In a comprehensive and lucid address the lecturer pointed out that architecture was not only the visible exponent of civilisation, but that all present-day buildings were founded upon ancient art adapted to modern needs. The study of architecture was thus necessary for architects, craftsmen, and students, authors, journalists, photographers, and antiquaries, and the teaching profession now adds to the interest of history by referring to dwellings and temples constructed by different nations for their social, religious, and political requirements, while for the general public a knowledge of the monuments of the past adds to the enjoyment of travel and the understanding of our own surroundings. The lectures will be illustrated by some twelve hundred views, so that during the twenty-four hours thus spent students will study what would require in actual travel at least as many months. Mr. Fletcher gave an illustrated review of ancient architecture, and referred to the different influences—geographical, geological, religious, climatic, social, political, and historical—which aided in the evolution of building. He passed in review the world-famous Sphinx, a sentinel of the past; the massive temples and tombs of the Egyptians, the palaces of the Assyrians, the temples and theatres of the Greeks, the monumental buildings of the Romans, such as the Baths of Caracalla, the stupendous Colosseum, and the Arches of Triumph, as well as the dwellings at Pompeii, the churches of the Early Christians, and the peculiar types of buildings erected under the influence of Byzantium. Obviously the British Museum, which contains the world's richest collection of



THE JEW'S HOUSE AND STEEP HILL, LINCOLN.

National Bronze Medal Drawings for Book Illustrations. By Miss Joan M. Brewer.

ancient art, is an ideal place for such lectures, as there the exhibits can be studied in the class, after the lecture. This course is recognised in qualifying for the diploma in the History of Art given by the University of London. The lectures are delivered on Thursday afternoons at 4.30, in the Assyrian Saloon of the British Museum. The subject of the next lecture will be "Egyptian Architecture." Particulars can be obtained from the hon. sec., 10, Woburn-square, W.C.

NATIONAL BRONZE-MEDAL DRAWINGS FOR BOOK ILLUSTRATIONS.

THE JEW'S HOUSE AND STEEP HILL, LINCOLN.

Every student of English architecture is more or less familiar with the Jew's House at Lincoln, because it is one of the best-known and celebrated of the Domestic remains of the 12th century still standing in this country. The accompanying sketch, by Miss Joan M. Brewer, of Brighton, formed one of the series for which a medal was accorded her in the National Competition this autumn.

The lower part of the Jew's House façade has from time to time been changed, and now a mid-19th-century shop-front is seen on the left-hand of the great Norman doorway. In Parker's "Domestic Architecture," by T. Hudson Turner (p. 40), an earlier and more Gothic arrangement is seen, with wooden lintel exposed, and corbelled out at the ends between old stone quoins. This was illustrated from a drawing by Wm. Twopeny, who has always been esteemed as a most reliable draughtsman. The small cusped lancet window on the first floor, also introduced in his representation, has since been removed to give place to a sash of much larger dimensions and of square proportions. The chimney above the fire place breast, corbelled out over the big door, has now been taken down to the eaves-level. This portal is the most distinguishing feature of the house, and its enrichments are very similar to Bishop Alexander's work in Lincoln Cathedral. No reason is afforded for the supposition that an original fireplace existed on the ground floor; indeed, it appears that the principal room was on the upper floor, so that this apartment must have been approached by a Norman staircase. Each of the windows had two lights, with a central shaft, so very characteristic of the period, under a semicircular arch of the usual type. The dwelling consisted of only two apartments; but the interior may have been divided by partitions or screens. At present the inside has been denuded of its original features, and so the exterior, fairly well intact, is the main attraction.

The so-called "John o' Gaunt's Stable," of the same date as the Jew's House, and also in Lincoln, formed the Hall of St. Mary's Guild, or was possibly the Merchants' Hall. Being located on the other side of the street to John o' Gaunt's Palace,* it became known as "the Stable." This popular error about its designation is supplemented by the terms "Sweep's House" or "Malt House," as both terms long survived locally owing to the different uses at various times to which the old building has been put. For a long while, however, it has been utilised as a set of tenements. The part immediately next the burial-ground of St. Peter's-at-Gowts may quite likely have been a separate house. Near St. Benedict's Church there is, or was, another Norman House with three perfect and fine doorways; but these may have been tampered with. On the other side of Steep Hill, higher up the road than the Jew's House, there is a further example, we believe, of a 12th-century dwelling, enriched with a string and other Norman details, also having the same arrangement of a doorway thickened out over to support a fireplace to the upper chamber. Miss Brewer's pen drawing furnishes an excellent idea of the present condition of the Jew's House as seen when looking up Steep Hill.

* A Pugin drawing of the oriel in this Palace, by James McLachlan, appeared in our issue of Nov. 29, 1901.

THE STAR INN, ALFRISTON, SUSSEX.

There is no more remarkable little town 'midst the South Downs of Sussex than the 14th-century "Allston," now familiar as Alfriston, in the Rape of Pevensey, and situate near the River Cuckmere, passing through a fertile valley, where many antiquities found in the parish bear evidence to its cultivation from the earliest times. British gold coins of the rarest types have been discovered here, and Roman coins in plenty and of much variety. Alfriston Vicarage-house, in half-timber post-and-panel, is quite famous as a sample of the modest abodes of our pre-Reformation clergy. The mutilated market-cross still stands among several Mediæval remains in the town, and the Star Inn, shown by Miss Brewer's sunny sketch, is a very ancient hostelry, with three pretty oriel windows in the oversailing upper story. The numerous original carvings about this building are of 16th-century date, and represent St. George and the Dragon, the badge of Sir Richard of Chichester, St. Giles, and the supporters of the Dudleys, who were great folks in Sussex when Henry VII. sat on the throne. There is an Easter sepulchre in the church, besides a sedilia and piscina of uncommon character, the fabric being of 14th-century date, and probably built on the site of a very ancient church conjectured by Mark Antony Lower, the well known Sussex



THE STAR INN, ALFRISTON, SUSSEX.

National Bronze Medal Drawings for Book Illustrations. By Miss Joan M. Brewer.

archæologist, to have existed here in what was called Alfric's Tun, and held from Earl Godwin. The Duke of Devonshire and Viscount Gage are now the chief landowners.

BRITISH PAINTING.

"British Painting" was the subject of a lecture given at the Nottingham University College on Monday evening by Mr. J. E. Phythian. The lecturer deprecated the little importance attached to the fine arts in English education, and suggeted that perhaps that was the reason why we lived in such ugly surroundings. One explanation was that there was no money attached to art, and that that in which there was no money made little appeal to Englishmen. Mr. Phythian pointed out that English painting had not progressed since the Middle Ages without a break, as was the case on the Continent, for at the time of the Reformation the Church ceased to encourage the art, and mural painting declined. Since then there had been little mural painting in England. There was no real school of painting in this country until after the 17th century, which began with William Hogarth. Hogarth was pugnacious and tenacious in the theory he put forward—namely, that painters should not simply follow the Old Masters, but strike out for themselves. He chose for the subject of his art not the mythological and historical subjects hitherto fashionable, but scenes taken from contemporary life, which he usually invested with satirical, moral purpose. As an example of Hogarth's originality of method, the lecturer exhibited a slide of the picture of the shrimp-girl, and expressed regret that in British art there were not more studies in which men and women were carrying out their callings. This especially applied to women, for nothing was more wearying than the average modern portrait of a lady. After Hogarth's time the foreign painters went more and more in the background, and British painters became very numerous. Mr. Phythian paid a high tribute to early English portraiture, but characterised the contemporary historical and religious painting as mediocre. The art of Richard Wilson, who belonged to the classical school of Poussin, and of Claude, Gainsborough, Ramsay, Reynolds, and other well-known masters, was briefly described, and reproductions of their most striking pictures were thrown upon the screen and analysed by the lecturer.

"BUILDING NEWS" DESIGNING CLUB.

AWARD OF PRIZES FOR SESSION 1912-1913.

The past year's record of the Building News Designing Club included the subjoined series of practical and attractive subjects, most of which taxed the skill and ingenuity of the members sufficiently, no doubt, but this standard, however that may be, resulted in the members ranking above the level of an easygoing, elementary class of design, because by thus working out problems of everyday needs which were submitted by the monthly competitions, an opportunity was afforded for the display, not only of sustained endeavour, which alone is of the first consequence, but for the application of personal knowledge in construction and lay-out of planning, as well as by the exhibition of good taste in building design. The work done each time demonstrated that throughout the course it was well sustained, with satisfactory results. This may best be judged by the illustrations which appeared in our pages of the selected schemes. The competitors were invariably given work to do which possessed more merit and permanent value than any dictated by a mere passing interest, while all the tasks set before them were calculated to greatly advance their education as professional students aiming at a true architectural efficiency, even though necessarily comparatively small things were attempted. At the same time every precaution on our part was exercised in so determining each set of conditions in such a manner as to keep the competitors as nearly as possible within defined limitations, so as to secure equal contests in every instance, without needlessly restricting the imagination of anyone taking part in either of these little essays thus set as trials of skill in a variety of directions.

Members from all parts of the country in this way obtained an equality of footing, and month by month an occasion was furnished during the session for bona fide work of the most suitable sorts, intentionally devised for comparatively-speaking unpretentious subjects, tasteful in character, but avoiding ideal conceptions of monumental projects by steering clear of abstract attempts at architectural style for its own sake. Such work as that is more advantageously dealt with in regularly-equipped schools of architecture, under the personal direction of whole-time professors and expert visitors of acknowledged repute. The Building News Designing Club advisedly concerns itself with no such pretensions, and self-help, after all, is a factor always encouraged. The success of our club during long years' record is largely due to that unambitious programme, coupled with a practical experience of its precise purpose, which is unique in that this scheme of ours affords facilities to everybody who has the enterprise to join, no matter at what distance

individuals may happen to be from London or how frequently they may change their address.

Those who have taken part in the mutual work conducted in this way for more than a generation by our Designing Club on such simple principles do not, of course, need to be told these facts; but for intending contributors it may be advantageous to point these features out. The few necessary rules, which are reprinted at the end of this report, will be found to supply all the conditions which have to be complied with by those who decide to join, and in the first number of the Building News issued each month while the competitions are in progress, the members will find full information regularly published as to the subjects in hand. It will be noted that four clear months of the year are left free for holidays and recreation, as we are perfectly alive to the obvious need of work being interspersed by play—in fact, every man can do better work by occasional relaxations. The tendency to grow slack ought to be thus overcome; but those who drop out of the running when immediate success is not accomplished never will succeed, as they are incapable of renewed effort, and so fail to secure the advantage of personal experience by throwing away their opportunities at a critical time, just when failure is best forestalled. The history of the club has rendered it necessary to repeat this otherwise trite warning. Those who commenced near the bottom most appreciate the value of our club; but then this is due to the fact that they persevered till they concluded their membership after nearing the top of the ladder which we thus set up to all comers.

The year's programme was thus made up: Subject A, "A Terrace of Seaside Houses in the Georgian Style"; Subject B, "A Block of West-End Shops with Offices Over and a Gallery at the Rear"; Subject C, "A Motor Garage, with Chauffeur's Lodge and Entrance Gates to Park"; Subject D, "An Automobile Show House"; Subject E, "A Parish Hall and two Cottages, one attached to a Small Village Post Office"; Subject F, "A Small School for Arts and Crafts"; Subject G, "A Country Rectory with a Parochial Library combined"; Subject H, "A Boat-house and Gymkhana Club on a River Site." We illustrated all these subjects and reviewed the designs sent in, so that members know how they stand; why the winners won and the losers lost. The proceedings were marked by the almost unbroken advantage gained on his merits by one competitor, "Cinq Villes," thus made it difficult for his confrères to overtake him, and, of course, we had to decide impartially. It is happier when neck-and-neck running takes place, for handicapping is out of the question. No doubt can be entertained as to the first position, but the second and third places very nearly resulted in a tie, "Shylock's" marks working out at 37, and "Revil's" at 35; "Cinq Villes" standing at 78.

AWARD OF THE PRIZES.

The first prize of £10 10s. is awarded to "Cinq Villes," Mr. George Hollins, jun., Market Place, Newcastle, Staffs.

The second prize of £5 5s. is awarded to "Shylock," Mr. J. A. Howell, County Offices, Oxford.

The third prize of £3 3s. is awarded to "Revil," Mr. George Wright, jun., 73, Ashgrove, Wavertree, Liverpool.

Hon. mention is awarded to "Everest," Mr. D. O. Harris, Market Square Chambers, Pontypridd; "Gem," Mr. J. R. Williams, 110, Queen's-gate, Bolton; and to "Baccy," Mr. Edward Adams, Carfax Chambers, Oxford.

The three prize-winners are requested to make application for the same, and, after confirmation, cheques will be sent to them on October 24.

SESSION 1913-1914—DESIGNING CLUB RULES.

1. Drawings to be sent within twenty-eight days after the publication of the particulars of each subject.

2. One or more subjects will be given every month, from which a competitor may choose.

3. The drawing to be executed in firm black lines on white drawing paper, in sheets of the absolute size of 24in. by 18in., unless an exception to this rule is named, when the subject to which the deviation applies is set. No washes or tinting in colour whatever. Outline to be the first consideration; but drawings may be slightly shaded with shadows executed wholly in line. Sectional parts to be shown in neat "hatching," or blocked in. The scale to be used will be given with each subject, and this scale must be drawn on each sheet.

4. Drawings to be forwarded, prepaid, unmounted, by post, care being taken to pack the roll so that the drawings are not crushed through the post. With each set of drawings a coupon must be enclosed, cut from our front page. This competition is for buyers of the paper only, and not for casual readers thereof.

5. On entering the class (which may be done at any time) each competitor is required to furnish his name and address, which must be written legibly on the back of each drawing, as a guarantee of good faith, the nom de plume the author intends to adopt being boldly marked on the front of each separate drawing.

6. Prizes of £10 10s., £5 5s., and £3 3s. will be awarded to the best series of designs. Our decision to be final.

7. The same prize cannot be awarded more than once to the same student, and those who have taken a first prize cannot compete again.

8. We reserve the right of arranging the drawings for publication in any manner we deem necessary.

9. A critical notice of the designs sent in of each series will be given in an early issue following the receipt of the drawings. All drawings are returned when done with.

10. Plagiarism, in any one design, if any charge of the kind is established to our satisfaction, will disqualify an otherwise possible prize-winner, no matter however many previous marks he may have secured.

FIRST LIST OF SUBJECTS.

A BLOCK OF ALMSHOUSES, WITH SMALL CHAPEL AND HALL.

A.—The site for this project is level in contour from north to south, but the land falls in an even gradient from west to east, one in twelve. The main block is to include seven cottages. The central house and the two end ones are to have two floors each, the four intermediate ones in the row are one-story buildings, the whole forming one continuous, simple elevation, long building, facing south-east, parallel to the highway. The end houses and the middle dwelling are, however, to project two or three feet in front, so as to diversify the main line of the frontage, which is set back 80ft. from the road. Both the terminal houses to have a staircase to give a separate approach to the dwellings on the first floor. There will thus be accommodation for four old men on one side and four old women on the other, the central house being quarters for a man and his wife as master and matron. On the ground floor of their cottage a small room adapted for the occasional use by the charity committee, but otherwise to be used by the occupiers, who will have two bedrooms and a bathroom on the first floor. Each other dwelling to have a living- or keeping-room of the area of 12ft. square, and a sleeping-room, larder, scullery place, and w.c. More similar houses will eventually be built towards the west, as separate blocks, but these do not require to be shown now. The rear elevation of the present block, with its needful projections, to be considered in relation to these extensions. There is to be provided, as part of the present scheme, a pair of detached buildings (separated approximately from each other by the length of the out-to-out dimensions of the façade of the central block), one to be used as an assembly-hall, towards the south, and the other as a chapel, towards the north, and each standing about 6ft. in front of the end houses, at right-angles with the main front. The assembly-hall to seat fifty persons, clear of a small platform, which will be removable when not required for use of entertainments. There is to be a large open fireplace on the south side, fitted with settles for three persons on either hand, within the recess. The chapel to also seat fifty adults, as the hamlet people will use the building till the other houses are erected. There must be an organ recess on the north side of the chapel, and at its eastern end a small screened-off chancel, with priest's prayer-desk, altar pace, and altar. No vestry is needed. The chapel and hall entrances to be set back towards the rear end in each case and to face the quad, both having a porch, to serve as a wind-lobby. These projections may come within the out-to-out dimensions before mentioned. No pulpit in chapel, as the preacher will speak from the chancel steps. Roofs of both buildings to be open-timbered, simply treated. Chapel heated by radiators, and boiler place and fuel store below the organ recess. Features to be made of the chimneys. These two blocks will be similar in size, but otherwise they will differ in treatment of detail. The style to be Georgian, in brown bricks, with red-brick quoins, window-aprons, and strings. Painted white wood cornice to eaves of houses, double-hung sashes with bars. Roofs covered with tiles. Chapel and hall to harmonise, but to have brick gables and stone mullioned windows. Level of the ground floor to be 12in. above ground line, and the height of rooms in cottages to be 8ft. 6in. from floor to ceiling. Outbuildings or projections less. Comfort for the old bodies to be considered and wind-lobbies needed. Verandah in front objected to. An elevation of the whole front required, but part only of back need be shown, and one end and two cross-sections of house block. Plan of whole arrangement to be given. Two elevations of chapel and hall. Three if space will allow and one section of each. Scale, 8ft. to the inch. Small block plan, if room to include one. View of part of houses' facade and including either chapel or hall. All drawings on one sheet of paper, 24in. by 18in. Drawings to be sent in (with coupons attached to the back) on or before November 1 next.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE R.I.B.A. KALENDAR, 1913-1914.

Members and Licentiates are requested to notify the Secretary of any changes of address or telephone numbers not later than Monday, October 6.

THE EXAMINATIONS.

The Preliminary Examination will be held on November 25 and 26, 1913. Applications must be sent in on or before October 4 (to-morrow).

The Intermediate Examination will be held on November 21, 24, 25, 27, and 28, 1913. Applications must be sent in on or before October 4 (to-morrow).

The Final and Special Examinations will be held on December 4, 5, 6, 8, 9, 11, and 12, 1913. Applications must be sent in on or before October 11.

The Testimonies of Study, etc., with the necessary fees, must accompany the applications, all of which are to be addressed to the Secretary, R.I.B.A.

Examinations for certificates of competency to act as district surveyor under the London Building Act, 1894, and as building surveyor under local Acts and authorities, will be held in London on October 23 and 24, 1913. Applications will be received until October 9. Full particulars and forms of application may be obtained from the Secretary, R.I.B.A.

LICENTIATES AND THE FELLOWSHIP.

The next Examination of Licentiates desiring to qualify for candidature as Fellows will take place in January next. Applications for admission to the examination must be sent in on or before November 30. Full particulars may be obtained on application to the Secretary, R.I.B.A.

THE CONSTRUCTION OF BELFRIES: EFFECT OF VIBRATION ON BUILDINGS.

The Science Committee of the Royal Institute have under consideration the subjects of:

1. The construction of belfries.
2. The effect of vibration on buildings.

In view of the increasing use of heavy road traffic and machinery, and their injurious effect on buildings, the Committee are desirous of collecting useful data and information, with a view to the issue of a guiding memorandum on the subject. Members and Licentiates of the Royal Institute are invited to forward any particulars or statistics

(a) As to the measured swing of brick, stone, and timber belfries, tall chimneys, or similar erections.

(b) As to the amount and extent of vibration in buildings.

(c) As to any precautions taken to deaden or minimise the effect of such vibrations or oscillations.

Particulars, drawings, or statistics would be greatly appreciated, and should be forwarded as early as possible to the Hon. Secretary of the Science Committee, R.I.B.A., 9, Conduit street, London, W.

ENGLISH OAK AND OTHER ENGLISH TIMBER.

Architects desirous at any time of procuring English oak or any other English timber are invited to write to the Honorary Secretary of the "English Forestry Association," Farnham Common, Slough, Bucks. This association is not a trading association, and does not buy or sell timber. Its objects are to assist consumers and those desirous of procuring English timber to do so with the least possible trouble, and to remove some of the handicaps from which English timber at present suffers. The Honorary Secretary will welcome any inquiries from architects or consumers, and give all possible information as to where supplies of English timber can be obtained, or on other points relating to the commercial utilisation of timber.

SESSIONAL PAPERS.

The following is the programme for the ensuing session, 1913-14, of the Royal Institute:—

Nov. 3.—President's Opening Address.
Nov 17.—The New Wesleyan Hall. Paper by Mr H. V. Lanchester.
Dec. 1.—Business Meeting.
Dec. 15.—The Repair of Ancient Buildings: Paper by Mr W. A. Forsyth.
Jan. 12.—Business Meeting.
Jan. 26.—London Traffic Problems: Paper by Colonel Sir Herbert Jekyll, K.C.M.G. Announcement of award of Prizes and Studentships.
Jan. 27-Feb. 9.—Exhibition of R.I.B.A. Prize Competition Drawings.
Feb. 9.—President's Address to Students; Presentation of Prizes and Studentships.
Feb. 23.—London Railway Stations: Paper by Mr. Paul Waterhouse.
Mar. 9.—Business Meeting. Election of Royal Gold Medallist.
Mar. 23.—On Borrowing in Architecture: Paper by Mr. L. March Phillipps.
April 6.—Professional Practice and Conduct: Paper by the Practice Standing Committee.
April 20.—London's Bygone Building Acts and the Development of London: Paper by Mr. W. R. Davidge.
May 4.—Eightieth Annual General Meeting.
May 18.—The London Society and its Aims: Paper by Mr. T. Raffles Davison.
June 8.—Business Meeting.
June 22.—Presentation of the Royal Gold Medal.

"SMOKE-PROOF" BUILDINGS.

A fireman of long and varied experience in the service of the New York City Fire Department recently stated that of the bodies recovered from burned buildings, a surprisingly large number showed no visible effect even of being slightly scorched by the flames, which means, of course, that a large proportion of the fatalities are due to simple asphyxiation. In the Park Avenue Hotel fire of some ten years ago, most of the guests who lost their lives were found, if we remember rightly, without a visible mark of fire upon their persons or clothing.

So far as the fatal effects are concerned, the poisonous gases that accompany smoke are as deadly to human life as flame. Hence, if the lives of the inmates of a tall office building are of greater value than the structure itself, remarks the *Scientific American*, we should take greater pains to protect human life against asphyxiation than we do to protect the steel and masonry building against fire. But to secure both of these results, it is necessary, not merely to construct the building itself of incombustible material, but to see to it that everything of a combustible nature in the way of fittings and furnishings be most rigidly excluded. If the tons of wooden furniture in the lower stories of a three or four-hundred-foot high building were ablaze, and the products of combustion, the smoke and gases, were sweeping upward through stairways and elevator shafts and filling the various corridors, what earthly chance would the inmates of the upper stories have of getting out of the building before they were overcome by suffocation?

All of which considerations give great force to the protest which has recently been made by Mr. A. G. Patton, manager of the Special Hazards Department of the New York Fire Insurance Exchange, against the plan of the Board of Estimate to equip our new municipal building with wooden office furniture. We have buildings from four hundred to seven hundred feet and more in height in New York to-day. They are fireproof—that is to say, incombustible—it is true; but what about their contents?

By all means let the Board of Estimate rescind its action and provide for making our municipal building fireproof not only in itself, but as to its contents.



A WORKMAN'S COTTAGE FOR £165.

A WORKMAN'S COTTAGE FOR £165.

Having read with interest the article in your issue of July 18, by Mr. Frank H. Heaven, under the head of "A Workman's Cottage for £150, I now venture to send you a design for a workman's cottage, to cost £165, which, I think, meets with the requirements of the working man—i.e., a convenient house giving the necessary accommodation for a small family, and, at the same time, one that can be let at a low rent.

There is a great demand at the present time for houses to suit the working man. The working class, to a great extent, prefer sitting round their kitchen fire of an evening. The lighting of a fire in their small sitting-room would involve an extra expense, so, consequently, this room is seldom used. Therefore, I think that if they are provided with a large and comfortable parlour fitted with a range, a scullery in which to do their washing, and sundry other necessary things which render a kitchen rather unpleasant to live in, three bedrooms, and, if possible, a bath-room, larder, coals, and w.c., they would be more contented than if a small sitting-room was squeezed in and their kitchen reduced in size.

The above design provides for a parlour 11ft. by 11ft.; scullery, 10ft. 3in. by 8ft.; hall, 7ft. 9in. by 8ft.; larder, coals, and w.c. on the ground floor, and three bedrooms and bathroom on the first floor. Each bedroom is capable of taking a double bed. The bathroom is fitted with an enamelled iron bath, the water supply being from the "Rapide" heater, that can be heated with either gas or oil, as supplied by the Patent Tip-Up Bath Co. If preferred, a tip-up bath could be fitted in the cupboard under stairs, thus leaving the bathroom to be used for boxes.

The house is constructed of bricks and tiles, the lower half faced with dark-red facing bricks, black pointed, and the upper part rendered in cement with clean pebble-dash. The exterior walls are 11in. hollow walls tied with galvanised iron ties.

A house of this description would cost £165, or, if the position was suitable, and 9in. solid walls were substituted for 11in. hollow ones, £160.

From the above we can see that the working man may attain a convenient house for a moderate rent, as a house of the above design could be let at the low rent of 5s. per week, giving a return of 7.87 per cent. on outlay with which to pay rates, etc.

OSCAR F. TURVILL

23, Dunstable-road, Richmond.

Mr John H. Brett, county surveyor for Antrim has tendered his resignation.

PRACTICAL PROBLEMS OF HOUSING REFORM.*

By Mr. W. E. Riley, F.R.I.B.A.,

Superintending Architect, London County Council.

In the first Chadwick Lecture, delivered on Wednesday, Mr. Riley dealt with unhealthy areas, illustrating the subject by reference to the housing operations carried out by the London County Council, by whom accommodation has been provided for 55,577 persons, as against 45,562 persons displaced. Mr. Riley briefly referred to housing legislation, which practically commenced when the late Earl of Shaftesbury called public attention, in 1851, to the deplorable condition of dwellings inhabited by the labouring classes throughout the country, followed by the Torrens Acts of 1868 and 1879, and those for which Viscount Cross was responsible in 1875 and 1879. The principal Act dealing with the subject was passed in 1890, with later amendments. The lecturer traced the causes of overcrowding, which are frequently the result of the necessity for the labouring classes to live near their work. Mr. Riley referred to recent inquiries made in London as to the necessity for certain classes of workmen to live in immediate proximity to their employment, whether the rents they have to pay are excessive, and what steps can be taken to remedy the evil. In Bethnal Green, 1,067 persons were found to be engaged in 109 different forms of employment, and, in the four areas considered, 21 to 40 per cent. found it necessary to live near their work. The average weekly rent of single-room houses in tenement blocks varied from 3s. 5¼d. to 5s. 1¼d., and the rents of the two-room, three-room, and four-room houses ranged from 3s. 3d. to 2s. 5d. a room, the average being 2s. 9¾d. a room. Mr. Riley mentioned a case, at Windsor-court, in which a women refused to leave an insanitary and overcrowded tenement of two rooms, although better accommodation was offered on one of the County Council estates. The result of the Council's inquiries was that the rents for working-class accommodation in the districts affected are high, and as a considerable proportion of the workers belong to the classes of labour which receive the smallest remuneration, the rents are particularly high in proportion to the wages received. As to whether the municipality can house at lower rates, the lecturer pointed out that the rents charged are those which are only possible after the sites have been written down to their housing value. For example, the actual cost of the site of the Bourne estate was £201,000. This was written down for housing purposes to £44,000, the difference of £157,000 being equivalent to £103 per room. The rents now charged are consequently only sufficient to meet about 55 per cent. of the total cost of site and dwellings. On financial grounds, it is practically impossible to provide housing accommodation in the central districts at rents appreciably lower than the rents ruling in the neighbourhood, unless further charges are placed on the rates; and the remedy appears to be cheap and rapid transit to suburban areas. Mr Riley outlined the duties placed on authorities by Part I. of the Act of 1890, under which proceedings are initiated by representation from a medical officer of health, and a scheme is eventually allowed by the Local Government Board. The scheme must provide for the demolition of the old houses, and the provision in suitable dwellings of accommodation for the displaced persons of the working class. The dwellings must be on the area or in its vicinity. The scheme may also provide for widening or closing existing thoroughfares, and for the construction of new roads. The lecturer illustrated the procedure by a description of the Boundary-street scheme, in which a huge slum 15 acres in extent was reconstructed by the London County Council. Mr. Riley showed by slides how the area has been laid out with an avenue, 60ft. wide, leading to a central open space, from which tree-planted streets 50ft. in width radiate. Twenty-three blocks of tenement dwellings were erected, and 5,524 persons were rehoused, or only 195 less than the number displaced, and 824 more than the scheme required. Mr. Riley referred to the Boundary-street scheme as a pioneer effort to improve upon the tenement accommodation already provided, and described the various stages in the evolution of the latest design for this class of dwelling. Mr. Riley referred to a scheme at Nightingale-street, St. Marylebone, where an area had been reconstructed by the local authority and the owner acting in co-operation, and also described what is the largest clearance ever embarked upon under the Act—viz., the scheme dealing with Tabard-street and Grotto-place, Bermondsey, and Southwark. The area has a total extent of 17 acres, the number of persons of the working class affected being 4,552. It has been decided that the central portion of the area, or about 5 acres, shall be laid out as a public open space, and the requisite rehousing accommodation shall be provided in five-story balcony block dwellings overlooking the open space, with as many cottages as can conveniently be erected. The total net cost of the scheme is estimated at £389,000.

LECTURE II.

In the second lecture, yesterday, Mr. Riley dealt with unhealthy houses, improvement scheme, and common lodging-houses. He referred to housing operations under Part II. of the Housing Act, 1890, under which authorities may undertake schemes for clearing unhealthy areas which are too small to be of general importance, and to the duty of inspection of dwelling-houses. He mentioned the difference in expert opinion as to the comparative utility of proceeding under Part I. for the clearance of an insanitary area, or under Part II. (Section 38) for the removal of buildings which obstruct the light and air to adjacent dwellings. Advocates of Part I. contend that nothing but an improvement scheme can effectually remedy the conditions in a particular area, and that the demolition or repair of isolated obstructive buildings only produces a patchwork result and aggravates insanitary conditions elsewhere. London and Liverpool were quoted as examples of the benefits conferred by Part I. procedure. On the other hand, supporters of Part II. point to the heavy expense involved in Part I. operations; to the experience that the population displaced does not return to the new houses, and that by dealing with individual houses only bad property is repaired or demolished. The lecturer was of opinion that whether Part I. or Part II. shall be applied to any particular area must always be a problem for determination, according to the special circumstances of each locality. He illustrated the difficulty by reference to a case recently under consideration in London at Brady-street, Bethnal Green, where the local authority suggested dealing with an area of about seven acres under Part I. The central authority, however, proposed that the local authority should proceed under Part II., and has postponed a final decision until the exact form of foreshadowed legislation is seen. Mr. Riley illustrated by slides the work accomplished in Birmingham under Part II. The example of a small clearance scheme under Part II. at Mill-lane, Deptford, was given, particularly as it included the provision of a common lodging-house for men. The lecturer gave particulars of the accommodation provided and the charges made at the men's lodging-houses, three of which have been erected in London, and referred to the problem of providing similar accommodation for women. The erection of such an institution was considered in London by the County Council, but was abandoned. Apart from the social problem involved, the necessity for the adoption of a small number or unit adds greatly to the cost. Mr. Riley alluded to the recent erection of such an institution in London under the Ada Lewis Trust, of which particulars were given. Mr. Riley described the principle adopted in regulating the finance of municipal schemes in London. The rents charged are not to exceed those ruling in the neighbourhood, and are so fixed that, after providing for all outgoings, interest, and sinking-fund charges, there shall be no charge on the county rate. The commercial value of site in central areas is written down to a housing value, and as an example the lecturer stated that the cost of a three-room cottage at Tooting, a suburban district, was estimated at £263 10s., and the actual cost of a three-room tenement on an estate in the central area of Holborn was about £760, the land alone costing £454. A family of six could thus be housed at Tooting for about five-eighths of the cost of the land alone in the central area. Mr. Riley described the development of the Bourne Estate, by the erection of twelve block dwellings, containing 764 tenements, for the accommodation of 3,902 persons. A description was also given of the Millbank Estate, which has been laid out on the site of Millbank Prison, and accommodates 4,430 persons in seventeen blocks of dwellings.

LECTURE III.

In the third Chadwick Lecture, delivered to-day, Mr. Riley dealt with municipal housing accommodation in London provided voluntarily, and not in order to comply with statutory obligations. Estates have been purchased on the outskirts of the county, where land has a low value and cheap and rapid travelling facilities exist, and there cottages have been erected. The lecturer pointed out that an essential difference in these operations is that they must be self-supporting, the cost of land being taken into account at purchase price, and the scheme must show financial equilibrium after bearing all charges. Mr. Riley showed a diagram indicating the proportion of the average rent per room which is available for the buildings and plans. Thus at Tooting, out of an average rent per room of 2s. 5d., the capitalised value of only 11¼d. is available for buildings and plans, the remainder going in rates, taxes, repairs, water-supply, insurance, management, and sinking-fund. Mr. Riley pointed out that the conditions in London are more or less characteristic of other large towns, the population in the central areas tending to become stationary, or even to diminish, and to rapidly increase in the suburban districts to which cheap and easy access is possible. He illustrated the relative cost of living in the central as against the suburban districts in London by two tables. In the first, the rent of a three-roomed house in new dwellings in a central area was compared with the rent of a three-roomed house in a suburban district, plus one workman's return railway fare. A workman in Bethnal Green would save 1s. 5d. per week in rent by living one and a half miles outside the county boundary at Tottenham; but it would cost a workman at Westminster 9d. per week more to live at Croydon. The second table allowed a tramway fare of 1s. per week, and a saving in rent by living in a suburban rather than a central district, is almost invariable. The attractions of air space and pleasant surroundings can, therefore, be secured at practically no extra cost for rent, or even, in the majority of cases, with some reduction of expense. It must be borne in mind that the saving would take place only when one railway or tram fare is necessary. Mr. Riley stated that there could be no question as to the hygienic superiority and greater attractiveness of housing the worker in a cottage with pleasant surroundings, rather than in tenements in the central district. He referred to the passing of the Town-Planning Act as a distinct step in the solution of the problem, as well as an attempt to check the unordered growth of cities. The Act provides not only for the proper design of streets, but also for the limitation of the number of houses and the provision of adequate light and air, and denies the right to overcrowd large masses of population. Mr. Riley mentioned the work already been provided for 3,482 persons in 472 worth, Port Sunlight, Bournville, and other places, and gave particulars of the development of cottage estates in London by the County Council. The first was at Tooting, and comprised 38¼ acres in extent. Its development has been completed and 1,129

* Chadwick Public Lecture, Glasgow, 1913. In the Botany Classroom, University of Glasgow, Wednesday, October 1.

cottages erected, accommodating nearly 9,000 persons. The first estate bought outside the county was at Norbury, where about 30 acres were acquired, and accommodation has already been provided for 3,482 persons in 472 cottages. Further accommodation will be provided for 2,019 persons in 290 cottages and two shops. The largest estate purchased by the County Council for housing purposes was at White Hart lane, Tottenham, where 226 acres were bought, at the rate of £400 per acre. Owing to difficulties in development consent has been obtained for the sale of the northern portion, but the southern part is being built on, and accommodation has been provided for 6,835 persons. Mr. Riley stated that Parliamentary sanction has been obtained to an experiment on part of the estate by laying it out as a garden suburb. It has been thought that it would be to the advantage of the district if a proportion of better-class houses could be erected, and this will be done under the Garden Suburb scheme. The estate last purchased by the Council comprised about 54 acres at Hainmersmith, and development is now proceeding. Mr. Riley illustrated the lecture by photographic slides (many of which had been photographed in natural colours) of the cottages. The lecturer also referred to the question of whether the cost of construction can be cheapened, either by the employment of new materials or by a reduction in the standard of construction or design. Mr. Riley expressed the opinion that any such reduction should be very seriously considered before it is made, and referred to the recent Report of the Departmental Committee appointed by the Board of Agriculture to consider Small Holdings as bearing on the subject. Mr. Riley concluded by giving statistics of the extent of municipal housing operations in London.

BUILDING TRADE SLUMP IN GERMANY.

According to the *Glasgow Herald's* Berlin correspondent, the greatest distress prevails in the building trade in Germany, where the extent of unemployment varies from 12 to 30 per cent. in different parts of the country. In Berlin, where 23 per cent. of the builders are without work, the present distress is due to the excess of building in recent years. There has been an over-speculation in property building, resulting in about 4 to 5 per cent. of all dwellings and shops (about 30,000 to 40,000 in all) standing vacant. The standstill in the building trade exercises, of course, an adverse influence upon a large number of allied industries, such as painters, joiners, glaziers, paperhangers, locksmiths, slaters, and plumbers. The position of the slaters is particularly bad, the number of the unemployed being estimated at 30 per cent.

The distress in Berlin would be very grave indeed if it were not for the favourable position of the electrical engineering industry, which employs a very large number. In most of the other cities in Germany there is also a slump in the building trade. In Munich, out of 70,000 members of the trade unions engaged in this trade, over 6,000 were out of work in July, and 1,624 had been without work over six weeks; and to these must be added the non-unionist builders. The Munich Builders' Association granted 31,284 marks for the aid of the unemployed, and the municipality granted a further 90,000 marks, making in all over £6,000; but even this did not suffice to remove the distress. In the first six months of 1912 the Munich municipal soup kitchen provided 198,000 free dinners; but in the same period in 1913 it had to provide 260,000.

In Nuremberg, the Siemens Schuckert Works have not had such a bad period for a long time, and there are 6,000 trade-unionists in the city without work. In Breslau last month 10,000 artisans in the building trade were without employment; and in Hamburg, of 11,000 builders, an average of 2,700 to 3,000 per month are workless. It is further interesting to note, as illustrating the bad state in the woodworking industries, that the membership of ten woodworkers' sick-insurance clubs in Berlin was reduced from 43,141 to 39,137 in the period from June, 1912, to June, 1913.

The whole article from which we quote appears in the *Glasgow Herald* of September 25, and is well worth serious study.

THE SOUTH AFRICAN INSTITUTE OF QUANTITY SURVEYORS

A STANDARD SYSTEM OF MEASURING BUILDERS' WORK.

We have received from the honorary secretary and treasurer, Mr. J. W. Cowling, F.S.I., of Pretoria, a copy of the "Standard System of Measuring Builders' Work in South Africa," which has been adopted by the above Institute, and accepted by the National Federation of Building Trade Employers in South Africa, the Public Works Department of South Africa, and other public bodies. It will, therefore, doubtless come into universal use in South Africa.

Schedules of quantities in South Africa have in the past been prepared by methods widely differing in principle and in detail, depending mainly upon the personal characteristics of the persons controlling their preparation. An endeavour was made by the Transvaal Society of Quantity Surveyors to improve matters, and, so far as the Transvaal Province was concerned, a greater degree of uniformity was arrived at by the issue of a system of measurement. Consequent, however, upon the incorporation of the South African Institute of Quantity Surveyors, together with the amalgamation of the Transvaal Society of Quantity Surveyors, and the greatly extended practice of builders tendering for work (in all parts of the country), the need for a universal system was made apparent. The South African Institute of Quantity Surveyors have therefore compiled this standard system of measuring.

Generally, the system provides that: (a) All materials and workmanship should be fully described, so as to give a clear idea of the character and cost; everything shown on the drawings and described in the specification should be embodied in the quantities, and nothing should be left to assumption. (b) All work should be measured net as fixed in the building; no allowance made for waste except where otherwise defined; passings to be measured as hereafter defined in the various trades; the term "measured net" is to mean the finished surface or quantity i.e., all openings deducted, and no allowance made for laps except where otherwise defined. (c) Where work is unusually constructed or elaborately detailed, a sketch may be inserted in the bill to illustrate it. (d) The work of each trade is to be given separately, and billed under the trade headings and items as described, excepting in the case of provisional work, where the various trades may be brought together under one heading. (e) Unless described as "stock," all work is to be considered as executed from detail drawings, or vice versa. (f) All items in each trade (unless otherwise described) are to include for all patterns, templets, labour, and materials pertaining to that trade required in making, delivering getting in, hoisting, and fixing the article in position. (g) Constructional ironwork such as joists, girders, columns, stanchions, etc.—should be kept separate to each floor; brickwork, masonry, and concrete should be kept separate where fixed at a height exceeding 50ft. above ground-level, or other defined level, and from thence upward in ranges of 20ft. (h) Any work the quantity of which is uncertain should be described as "provisional," and remeasured as executed. (i) In circular work comprising material and labour, "quick" and "flat" sweeps should be kept separate; a radius of 10ft. and over to be "flat," and under 10ft. "quick."

On the site of the old General Post Office, St. Martin's-le-Grand, there is to be erected, according to the designs of Sir Henry Tanner, architect to the General Post Office, a building to accommodate the Accountant-General and his staff.

WEIGHING THE SOOT-FALL OF OUR CITIES.

Wednesday last witnessed the commencement of an organised and systematic attempt to measure the soot- and dust-fall in many of the most important towns and cities of the United Kingdom.

The movement for a more scientific examination of the character and extent of air-pollution has sprung from the appointment of a committee appointed at the International Congress on Smoke Abatement held in London in March and April, 1912. The committee—of which Dr. W. N. Shaw, of the Meteorological Office, is chairman—has held five meetings in London during the past twelve months, and has drawn up the specification of a standard soot-and-dust gauge for these observations, together with regulations for its use, and rules for the chemical examination of the solid and liquid deposit.

The principle of the apparatus and method that has been selected by the committee, after careful examination of all that have been tried for the purpose, is that of catching the soot and other impurities that fall by their own weight in a given area in a specified time, or are carried down by the rainfall. This method does not give the amount of solid matter suspended in the air at any given moment of time; but there is a close relationship between the amount of solid matter that falls, or is carried down by the rain, and that in suspension; and the former may be taken, without serious error, as an index and measure of the latter. The apparatus used is, therefore, simply an enlarged rain-gauge, the catchment area being increased to four square feet, and several large bottles being provided to hold the collected solid and liquid matter. The official description of the gauge is as follows:—

"The standard gauge consists of a galvanised-iron stand, supporting a circular enamelled-iron gauge-vessel of four square feet superficial area. Projecting above the gauge-vessel is a wire screen, open at the top, intended to prevent birds from settling on the edge of the vessel. The gauge-vessel is conical at the bottom, and communicates, by means of a glass tube and rubber connection, with a group of three or more bottles connected together, and designed to hold one month's rainfall. The rain and deposited matter falling on the gauge are collected in the bottles, and are removed once a month for analysis."

The instructions for the use of the standard gauge state that it should be placed, if possible, on the ground-level, in an open space, free from abnormal dust or wind eddies. The bottles containing the water and deposit are to be removed on the last day of each month, and are to be replaced by thoroughly cleaned empty bottles. Before removing the bottles, the gauge-vessel is to be washed down with some of the collected water, a brush and rubber squeegee of standard pattern being used to remove any adherent matter. A chemical analysis of the water and deposit is then to be made by a standard method, details of which will be provided by the committee.

The soot- and dust-fall observations already made in London by this method have given totals varying from 195 tons per square mile per annum at Sutton, in Surrey, to 650 tons per square mile in the East End of London. The experiments at Leeds gave totals ranging from 242 tons in the centre of the city to 539 tons at Leeds Forge, while Glasgow and Coatbridge have beaten these figures with totals of 1,330 tons and 1,939 tons respectively.

The granite statue of Ramses II. recently unearthed at Armant in Upper Egypt is now on view at the Cairo Museum. The statue dates from B.C. 1250 and is in excellent condition.

The Local Government Board, having sanctioned the borrowing of £18,600 for the widening and improvement of the Western Esplanade, Southend, the borough engineer, Mr. E. J. Elford, has given instructions for the commencement of the work.

OBITUARY.

The death of Mr. John Dodsley Webster, F.R.I.B.A., head of the firm of Messrs. J. D. Webster and Son, architects, of St. James-street, Sheffield, and diocesan surveyor for York, took place at Sheffield on Wednesday last. Mr. Webster had been a Church Burgess for nearly nine years, and held the office of Capital Burgess in 1910. He was the last surviving founder of the Sheffield Children's Hospital, and was chairman of the board for several years. He had been since 1873 a Fellow of the Royal Institute of British Architects, and was also an active member of the Sheffield Society of Architects and Surveyors.

We regret also to announce the death of Mr. Robert Singer Hyde, M.S.A., of Worthing, on Wednesday, 24th ult., at St. Ethelstan's Nursing Home, Teddington. He was for many years partner with the late Mr. Edmund Scott, F.R.I.B.A., of Brighton, before he opened his practice in Worthing. During this partnership St. Bartholomew's Church and the Chapel Royal, with many other well-known Brighton buildings, were erected. In the year 1882 he commenced at Worthing, and there continued until the time of his decease. The following are some of the principal works carried out to his designs: St. Botolph's Church and additions, Heene, St. Matthew's Church, restoration of St. Paul's Church, internal decorations and alterations to Christchurch, the Methodist Church, Holy Trinity Church spire, the Sussex-road and Little High-street Schools, Heene Church Schools, Holy Trinity Church Schools, together with alterations and additions to nearly all the Church schools of the town, the Worthing Post-Office, and new wing, Worthing Infirmary. He also developed and planned several estates at Broadwater and West Worthing, on which many beautifully-designed houses have been erected, and also many other works in the town, and county of Sussex. The deceased architect was borough surveyor during the year the borough was incorporated.

Sir Alfred East, R.A., P.R.B.A., the popular landscape artist, died on Sunday evening at his residence in Belsize Park, N.W., after an illness of several months. Alfred East was born at Kettering on December 15, 1849, and was thus in his sixty-fourth year. He began life in a Glasgow counting-house, but speedily quitted his desk to study in the Government School of Art in Glasgow, and to attend the night class conducted by Mr. Greenlees. Then he went to Paris, where he received further training at the Ecole des Beaux Arts under Tony Robert Fleury and W. Bouguereau. Alfred East had been a constant exhibitor in London, the provinces, and Paris since 1883, in which year three of his works were hung at the Royal Academy. His work done in Japan during his trip round the world in 1889 brought him wide recognition. He was elected an Associate of the Royal Academy in 1899, and attained full membership last July. A little over seven years ago, on the death of Sir Wyke Bayliss (who had succeeded Whistler in 1899), he was elected President of the Royal Society of British Artists. Since 1903 he had been an Hon. Associate of the Royal Institute of British Architects. His "Evening in the Cotswolds" is hung in the Carnegie Art Gallery at Pittsburg, his "London by Night" at the Milan Modern Gallery, his "Passing Storm" in the Luxembourg, his "Nene Valley" at Venice, and his "Haunt of Ancient Peace" at Buda-Pesth; but no work by him has been selected by the Chantrey Trustees. Birmingham Corporation Art Gallery has "Hayle from Lelant"; Leeds, "The Golden Valley"; Preston, "An Idyll of Spring"; Hull, "Evening in the Cotswolds"; Oldham, "Autumn in the Ouse Valley"; Manchester, "The Silent Somme" and "Autumn"; Liverpool, "Gibraltar from Algeciras"; and Leicester, "Autumn in the Valley of the Seine." On July 31 last a new gallery at Kettering, built from plans by Messrs. Gotch and Saunders, of that town, was opened by Earl Spencer, containing a selection of his pictures in oil and water colour, which he presented as a thank offering for recovery from his illness, two years ago. It will form a fitting memorial of one of our leading landscape painters.

Another landscapist and seascapist of distinction who has just passed away is Mr. James Campbell Noble, R.S.A., who died suddenly on Thursday last at Ledaig, Argyllshire, aged 67 years. He was placed, at the age of fifteen, in the office of Mr. J. O. Brown, lithographic draughtsman, in George-street, Edinburgh, where he worked for four years, chiefly upon architectural drawings. When his employer gave up business, he gained a scholarship in the school of the Scottish Board of Manufacturers at Edinburgh in 1862, and afterwards studied in that city under J. P. Chalmers, W. McTaggart, and Hugh Cameron. At first known by his idyllic studies of Scottish country life, his later works showed the rockbound coast of Berwickshire under glowing skies, the shipping on the Clyde and its estuary, and canal scenes in Holland. In 1879 he was elected an Associate of the Royal Scottish Academy, becoming a full Academician in 1892. For three years he served as President of the Scottish Arts Club.

The decease of Mr. William Gibson, surveyor to the Amble Urban District Council, has occurred with great suddenness. A meeting of the Amble Burial Board was in progress, when Mr. Gibson, who was its clerk, was seen to lean on the desk in front of him and lay his head on his hands. An official found him in a state of collapse. A doctor who was sent for ordered Mr. Gibson's immediate removal to his home, where he died a quarter of an hour later. Mr. Gibson had held public offices in Amble for very many years. He was born at Lowick, near Bamburgh, in 1836, and was first employed at Whittle Dene Waterworks. When this was completed he turned his attention to road-construction. When he removed to Amble—at that time a very small village—its government was in the hands of the Alnwick Rural Authority. Efforts were made by a few public-spirited men to secure the establishment of a local board. These were eventually successful, and Mr. Gibson not only conducted the first election held in Amble, but at the first meeting of the newly-constituted board he was appointed its clerk, a position he held for many years, and only relinquished it to take up the posts of sanitary inspector and surveyor under the same local authority. He resigned the post of sanitary inspector about three years ago, but held the surveyorship up to his death. His one aim was for the good sanitation and general cleanliness of the town. Mr. Gibson held many other public offices in the town and district.

We are sorry to hear that Mr. John Grover, head of the firm of Grover and Sons, Wilton Works, Islington, and formerly of Woodberry Down, N., died on Tuesday morning at his residence, Heather Bank, Hindhead, in his seventy-seventh year. Mr. Grover was the third generation of the well-known firm of builders and contractors founded by his grandfather. He entered into partnership with his father in the "fifties," and strenuously applied himself to the business until his retirement, some thirteen or fourteen years ago. Among the buildings which Mr. Grover erected in London were New Scotland Yard and factories for Messrs. Siemens in Woolwich. He had lived for many years at Hindhead, where he built three Congregational churches at his own cost, and also founded an electric light company. He is survived by his widow and a family, of whom the eldest son, Mr. Benjamin Grover, is the present head of the firm. The funeral takes place at Grayshott Church, near Hindhead, this (Friday) afternoon.

Mr. Richard Roberts, J.P., who was, with his brother, the late Mr. Lewis Roberts, engaged in the building trade in the Metropolis, and was one of the original members of the London County Council, was killed in a lift accident on Monday at the Hotel Metropole, Florence, where he had been staying with one of his sons. Mr. Roberts, who was shortsighted, was working the lift himself. At the second floor of the building he tried to leave the lift while it was moving; but he misjudged his step, and fell about 50ft. He was insensible when picked up, and on being taken to the nearest hospital was found to be dead. Mr. Roberts sat on the County Council, as a member for South Islington, from 1889 until 1904, when he and his colleague were defeated by Mr. G. Howell Williams (also a master builder) and by Mr. Dew.

Mr. William Chasen Ralph, architect, of Thornhill, Standish, formerly of Chester, left estate valued at £2,201.

The will of the late Mr. Henry Thompson, architect and surveyor, 1, Adelaide-terrace, Blackburn, has been proved at £11,232.

The Municipal Residential Training College which has been erected on the Cottingham-road, on the outskirts of Hull, at a cost of £49,000, has been opened.

The urban district council of Weston-super-Mare have decided that public abattoirs be constructed under the direction of the surveyor, at an estimated outlay of £11,000.

The Local Government Board have sanctioned the plans of the Nantwich Rural District Council for the construction of sewage-disposal works for Haslington at a cost of over £11,000.

Hartlepool Corporation has in contemplation a housing scheme, which is estimated to cost £40,000, and will take the place of a slum area between four and five acres in extent.

At Wakefield, on Monday, the re-modelled sewage-disposal works at Calder Vale were opened. The cost has been £30,000, bringing up the total cost of the undertaking to £106,000.

Owing to the present crowded condition of their institutions, the Lambeth Guardians have under consideration a report of a special sub-committee which suggests the erection of a new infirmary at Tulse-hill, at a cost of £200,000.

The members of the Yorkshire Archæological Society held their annual outing at Pontefract on Friday, and at the local dispensary inspected the ancient hermitage within the grounds. Afterwards, the party proceeded by motor char-a-bancs to Darrington, Womersley, and Campsall, and spent an interesting time examining the ancient parish churches in those villages.

The work of repairing the plaster above the clerestory of the six Norman bays within the nave of St. Albans Cathedral has now been completed, and the scaffolding removed. The defective condition of the plaster was first made manifest by the fall of a comparatively small portion of it upon the stalls, and when the workmen got to work upon it there was disclosed the necessity for much more extensive repairs than were at first anticipated.

The new ceiling at the Comédie Française, in Paris, was unveiled on Monday. The ceiling, which is the work of M. Albert Besnard, Director of the Academy of France at Rome, represents Tragedy and Comedy looking on at the eternal drama of life. Above them is Apollo in his car, accompanied by the Muses, who are in act of placing wreaths on the busts of four great masters of French dramatic art, Molière, Corneille, Racine, and Victor Hugo.

The chapel of the new King's College Hospital at Denmark-hill was dedicated on Friday by the Bishop of Southwark, chaplain of the hospital. The chapel, which is entered through a narthex behind the main staircase of the building, has seating accommodation for 250. The roof is supported on ferro-concrete piers. The organ, which was brought from the chapel of the old hospital in Portugal-street, Lincoln's Inn-fields, has been enlarged, and the stained-glass windows, the pulpit, and some of the seats have also been transferred from the old chapel. The picture by Juan Bautista Juanes (1523-1579), which was formerly in the old chapel at Portugal-street, has been placed in a recess at the north end of the new chapel.

A Local Government Board inquiry was held at Pebworth, Gloucestershire, on Friday, by Mr. E. Leonard, respecting an application from the rural district council for sanction to borrow £2,140 for the purchase of land and erection of ten cottages at Pebworth. Mr. E. Holloway, surveyor and sanitary inspector, said twenty-two of the cottages in the parish were in bad repair, and five totally unfit for habitation and three badly overcrowded; but closing orders were not issued, owing to the lack of accommodation. It was proposed to erect four cottages with two bedrooms at 3s. 6d. a week, and six with three bedrooms to let at 4s. a week, and there would be a deficiency on the scheme of £9 16s. per annum.

Currente Calamo.

With regard to the rebuilding of the Regent-street Quadrant we are enabled to state, thanks to official information just to hand, that "it is certain that casual erections of individual design to fit the ideas of shop holders, without forming part of any well conceived and matured scheme worthy of the position, will not be allowed in the Quadrant." Various unauthorised statements to the contrary have appeared. As a matter of fact designs for the completion of the Quadrant are at the present time under consideration by the Office of Works, Whitehall, but for the moment we are unable to say and probably it is not yet decided—what course will be taken with regard to them. Whatever is decided on, it is to be hoped and expected that the general lines of Norman Shaw's design will not suffer mutilation. Some minor revisions of his scheme may be demanded by changed circumstances and desirable in matters of detail. The conclusions arrived at in the Report of the Committee appointed by the Government, and recently published, were not too clearly stated; and it is satisfactory to be able to convey the intimation we have quoted above to all honestly interested in the architectural amenities of the Quadrant.

The Coventry City Council on Tuesday resolved to erect a new technical institute on Pool Meadow, at a cost not to exceed £30,000 with furnishing, the architect selected to receive an inclusive fee of £1,000. The proposed building is "to be of a utilitarian character, and the committee will consider no plans the total cost of which exceed £25,000, exclusive of furniture." Mr. Howells, "speaking as a practical builder," urged that £25,000 was too much to spend; he thought £17,000 enough. The recommendation was adopted with one dissentient. How the architect is to be selected does not yet appear. If the City of Coventry is resolved to begin by sweating the architect we might save it trouble by publishing the address of the gentleman who works on the cheap, as described by Mr. Thornely in his letter on another page this week.

Manchester will not enlarge its town-hall. When the council had the minutes of the committees before them on Wednesday, Councillor Derwent Simpson stated that the town-hall committee did not wish at present to go forward with the scheme; not because the necessity for increased municipal accommodation did not exist, for the council would have to come to the town-hall committee some time to solve the problem. He added that if the council would proceed to erect an art-gallery on the Piccadilly site, and use the present art-gallery for municipal purposes, it would give them the accommodation they required. Many of the critics had been in the position of a jury passing a verdict without hearing the evidence. There had been wild guesses at the cost, having as a basis the sum asked for the civic buildings; but the price asked for a particular part of a site was an unreliable basis on which to fix the price for the whole, especially as the proposal was to seek powers for a compulsory purchase, which meant arbitration in the absence of agreement. There was another suggestion—he did not know whether it was meant seriously or as a joke—that if the various committee rooms and offices in the town-hall were rearranged they would have enough room for ten or twenty years to come. Mr. Alderman Turnbull said he made that suggestion seriously, and adhered to it as a business proposition. Mr. Derwent Simpson said: "I simply deny it, and say it is all moonshine. No one who knew anything about the condition of the building would make such a suggestion."

Another instance of the hardship of the Undeveloped Land Tax is reported by the *Times* from Fareham. In 1911 Mr. F. J. Le Clercq of Middle Bowcr, Fareham, bought a piece of land which he immediately developed by building thereon. During June of this year the Inland Revenue authorities sent him a demand note for undeveloped land tax for four years, dated from 1909. He referred them to the previous owner for settlement, and, legal proceedings being subsequently threatened, he paid the amount claimed under protest. The Commissioners of Inland Revenue, in the course of a letter to Mr. Le Clercq, state they are advised "that where land has been sold, and the duty is not paid before the sale, the liability for the duty attaches to the new owner; this appears to be the plain meaning of the provision of Section 19 of the Act that duty is recoverable from the owner of the land for the time being. It also follows from this view that the owner for the time being is liable to the Crown for the duty, notwithstanding any contract to the contrary as expressly provided by the section. Any apportionment of the duty between a vendor and a purchaser is, therefore, a matter of private arrangement between them, and does not concern the Revenue, which has a right to recover the duty from the actual owner."

We rather [illegible] saying anything that may be attributed to interested motives; but we think there is a good deal in what our contemporary the *Surveyor* says, in its last issue, about the transformation of "Proceedings" of professional societies into "Journals," and accepting advertisements for such. It would seem that the Institution of Municipal and County Engineers contemplates such a change. The *Surveyor* urges, in what it believes to be the highest interests of the Institution, that the acceptance of advertisements for the periodical record of the deliberations of such an organisation is certain to lead to misinterpretation on the part of advertisers, may lead to imputations when surveyors recommend their authorities to avail themselves of the goods or services of such advertisers, and is lowering to the status and dignity of the profession. We do not say this *is* so; but we do know in other directions it is thought to be so by some advertisers who have resented pressure it is not easy to resist.

A postal referendum has been taken of 1,330 members and associate members of the Institution, with a view to eliciting their opinions regarding the policy of the new departure. The questions put were: (1) Are you in favour of the substitution of a periodical Journal for the annual volume of "Proceedings"? (2) Are you in favour of advertisements being included in your Institution's official publications? So far 640 replies have been received, of which 411 answered the first question in the negative and 188 in the affirmative. To the second question the negative replies were 391 and the affirmative 160, while 57 were neutral as regards one or the other, or both. Readers can draw their own inferences. We believe a similar result would follow a similar appeal to their members by some of the other professional societies, whose none too abundant resources are taxed by the loss sustained by "Journal" publishing, in spite of the contributions [illegible] out of [illegible].

We think those exhibitors who have written reminding us that Monday last was the "Press view" of the National Gas Exhibition, and enclosing particulars of their exhibit, had a right to expect we should have had the opportunity of drawing attention thereto. We can only say we had not. Not a single exhibit was on view, nor could any have been, in the unready state of the building. The building itself seems well calculated to facilitate an attractive display, thanks to the excellent arrangements of the consulting architects, Messrs. Septimus Warwick and H. Austen Hall, FF.R.I.B.A., of 13, South-square, Gray's Inn. In many respects as regards light and easy access, especially it is one of the best we have seen. The catalogue, of which we managed, after several attempts, to obtain a copy, is a voluminous and, in some respects, an interesting one. It is not, in our opinion, well arranged. If the "List of Manufacturers Contributing to the Funds of the Exhibition"—there are about 120 of these, and they are relegated to "Appendix G," the last five pages of the book—is that of the exhibitors, we think they deserved more prominence, as the interest of the public will mainly be in the exhibits, and not so pre-eminently in the long list of patrons, etc., which occupies the forefront of the volume.

"Increase in auctions," writes our ever-hopeful Saturday chronicler of the Estate Market. But we know those auctions, and have been there. They look like business, and the man in the rostrum is an expert at bustling a bit. It is often very well done indeed. The waiting company hear a desirable freehold property running up rapidly by imaginary bids from different parts of the room, and they feel like being at a good play. Then when some fixed figure has been reached the auctioneer smilingly says, "Not sold" after he has knocked it down with emphasis, and repeats his patter over the next lot. If an owner will pay the expense of bills, etc., he can have his auction, and certainly this gives him a better chance of selling privately afterwards. There are many such later sales nowadays, for our present public is nervous, even of auctions. Yet the realisations show that the Property Market, though bustling as if busy, is still rather stagnant. The total got in at the Mart during the present year by auction and privately is only now £6,251,754, as against £7,119,546 for the same period of 1912. Two well-established firms of auctioneers, one at the West End and one in the City, have just amalgamated, and we should say that this plan of combination, which may cut down expenses, is likely to be popular.

"London Street Names" should be a grand subject for anyone who wanted to make a book. The material is all in that one red and imposing volume, the Directory. It can be done historically or anecdotically, from an antiquarian, a literary, or an artistic point

of view. Now and then we do get a good new name, such as "Aldwych" or "Kingsway," but this is seldom. The British public will have names for its roads, and would not put up with numbers and the compass, as they do in America. Certainly, this habit does turn out some weird-looking addresses; but, when understood, it makes for clearness, and prevents repetition. Some builders have been quite brilliant in naming new streets on their land. Not only did they please a large suburban public by dubbing them "gardens" or "avenues," but they also found novelty in the names given. One we know used up all his favourite artists in this way, and ran gaily down from "Gainsborough" to "Landseer," and even "Doré," which often came to grief over the final accent. Another got in the meres and glens of his native county, and put up "Ambleside," "Thirlmere," "Gleneldon," and others. But when it comes to finding suitable titles for each of some hundreds of red-brick, stained-glass villas, the best thing to do is to consult the nearest asylum!

The Cambridge University Press will shortly publish the first part of a series of architectural and building-construction plates. The first part, now being published, consists of a set of thirty drawings for the use of students of the elementary stages of building-construction. The second part, to be published later, will consist of a similar number of drawings covering an advanced course in the subject. The author is Mr. Walter R. Jaggard, A.R.I.B.A. To meet the requirements of all classes of students, the plates will be published in two forms—e.g., the complete set of thirty drawings, with title-pages, list and description of plates, contained within a stiff-covered portfolio, at a net cost of six shillings; and in six sets of five plates each, within a thick paper portfolio, at a net cost of one shilling each set. The publication of these plates forms a part of a new series of textbooks on various technical subjects, to be published by the Cambridge University Press, under the general editorship of Mr. P. Abbott, B.A.

The New River, London's famous aqueduct, completed its 300 years of age on Monday. It was on September 29, 1613, that Sir Hugh Myddelton and his brother, Sir Thomas, rode with the Lord Mayor of London to what is now called Rosebery-avenue, Clerkenwell, and opened the river. It was in the reign of James I. that Sir Hugh persuaded the Common Council of London to give him permission to tap the waters of Chadwell Springs, in Hertfordshire, and bring a new water-supply to London. In celebration of this anniversary there has been on view at the Clerkenwell Public Library this week an exhibition of contemporary prints and books illustrating the enterprise. Sir Hugh was a goldsmith by trade. He spent nearly all his means on the scheme, and probably benefited his fellow-citizens and their descendants infinitely more than most subsequent philanthropists. To him, or whoever was responsible, we have always felt grateful for the lesson taught how engineering schemes of the sort might be made to enhance, and not spoil, the beauty of the country. Looking now in the early morning September sunlight across one of the North London water storages, inherited from the New River Company by the Metropolitan Water Board, and its lake-like surroundings, one reveres the memory of the man or men who knew better than to blast the charms of a lovely district by the perpetration of an ordinary "reservoir."

CHIPS.

The Dumfries Town Council have decided to erect a refuse destructor at a cost of about £4,000.

A Local Government Board inquiry was held at Liverpool on Friday into the application by the city council for sanction to borrow £4,100 to lay out the Rupert-lane barracks site as a public recreation-ground.

The Tendring Rural District Council, Essex, have engaged Messrs. Taylor and Wallin, civil engineers, of Newcastle-upon-Tyne and Birmingham, to advise them respecting the sewering and sewage-disposal of Great Bentley.

There has been a gratifying expansion in the limestone-mining industry of New South Wales, including the manufacture of lime and Portland cement, the output for 1912 being valued at £412,758, or £64,271 in excess of that of 1911.

The death of Mr. J. H. Rowe, for many years past the road surveyor for the eastern division of the St. Austell Rural District Council, occurred at his residence at Verecroft, Watering Hill, St. Austell, on Thursday evening in last week, after an illness of some weeks. He was 55 years of age.

Cattle lairages have been erected, at a cost of £6,000, between the railway station and the harbour at Greenock, by the Glasgow and South-Western Railway Company. The buildings consist of five sheds, each 170ft. by 51ft. The buildings are of brick, with timber roofs covered with felt, and they are lighted throughout by electricity.

The Lord Mayor and Sheriffs opened St. Andrew's Hospital, on the crest of Dollis Hill, Willesden, on Friday. The anonymous gift of a French Roman Catholic lady, her object is to provide for people who are unable to pay the fees charged at other hospitals and nursing-homes. The new building has accommodation for 100 patients, but at present only 50 beds are occupied, and has cost £40,000. Mr. Robert L. Curtis is the architect, and the builders were Messrs. Patman and Fotheringham.

The English church at Stockholm was consecrated on Sunday by the Bishop of London. The church was originally built in 1863 in another part of the town; but has been removed to the present site, and considerably enlarged. It is a Gothic structure in Swedish granite, with simple pointed arches, and a high steeple. The present site, granted by the Swedish authorities, is an open space near the Royal Park, Djurgarden, close to the British Legation in course of construction there.

During the past week Messrs. Armstrong, Whitworth, and Co., of the Elswick Works, Newcastle-on-Tyne, have commenced the initial stages of laying out the 900 acres of land which they have purchased at the village of Barlow, near Selby, for the development of their aviation machine business. About seventy workmen are employed by the contractors in clearing the extensive estate for road-making, and the work, which is under the care of the resident engineer, Mr. Jones, and Mr. Quartronos, of the Ordnance Department, is being pushed on with all speed.

The Earl of Ellesmere recently laid the foundation-stone of a new church in the district of Winton, in the parish of Worsley, near Manchester. Lord Ellesmere has given the site, and is building at his own expense the chancel, chapel, vestries, and tower—i.e., everything east of the chancel steps. The congregation are contributing the three bays of the nave, which it is proposed to erect at this time. The church will accommodate some 300 people at present, and, when the nave is extended, will seat 600. The architect is Mr. R. T. Beckett, of Chester, whose plans were selected in a competition adjudicated upon by Mr. Caroe.

The Glasgow city engineer has prepared plans for cottages and tenements on ground at Kennyhill which has been acquired for the purpose of erecting dwellings for the poorest classes. The plans provide for eight three-story tenements of two-apartment dwellings, and seven two-story blocks of three-apartment cottages. The estimated cost of the tenements, including site, is £9,270; and the cost of the cottages, inclusive of site, is estimated at £6,540. It is proposed to charge rents of £9 5s. and £6 10s. for the tenement dwellings, and £16 for the cottages; and the tenement scheme shows a deficiency of income of £25 10s. on the first year, while the cottage scheme is expected to clear expenses.

Engineering Notes.

PENKRIDGE. The completion of the erection of a new gas-holder at Penkridge Gasworks to cope with the increased demand for gas in the locality since the undertaking was acquired by the Stafford Corporation, was celebrated on Thursday in last week. The new gasholder consists of a steel tank and single lift, and has a capacity of 60,000 cubic feet of gas. The holder has been so designed that at a very small cost a further shell can be put between the existing lift and the tank, and thus double the capacity of the holder. The tank, which is built entirely above ground, has been erected on a foundation of 2ft. 6in. concrete spread over the whole area. The tank is constructed of five tiers of steel plates, and also has a steel-plate bottom, the thickness of the sides varying from ⅜in. up to ¼in. The bottom of the tank is constructed of rectangular plates ¼in. thick, laid on the top of the concrete foundation, and the sides of the tank are finished off with an angle curb. This tank is filled with water, and contains two million gallons. The thickness of the side sheeting and crown of the holder varies from 10 to 14 Birmingham gauge, and the crown is supported by sixteen main rafters and sixteen secondary rafters and four rows of angle purlins built up in umbrella form. The gasholder is guided by eight latticework standards, to which the channel iron guide-run is riveted. The top of each standard is connected by eight lattice girders forming one continuous tie. The holder has been designed and constructed by Messrs. C. and W. Walker, Ltd., Midland Ironworks, Donnington, under the supervision of the Stafford Gasworks engineer and manager, Mr. W. M. Valon. The preparation of the concrete foundations was executed by Messrs. F. Espley and Sons, of Stafford.

WALLSEND.—Good progress is being made with the construction of the new graving dock at Wallsend for Messrs. Swan, Hunter, and Wigham Richardson, Ltd. The work was commenced in March last, and the dock is to be completed by June of next year. The dock will be 490ft. in length, 70ft. wide at the entrance, and 27ft. 6in. in depth. About 70,000 square yards of earth have to be excavated, and the trenching, which represents about 26,000 square yards, has been completed. The work is being carried out by Messrs. R. McAlpine and Sons, Ltd., of Glasgow, the builders of the Hebburn dock. Mr. J. Conacher, M.I.C.E., is chief engineer for Messrs. McAlpine and Sons, Ltd., Mr. D. McKenzie manager, and Mr. E. N. James assistant engineer. Mr. T. Hanning, M.I.C.E., Newcastle, is consulting engineer, and Mr. Woodger resident engineer for Messrs. Swan, Hunter, and Wigham Richardson, Ltd. The work of lengthening No. 1 dock by 25ft. is to be proceeded with. The total length will then be about 500ft.

Mr. John Lund, for many years borough surveyor of Bedford, died on September 17, at the age of 85 years. Among those present at the funeral was Mr. N. Greenshields, the present borough surveyor.

Mr. Robert Tyler, who recently died at Addiscombe, was for over 35 years connected with a well-known firm of South London builders, but retired some seven years ago. Three and a half years since he was stricken with illness, and died after an attack of pneumonia.

Mr. H. R. Hooper, Local Government Board inspector, held an inquiry at the Leeds Town Hall, on Friday, into an application by the Leeds Corporation to borrow £168,500 for the development of their electricity undertaking. It was stated by the town clerk that of the sum applied for £28,000 was for machinery, £100,000 for mains, and £30,000 for sub-stations, transformers, etc.

The South-Eastern and Chatham Railway Company have decided to make an extension of their line, in order to open a new station at the Cliftonville end of Margate. The new section of the line will branch off at Margate East Station, and the Cliftonville Station will be situated at the corner of Northdown-avenue, close to the front. The construction of the new line will begin shortly.

PROFESSIONAL AND TRADE SOCIETIES.

GLASGOW BUILDING REGULATIONS. The opening meeting of the session in connection with the Architectural Craftsmen's Society was held last Friday night in the Technical College, Glasgow. Mr. T. G. Gilmour occupied the chair, and in his presidential address dealt with the by-laws in Glasgow under the Building Regulations Act, 1900. He discussed the various sections in detail, and pointed out where he thought improvements might be effected. He also referred to the omission of by-laws relating to skeleton steel structures and reinforced concrete buildings, and stated that the London County Council had admirable regulations in this respect which Glasgow might well on the first opportunity incorporate. The Dean of Guild Court had power over structural stability and sanitary matters relating to buildings, but he regretted the absence of control over the æsthetic effect of the plans presented to the court. Such control would greatly improve the architecture of the city. It was a common fallacy to suppose that a building, to possess the qualities of good architecture, should have an abundance of ornament applied to it.

MANCHESTER SOCIETY OF ARCHITECTS. The council have arranged the following syllabus of meetings for the session 1913-14: October 8 (Wednesday next), address by the president, John Brooke, F.R.I.B.A.; October 22, paper by A. E. Richardson on "The Development of the Theatre"; November 12, paper by Page L. Dickenson on "Dublin Architecture in the 18th Century"; November 26, paper by Lawrence Weaver on "Small Country Houses of To-Day"; December 10, paper by T. Fyfe on "Some Aspects of Greek Architecture"; January 14, 1914, paper by J. Beaumont, jun., on "Roman Architecture"; January 28, paper by Arthur Dixon; February 11, paper by L. B. Budden, M.A.; February 25, paper by W. G. Newton; March 11, paper by Grey Wornum; March 25, paper by J. Harvard Thomas (sculptor).

MUNICIPAL ENGINEERS AT TIVERTON.—The Institution of Municipal and County Engineers met at Tiverton on Saturday. A reception was given at the town-hall, when the Mayor of Tiverton (Mr. A. T. Gregory) welcomed the members and visitors on behalf of the town council and inhabitants. Mr. J. Siddalls, borough surveyor of Tiverton, read a paper on "Municipal Progress in Tiverton." Mr. Chapman said it was false economy and bad policy to carry on street improvements by loan instead of out of revenue. They would have to come to some method of treatment of road materials that would render them fit for the present traffic. In Somerset they were trying to do this with the assistance of the Road Board. Mr. Harpur, city engineer, Cardiff, in congratulating Tiverton in having a free water-supply, said that was due to the population not going ahead. In growing places the provision of water was a serious and expensive matter. Mr. S. Hutton, Exmouth, humorously remarked that he regarded a municipal debt as a sign of respectability. It showed that a town was progressing. If Tiverton's municipal debt had been larger, he thought the population would have been larger. Mr. H. A. Garrett, of Torquay, questioned whether Tiverton working-men would be able to pay the rents to be charged for the municipal cottages now in course of erection unless their wages were raised. Others who took part in the discussion included Messrs. T. Moulding, of Exeter; D. Edwards, of Taunton; James, of Sherborne; and F. Parr, of Bridgwater. Mr. Parr could not see why fourteen municipal cottages were wanted in a borough the size of Tiverton. In Bridgwater the housing problem had been rendered less acute by emigration to Canada. Mr. Siddalls, replying to the debate, said the Tiverton housing scheme was to be self-supporting, and the houses were to be built as required. Houses were badly wanted, and the effect of the scheme would be an increase of population. One of the applicants for a cottage was a young woman who had been waiting three years to get married. Thanks were accorded Mr. Siddalls for his paper, and to Mr. Holgate, who read a paper dealing with the town's sewage works. The members and visitors were subsequently entertained to lunch on the invitation of the mayor. After lunch visits were paid to the Tiverton waterworks and service reservoir; to the adit at Warnicombe and service reservoir there, and to the sewage disposal works.

ROYAL ARCHITECTURAL INSTITUTE OF CANADA.—The annual convention of the Royal Architectural Institute of Canada was held in Calgary, Alberta, on Monday and Tuesday, September 15 and 16, under the presidency of Mr. J. H. G. Russell, of Winnipeg. Addresses of welcome were delivered at the opening session by Mayor Sinnott and others prominent in the civic life of Calgary. The annual report disclosed a most satisfactory year's work, with the institution in good financial standing. Interesting papers were delivered by Professor Brydone-Jack, of the Civil Engineering Department of the University of Manitoba, and by Mr. F. Goldie Engholm, of Vancouver. The delegates were entertained at a smoker given by members of the Calgary Builders' Exchange. The annual dinner of the Institute, which was a most successful function, was held at the Alexandra Hotel. The arrangements reflected the greatest credit upon the local organisers, Messrs. L. M. Gotch and G. M. Laing.

THE SOCIETY OF ARCHITECTS.—The "house list" of nominations for officers and Council for the ensuing session of the Society, 1913-14, is as follows (the scrutineers' report will be made at the special general meeting on October 16):—President: Percy B. Tubbs, F.R.I.B.A., London. Vice-Presidents: R. Goulburn Lovell, A.R.I.B.A., Eastbourne; E. C. P. Monson, F.R.I.B.A., F.S.I., London. Honorary Secretary; Col. F. S. Leslie, R.E. (ret.), Woolwich. Honorary Treasurer: Chas. E. Jackson. Hon. Librarian: Henry Adams, M.Inst.C.E., London. Past Presidents: George E. Bond, J.P., Rochester; Ed. J. Hamilton, Brighton. Councillors: P. M. Beaumont, A.M.Inst.C.E., Maldon; James A. Bowden, London; Henry A. Cooper, Kettering; R. Cecil Davies, Chester; Geo. E. Dickens-Lewis, Shrewsbury; Harry Gill, Nottingham; Gilbert A. Harrison, Oxford; R. A. Jack, London; Herbert W. Matthews, London; Wm. H. May, Plymouth; George H. Paine, London; E. J. Partridge, F.S.I., Richmond; J. Herbert Pearson, London; Edwin J. Sadgrove, F.R.I.B.A., London; Chas. E. Salmon, Reigate; A. Alban H. Scott, M.R.San.Inst., London; Noel D. Sheffield, London; Alfred J. Taylor, Bath; B. R. Tucker, M.R.San.Inst., London; Thos. Wallis, London.

Lord Ribblesdale on Saturday opened a new elementary school erected at Gisburne by the West Riding County Council at a cost of £1,721.

The Emsworth Urban District Council have reappointed Mr H W Stringfellow as building and highway surveyor and inspector under the Petroleum Acts.

The partnership heretofore subsisting between Messrs R J H Leeson and N E Leeson, carrying on business as architects and surveyors at Pilgrim-street, Newcastle-upon-Tyne, under the style of Oliver Leeson and Sons, has been dissolved.

It is announced that Messrs Debenham, Tewson, Richardson, and Co., of 80, Cheapside, have amalgamated with Messrs. Chinnock, Clarke, and Chinnock, of 11, Waterloo-place, Pall Mall, and will practise under the title of Debenham, Tewson, and Chinnocks.

Forms and specifications have been issued by the Canadian Dominion Government for the construction of a public dock between Salisbury and Commercial drives in Vancouver, on Burrard Inlet. The dock will be of reinforced concrete, with a concrete superstructure, having a length of 800ft. and a width of 300ft. The public works department have just awarded the contract for the project to Messrs. Henry, McFee and McDonald, at the sum of 1,250,000dol.

COMPETITIONS.

BLACKBURN.—For the new fire-station at Blackburn the corporation have received eleven sets of plans, and the assessor, Mr. F. G. Briggs (of the firm of Messrs. Briggs, Wolstenholme, and Thornely, of Blackburn), has started on the work of adjudication. We shall, therefore, be shortly able to give the names and addresses of the premiated architects.

FOLKESTONE.—Mr. Edwin T. Hall, F.R.I.B.A., has been appointed assessor in the competition for a band pavilion, Folkestone, which is to be erected on the West Cliff. The cost, to include the approaches, is fixed at £20,000. November 29 is the date on which plans have to be sent in.

SUNDERLAND TRAINING COLLEGE.—At the Sunderland Education Committee's last meeting it was reported that the architect appointed by the President of the Royal Institute of British Architects to act as assessor of the training college designs had declined to undertake the work at the fee fixed by the town council. He desired that the fee should be in accordance with the Institute scale, which was over £70, whereas the council had offered twenty-five guineas. Alderman Bruce said the committee were anxious to compromise in the matter, and for that reason they asked for authority to negotiate. Councillor Lawson said it was a pity they ever approached the Royal Institute. It would be a lesson to them in the future, and they would be wise to get the Board of Education to deal with plans in the first instance on another occasion. The works committee were given power to effect the best terms possible.

TENDRING.—The Harwich Board of Guardians received twenty-seven competitive designs for the model pair of workmen's cottages asked for. The board referred three sets of plans to an assessor, who made his award upon their merits; but now the guardians have instructed the same expert to examine all the schemes submitted, and shortly his decision is expected.

At a special meeting of the Accrington Town Council on Friday night, it was announced that Mr. Tom Bullough had written offering 50 acres of land on the Springhill and Higher Antley estate for a public park and recreation-ground, in memory of his grandfather, Mr. James Bullough, the inventor of the weft fork. A statue of the inventor will be placed in the park. The council accepted the gift.

An extensive building programme is contemplated by the Liverpool education committee. The schemes embrace new schools in Wellington-road, Dovedale-road, and Townsend-lane, and important alterations and enlargement of the Windsor-street Wesleyan School. The construction of a large school in West Derby-street to take the place of St. Silas's School, which will be closed, has been checked by the building-trade dispute.

The new church hall, which has been built at Duffield, was formally dedicated on Wednesday week. The building, which cost £1,740 with furnishings, is built of red brick with stone facings, while the boundary walls are of local stone. The main hall seats about 150 people. A red brick dado surrounds the interior, and above this the walls are plaster, distempered cream. The interior woodwork is green stained and varnished. At one end of the hall is a large white screen of plaster built into the wall for the purpose of lantern lectures. Owing to the slope of the site, a basement hall is provided, seating 70 people. The architects were Messrs. Naylor and Sale, of Derby, and the builders were Messrs. Walker, of Wirksworth.

Three applications to borrow money were heard the other day by Mr. T. C. Elkin, M.Inst.C.E., on behalf of the Local Government Board, in the council-chamber, at the Audit House, Southampton. They were: £16,720 for purposes of the electricity undertaking, £4,400 for the erection of a refuse destructor at the Portwood Sewage Farm, and £3,500 for the purpose of the water undertaking, including the execution of works in the parish of Otterbourne, in the rural district of Hursley. Evidence in support of the applications was given by Mr. H. F. Street, borough electrical engineer, Mr. J. A. Crowther, borough engineer and Mr. E. C. Rodda, waterworks engineer.

ARCHÆOLOGICAL.

TINTERN ABBEY. The ninety first annual report of the Commissioners of Woods and Forests states that during the year 1912 13 works in connection with the west front and the great west window of Tintern Abbey have been completed. This work did not include what is needed to the north west angle of the building and the return on the inside which formed the connection with the north arcade before its fall. It is a matter which requires attention. On the south side of the nave centring and shoring in connection with the arcade and clerestory will shortly be finished. Some stonework has fallen during the operations, which have proved even more difficult and dangerous than had been expected. So far as can be ascertained, the state of the structure, especially the clerestory, is very bad indeed. The centre shore of the north transept arch has been wedged up in position, and minor works have been carried out.

A special committee of the Goole Urban Council recommend the erection of a three-storey building in Market-place, Goole, for municipal offices. The building is estimated to cost £8,000.

It is recommended by the baths committee of the Wandsworth Borough Council that the council should ask the Local Government Board to sanction a loan of £11,000 for the construction of public baths at Balham.

The partnership hitherto subsisting between T. W. N. Oliver and F. L. Oliver, carrying on business as railway contractors, at Victoria-street, Westminster, under the style of Thomas Oliver and Son, has been dissolved.

A new council-chamber and additional offices are about to be built at the rear of the municipal buildings, Malden, Surrey, for the urban district council. The contractors are Messrs. J. Smith and Sons, Limited, whose tender was accepted at £2,057. Twelve tenders were received, the highest being £2,687, and the lowest £1,984.

At the last meeting of the City Corporation, the Bridge House Estates Committee reported on the negotiations with the London County Council for the acquisition by them (for a fire-station) of a piece of vacant land at the corner of the southern approach to the Tower Bridge and Queen Elizabeth-street, for £6,000. The report was adopted.

Extensive works of protection of a part of the coast between Maryport and Silloth, facing the Solway Firth, are in progress at Dubmill Point, about 1¼ mile north of Allonby village. From plans by Mr. William Finch, the county surveyor of Cumberland, a concrete retaining wall and apron are being constructed at a cost of £8,300. Mr. James Dawson, of Cleator, is the contractor.

Sir Aurel Stein, K.C.I.E., superintendent of the Frontier Circle of the Archæological Survey of India, has been deputed by the Government of India, with the sanction of the Secretary of State, to resume his archæological and geographical explorations in Central Asia and westernmost China, in continuation of the work he carried out between 1906 and 1908. Sir Aurel Stein will again be accompanied by Rai Bahadur Lal Singh, who, with a second surveyor, will assist him in topographical work.

The county council of Fife at Cupar, on Friday, adopted the convener's committee's recommendation to purchase the farm of Glenlomond, near Mawcarse Junction, as a site for a sanatorium for the treatment of consumptives. The purchase price is £2,000, and Sir Ralph Anstruther, who presided, said about £1,000 will have to be spent on a road of access and £1,000 on water supply. Mr. Low, convener of the committee in charge of the preliminary arrangements, said the buildings will probably cost about £20,000. Messrs. Bruce and Proudfoot, Cupar, were appointed engineers, and Mr. A. C. Dewar, Leven, architect.

A new pupil and infant's school and manual training-room in Northfield-road, Netherton, the largest outlying ward of the borough of Dudley, was opened last week. The school is arranged to accommodate 460 scholars, exclusive of the manual training room. The amount of the contract was £5,450, inclusive of the manual training room, which, with its accessories, cost £1,360. The total cost of the remainder of the building has been £4,090, equivalent to £8 17s. 8d. per head. A special feature of the school is the quadrangle, which is provided so that one-half of the scholars can be taught in the open air in the summer.

Our Illustrations.

CHELSEA HOSPITAL FOR WOMEN NEW BUILDING.

This hospital, together with a nurses' home, will shortly be erected on a large site in Chelsea. The building will be built throughout of fire-resisting materials, all the floors being of reinforced concrete; the elevations will be simple in treatment, of red brick and Portland-stone dressings; the roofs, where not flat, will be covered with green slates. In the basement will be an out-patient department, with large waiting-hall, dispensary, etc., stores-receiving department, general and mattress stores, Jews' kitchen, etc., and boiler-room and coal store, also accommodation for three porters. The ground floor, a plan of which is given, is devoted to administrative offices, board-room, secretary's office, etc.; residential quarters for two medical officers, with sitting-room; the main kitchen block, with large scullery and larders; nurses' dining-room, and servants' hall adjacent; and in rear centre block, four single-bed wards for special cases, with operation-room, bath room, ward kitchen, etc. On first and second floors (which are similar) are the wards proper, a plan of first floor is given. Accommodation is provided on each floor for thirty-six beds, with all the usual adjuncts, a light iron balcony and escape-stairs being provided at each end of building. The first floor also has the principal theatre block, consisting of theatre, changing room, sterilising and wash-up rooms, anæsthetic room, surgeons' room (with bathroom attached), and nurses' room, also small gallery for visitors, entered direct from main corridor. The whole of this department will be arranged to satisfy the latest requirements of surgical science. The flat roof will be used as a roof-garden, available for convalescent patients, who will be taken up by the large lift in centre block. The finishings throughout will be the best possible to insure economy in working and upkeep. The architects for the hospital are Messrs. Keith D. Young and Alner W. Hall, of Southampton-street, Bloomsbury, W.C. The view reproduced was shown at the Royal Academy this year.

NO. LX. ST. JAMES'S STREET, S.W.

These premises were erected by the late Lord Furness for his offices, with large board-room, etc. A portion of the building is occupied by Messrs. Furness, Withy, and Co., while the upper floors are let off as high-class bachelor flats. Externally, the building is of Portland stone. The general contractors were Messrs. G. E. Wallis and Sons, of Broadmead Works, Maidstone, Kent, and the architect was Mr. Leonard Martin, F.R.I.B.A., of Seymour House, in Waterloo-place, Pall Mall, S.W. The drawing was shown in the Royal Academy Architectural Gallery this summer.

LVI. ST. JAMES'S STREET, S.W.

The late William Flockhart, F.R.I.B.A., architect, designed this interesting building, which has been completed under the supervision of his partner, Mr. L. Rome Guthrie, A.R.I.B.A. This structure consists of six floors and a basement. From basement to second floor it is in Cornish grey granite, the upper part being faced with Portland stone. The accommodation comprises a shop and basement; four residential flats on the first, second, third, and fourth floors; and caretaker's rooms on fifth floor; access to the residential flats being by separate entrance and staircase. The general contractors were Messrs. Wm. Johnson and Co., Ltd., of Wandsworth Common. This elevation was exhibited at the Royal Academy during the past season.

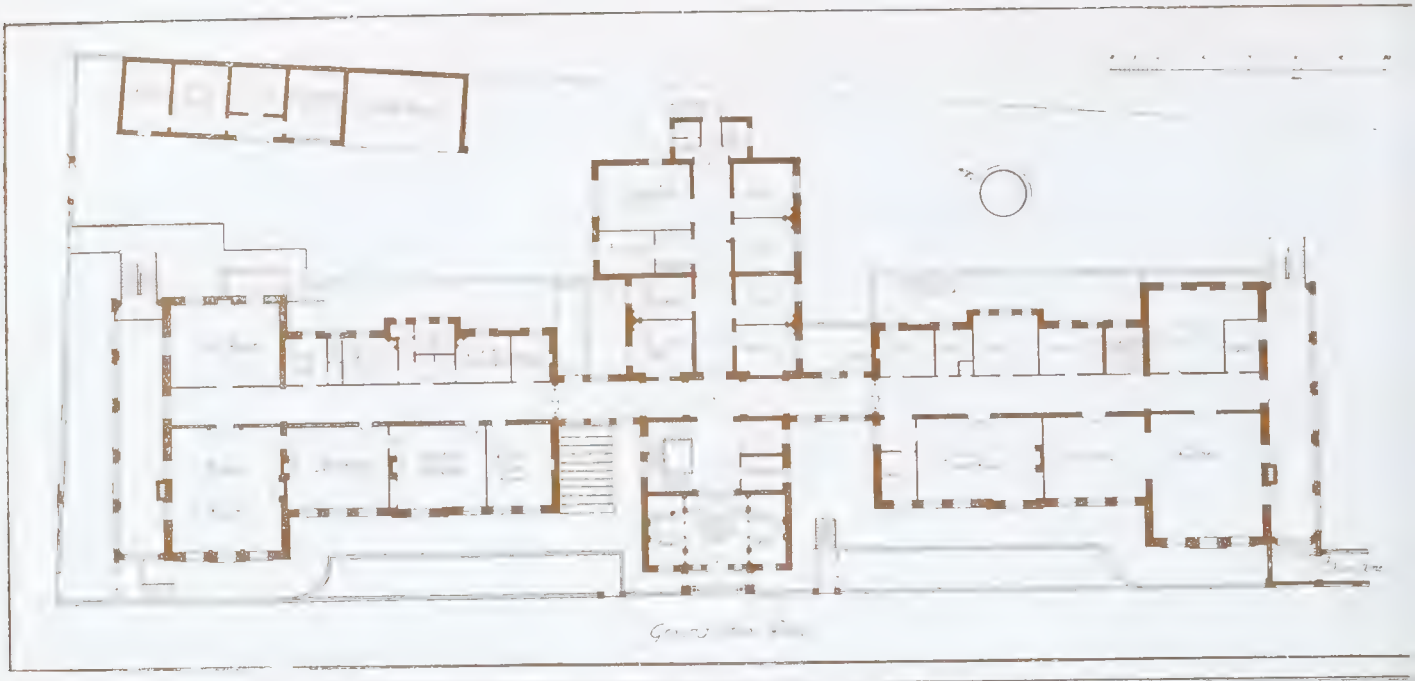
NATIONAL GOLD MEDAL SHADED STUDIES FROM THE NUDE BY MR. ARTHUR MASON.

These delicately-handled studies from the Life obtained the only Gold Medal awarded for this subject in the National Competition, 1913. Their author, Mr. Arthur Mason, is a student of the Margaret-street School of Art, Birmingham, and the examiners who made the award were Messrs. J. Seymour Lucas, R.A., John Byam Shaw, R.I., A.R.W.S., and S. J. Solomon, R.A. These drawings, of which we reproduce one sheet to-day, well deserved this distinction, especially as the general standard of merit in this class was much higher than last year. The good modelling which they display, and the freedom of Mr. Mason's draughtsmanship, contrast most unmistakably with the old stippling methods so long in vogue as the orthodox rule of the Science and Art Department. He has also avoided too much blackness in his shadows, and in the majority of his delineations a careful treatment of the extremities is shown. The second sheet will appear later.

CHARING CROSS STATION.

The new Charing Cross Station of the Underground lines on the Victoria Embankment is now making rapid strides towards completion. The designs have been prepared by Mr. H. W. Ford, architect, of Old Queen-street, Westminster, who for many years was the resident architect for the District Railway Company, and has carried out most of their reconstructions since the electrification of the railway. The new building, above the ground-level, is of Doric design, and will be faced entirely with Portland stone. The booking-hall, which forms the principal feature of the building, is 20ft. wide, and furnishes a suitable entrance to the combined railways underground, including the Bakerloo and Hampstead Tube systems. The roof will be supported on columns faced with Doulton's Carrara. The centre of the hall will be surmounted by a large leaded-glass dome. The booking-office front will be of polished oak with "antique" tile dado. On the eastern side of the station, where the exit-stairs come out on to the surface, there is provided a passageway which forms not only an exit, but a right of way connecting Villiers-street with the Victoria Embankment. From the District Railway platforms a short flight of steps will lead to moving staircases communicating with the Bakerloo and District Railway tubes below. Two escalators to each tube will be provided, and a communication passage also, below the District line, and, in addition to same, at the deeper level there will be a long corridor leading from the Hampstead Tube station to the present Bakerloo platform. The former line will be perfectly straight. The site of these extensions formed part of the bed of the river up to 1860, and, owing to much water being present in the Thames ballast, the execution of the work now done had to be performed in compressed air, and special linings were needed, both within and without the tubes, for the escalators, and also for the room required for the electric sub-stations. Duplication of the machinery for working has also been necessary. Extreme precautions had to be taken to prevent the clay bed of the river from being blown up by the great pressure of compressed air used in the tunnels. Massive piers of brickwork and masonry have been built on the eastern side of Hungerford Bridge up from the level of the Embankment foundations to carry any extension of the South-Eastern Railway high-level bridge in future, and where earth was removed, stone or brickwork was used to replace it. The loop line runs out under the river about 60ft. Mr. Ford also has in hand the reconstruction of the Temple Station, drawings of which we hope to be able to publish shortly, which is also to be entirely faced with stone, and which will make a very considerable improvement to the Victoria Embankment. The contractors for the Charing Cross Station are Messrs. Perry and Co. (Bow), Ltd., of Victoria-street, S.W.

The Robinson Memorial Mission-hall, at Mendlesham, Suffolk, was opened last week. It is a brick and slated building, with kitchen and porch, and is seated for 200 people. Mr. A. Baker, of Mendlesham, was the builder.





CHELSEA HOSPITAL FOR WOMEN: NEW BUILDING.—M





KEITH D. YOUNG, F.R.I.B.A., and A. W. HALL, A.R.I.B.A., Architects.



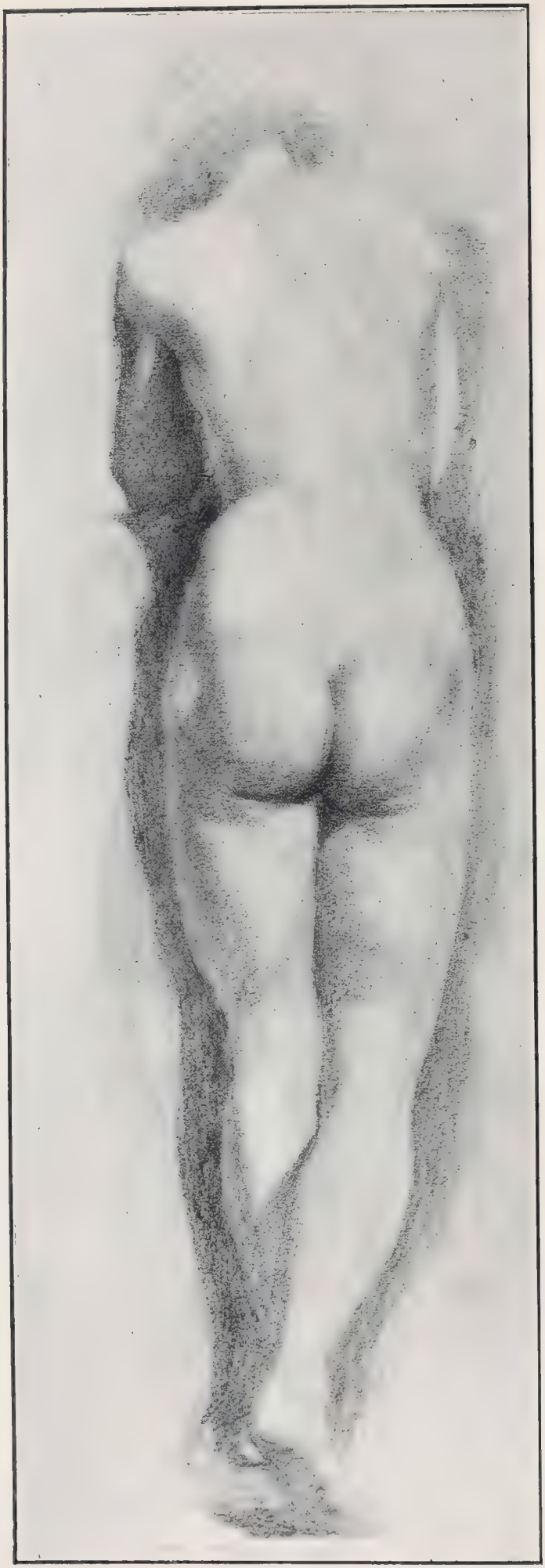


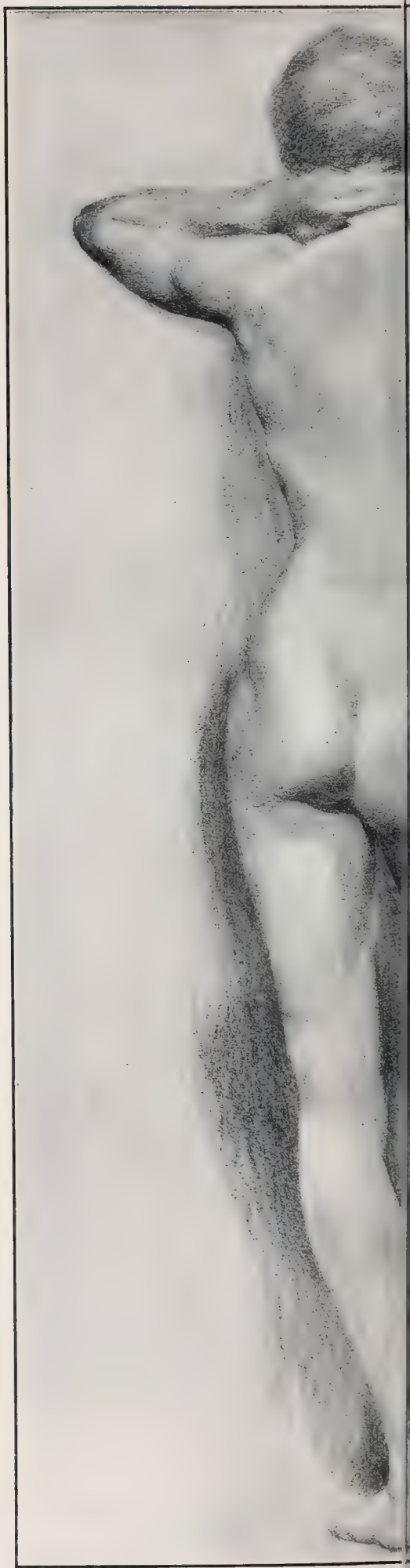


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Mr. Leonard Martin, F.R.I.B.A., Architect.

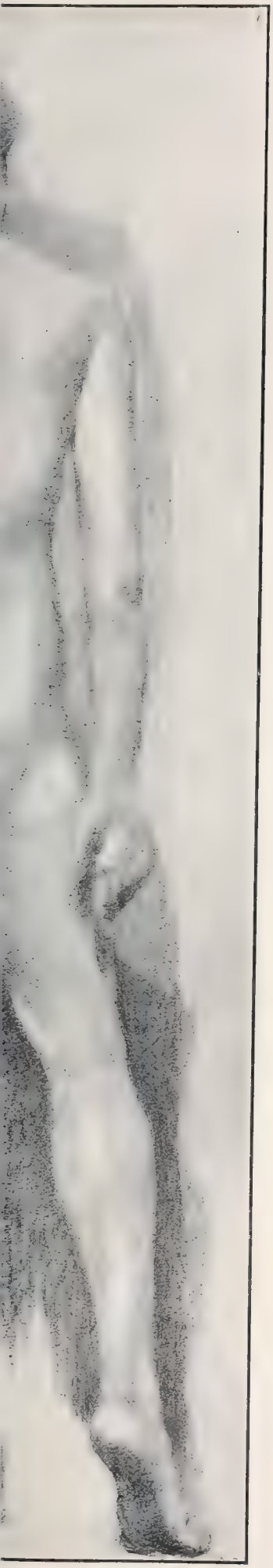


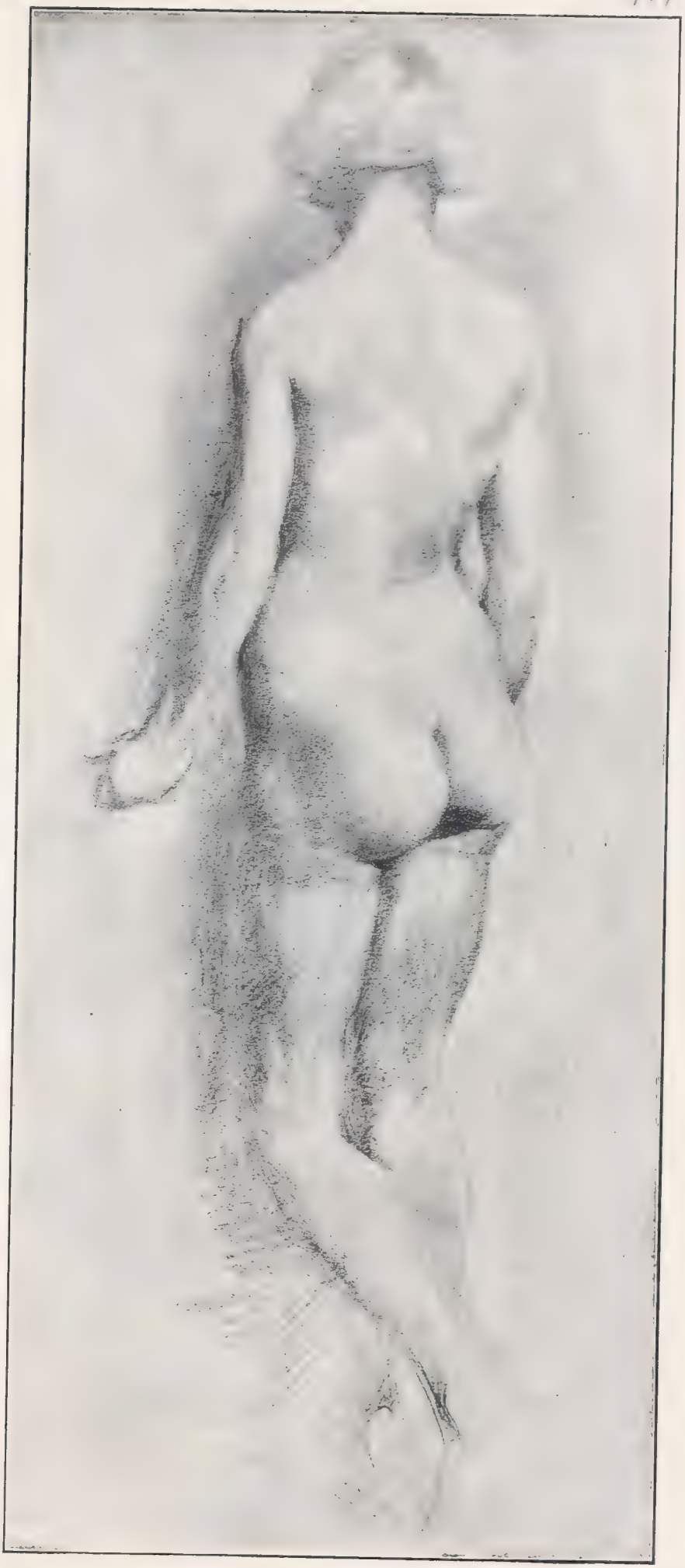
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Messrs. [illegible] and [illegible], Architects.



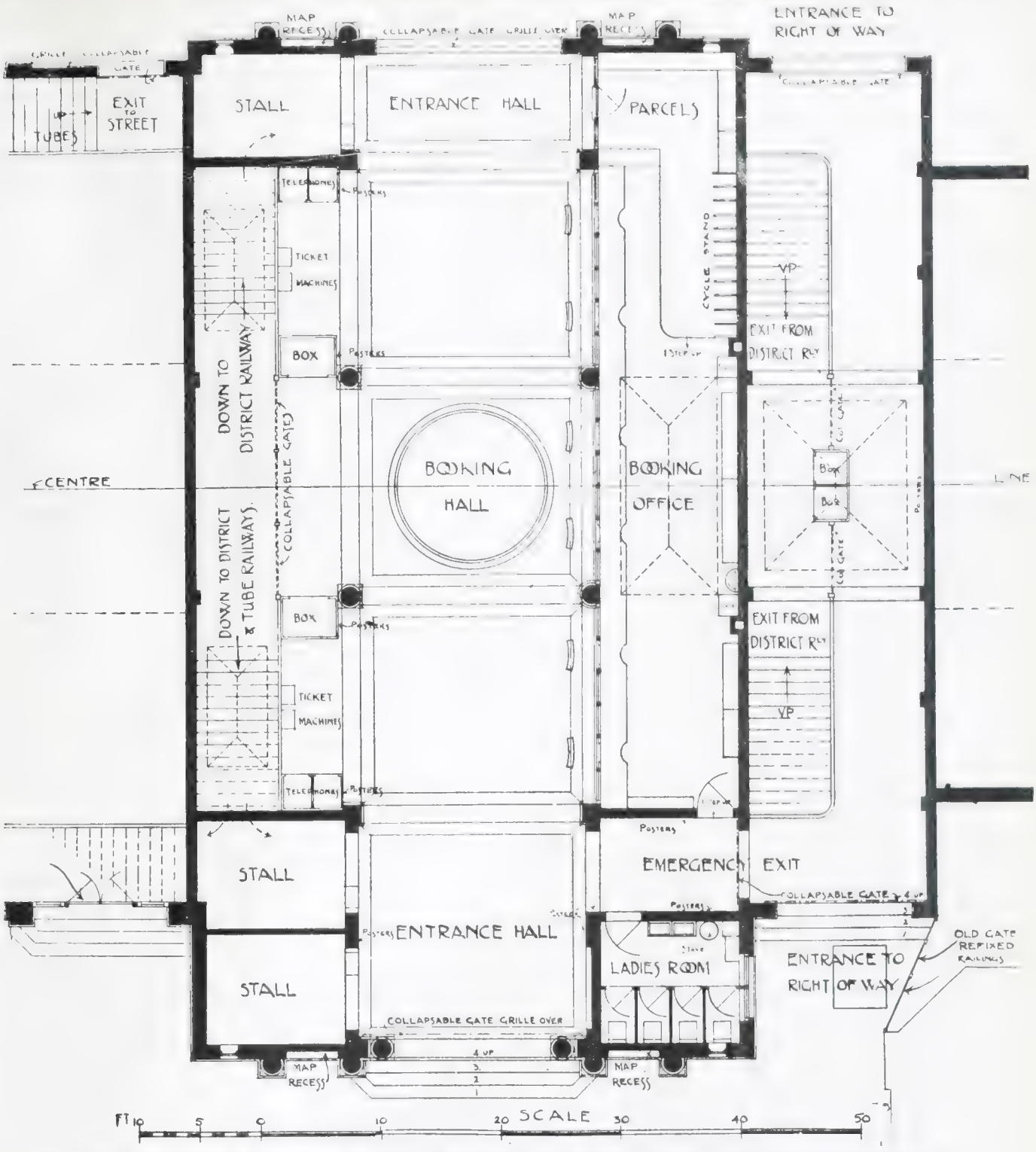


NATIONAL GOLD MEDAL PRIZE SHADED DRAWINGS





FIGURES FROM THE NUDE.—By Mr. ARTHUR MASON.



CHARING CROSS RAILWAY STATION, DISTRICT AND TUBE LINES, VICTORIA EMBANKMENT
Mr. H. W. Ford, Architect.

CHIPS.

The promoters of the Barnoldswick (near Colne, Lancs) to Gisburn Light Railway have received a letter from the Light Railway Commissioners sanctioning their scheme, subject to the withdrawal of the short junction-line described as No. 3.

Professor Ashley, Dean of the Faculty of Commerce of Birmingham University, recently opened a new County Mining Institute, which has been erected and equipped by the Staffordshire Education Committee at Chasetown, at a cost of £3,500. The institute is a two-story building, with basement, in which there is an electric installation for lighting the building, and also for driving a sirocco fan intended for testing air measurement. On the ground floor the rooms include a chemical laboratory, with accommodation for 24 students, and a lecture-hall of similar size. Upstairs there are a staff-room, chemical store-rooms, physics lecture-room and a surveying-room.

Extensive additions are to be made to the Newcastle-on-Tyne asylum at Coxlodge. The contractor is Mr. Pringle, of Gateshead, and the architect Mr. J. W. Dyson, of Blackett-street, Newcastle. The estimated cost is £21,000.

A Local Government Board inquiry has been held at Stanway, near Colchester, into an application of the Lexden and Winstree Rural District Council to be permitted to borrow £2,200 for water-supply works for the parish of Stanway. Mr. H. H. Sands, of the firm of Messrs. Sands and Walker, Milton-street, Nottingham, is the engineer.

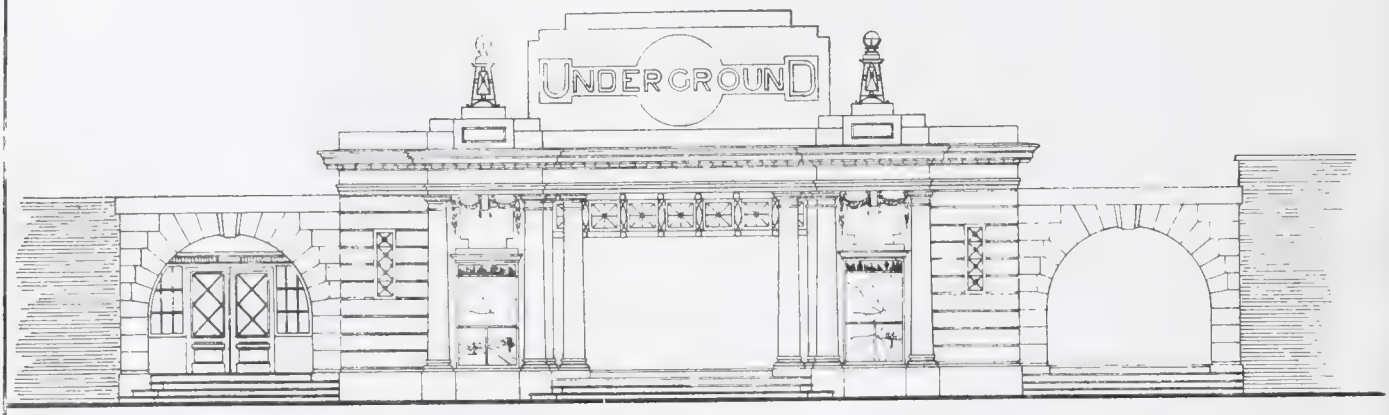
With the exception of the oak panelling, the new Gresham College, at the corner of Gresham and Basinghall-streets, is now practically complete. In all probability, the formal opening will take place during the first or second week of December. The joint architects are Mr. Dendy Watney, surveyor to the Mercers' Company, and Mr. Sydney Perks, F.S.A., the City surveyor.

The foundation-stone of the new church of St. Mary Magdalen, Winton, Lancs, has been formally laid. The architect is Mr. R. T. Beckett, of Chester, and the cost will be £6,500.

The Park Commission of San Francisco has instructed Mr. Lewis P. Hobart, architect, to prepare drawings for the proposed museum of sciences in Golden Gate Park, and plans are being made for the structure. The cost is estimated at 120,000dol. The building will have a steel frame and reinforced concrete walls, floors, and roof, with either a cut stone or terracotta exterior.

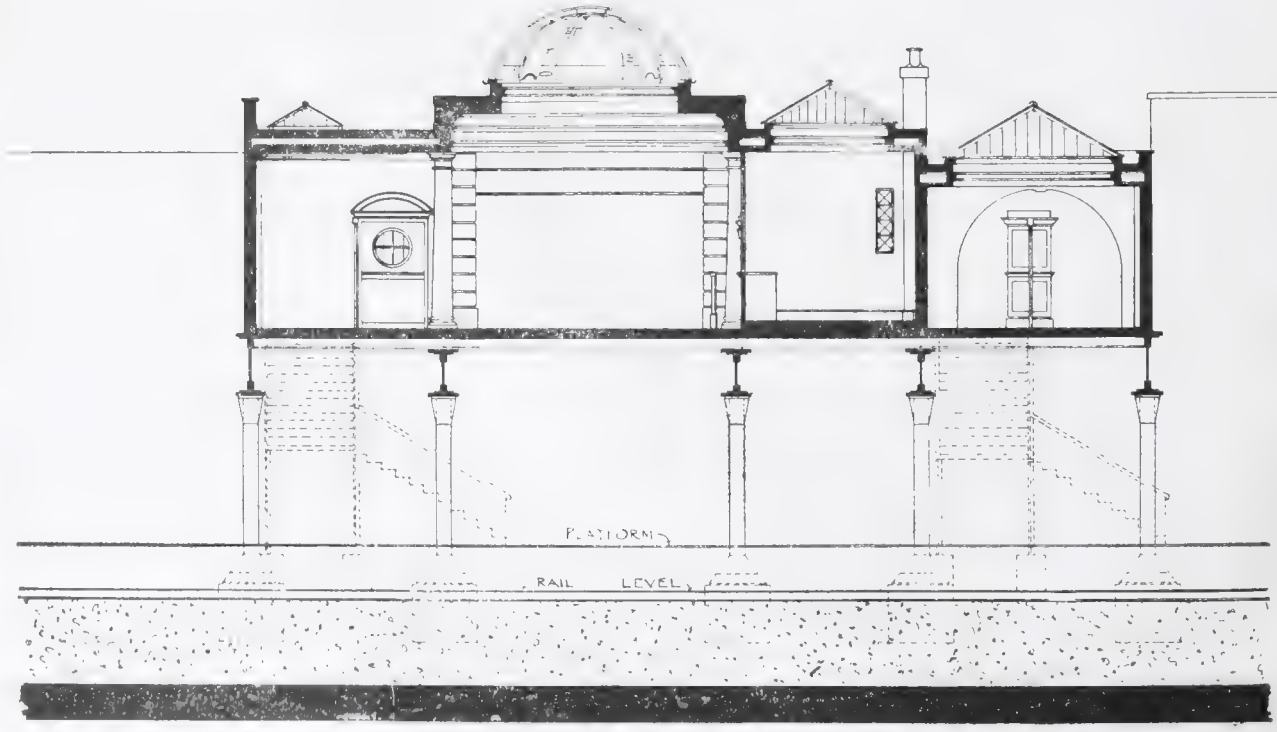
The gas committee of the Dundee Corporation have instructed their gas engineer and manager, Mr. Alex Yuill, to proceed with the preparation and specifications for the the installation of vertical retorts. Mr. Yuill recommends a plant suitable for a make of 2½ million cubic feet per twenty-four hours, including telpher arrangements for dealing with the coke, and estimated the cost at between £32,550 and £35,500.

DISTRICT RAILWAY CHA
RECONST



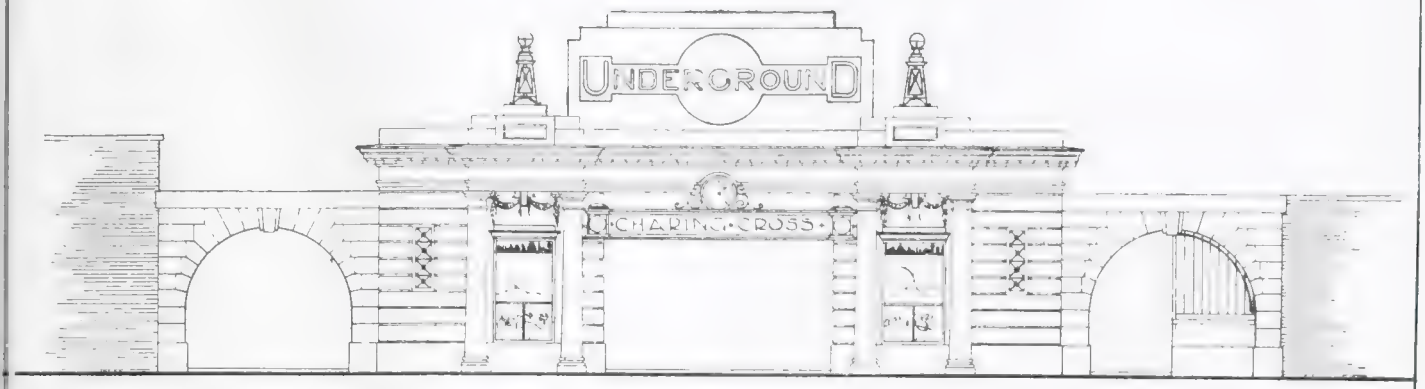
ELEVATION TO VICTORIA EMBANKMENT

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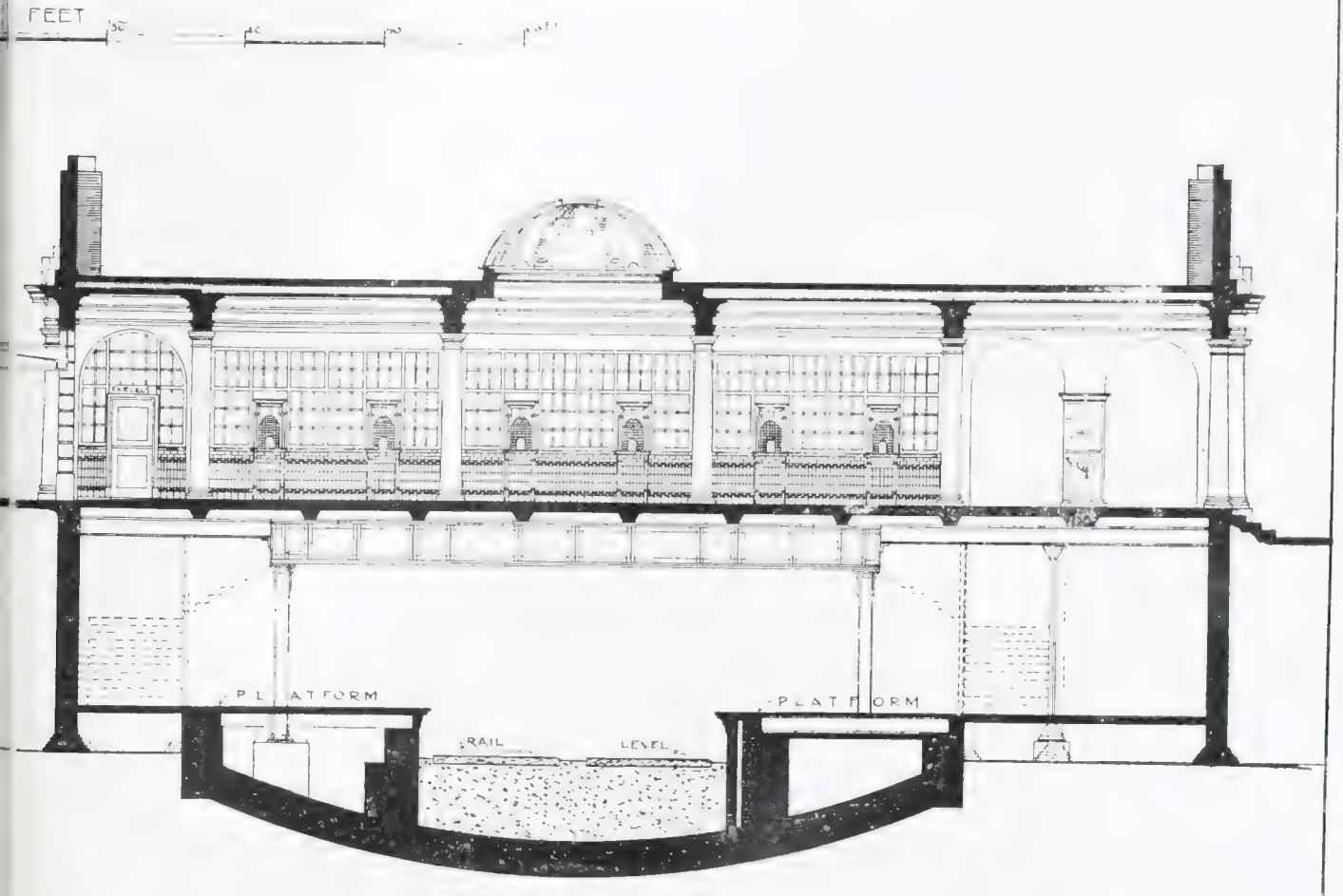


LONGITUDINAL SECTION

RING · CROSS · STATION :
RUCTION :



· ELEVATION to VILLIERS · STREET ·



CROSS SECTION

· H·W·FORD·ARCHITECT ·
· 11·OLD·QUEEN·STREET · ·
· WESTMINSTER · S·W · · ·

Building Intelligence.

CAMBERWELL, S.E. A new suite of galleries has been added to the Camberwell School of Art in Peckham road, and will be opened by the Right Hon. J. A. Pease, President of the Board of Education, on October 23. The rooms on the top floor will be devoted to dressmaking, dress design, embroidery, and the life class for drawing and painting. In one of the life rooms there is a bay window, where the model can be placed for open-air studies. Accommodation is provided for classes in modelling, decorative plasterwork, stone-carving, and architecture. Adjoining the architectural room is the library, and both can be turned into one large gallery for lectures and lantern exhibitions. On the ground floor will be housed the classes for pottery, cabinetmaking, jewelry, silver-smithing, enamelling, and the study of live animals, and here, also, is a small gymnasium. A new kitchen and dining-room are provided. An attractive bridge connects the old and the new buildings. The architect is Mr. W. E. Riley, superintending architect to the London County Council.

CAMBRIDGE.—Lord Moulton will lay, on Saturday, the 18th inst., the foundation-stone of additions which the governors of the Leys School, Cambridge, are making to that building. At present, the chapel, the great hall, and the north block form three sides of a quadrangle, leaving at present the fourth side—that parallel with the main road open. It is now proposed to complete the quadrangle by erecting on this open side an ornate gateway, which will become the main entrance of the school, with classrooms on either side, while on an upper floor will be a library and reading-room extending the whole length of the building, which will be surmounted by a turret and clock-tower. Sir Aston Webb, R.A., is the architect, and Messrs. George Corderoy and Co. are preparing the quantities and specification.

CLAPTON.—The Salvation Army Mothers' Hospital, Lower Clapton-road, N.E., will be opened by the Duchess of Argyll on October 18. The site has a frontage of 250ft. to Lower Clapton-road, and contains about 2¾ acres, with its axis east and west. The existing buildings on the frontage line have been adapted for the purposes of officials, waiting patients, and nurses' accommodation. New buildings have been erected in the rear, comprising ward blocks for fifty beds, in separate blocks of twelve beds each, and isolation block of two beds, together with administrative and laundry blocks. A unique feature is the distribution of the ward buildings on the site, each of one story, with north and south axis, whereby each block has ample provision of air and sunlight, and in favourable weather beds can be wheeled into the open. The scheme has been carried through under the expert advice of Dr. Donald Mackintosh, M.B., M.V.O., of Western Infirmary, Glasgow; and the building was designed and erected under the superintendence of Mr. Alex. Gordon, architect, F.S.I., 97, Queen Victoria-street, E.C. The work has been carried out by Mr. Coxhead, builder, Bulwer-road, Leytonstone, and Messrs. Dolby and Williamson, consulting engineers, of Westminster.

EXETER.—The bishop has laid the foundation-stone of a church institute for the parish of Holy Trinity in course of erection at Friar's Green, Holloway-street. The building, which is to be two stories high, will be of red brick, with Bath-stone dressings, and the roof is to be covered with Delabole slates. Owing to the site being "made ground," the foundations are carried out on the Kahn bar system of reinforced concrete. The accommodation on the ground floor consists of a hall 57ft. by 27ft., with stage, classroom, infants' room, kitchen, hall, vestibule, and lavatory. The height of the ground floor is 13ft. from floor to ceiling. The first floor comprises a second hall, with stage. On ground floor, class and caretakers' rooms and ladies' lavatories. The architect is Mr. J. A. Lucas, under whose direction the work is being carried out, the contractors being Messrs. G. Herbert and Sons, of Bartholomew-street West, whilst the heating and plumbing are being executed by Messrs. Godsland and Son, of South-street—all of Exeter.

NORTHWICH.—The Local Government Board have sanctioned the application by the urban council for a loan of £11,732 for the erection of public baths in Victoria-road. The scheme provides for the erection of a swimming pond 75ft. long by 30ft. wide, and varying in depth from 3ft. to 6ft. 6in.; 18 slipper baths (four first- and fourteen second-class), three waiting-rooms, an establishment laundry, boiler house, and coal store, superintendent's office, and ticket office, with the necessary entrance and staircases to the gallery.

ST. ALBANS.—A parish hall and Sunday-school are to be built for St. Paul's Parish, St. Albans, at the rear of the church, in Blandford-road. The plans, prepared by Mr. Percival Blow, of St. Albans, provide for a main hall 60ft. by 39ft.; in front is an infants' classroom 25½ft. by 16ft.; to the left of that a small hall 17ft. by 19ft.; and to the right three classrooms and a kitchen. Behind the main hall is a room for a men's club and vicar's room, and above them a room for a women's club. The buildings are to be in Gothic style, so as to harmonise with the church, and the roof will be of red tiles. Messrs. Miskin and Sons, of St. Albans, are the contractors.

SUNDERLAND.—Memorial stones were laid on Friday of the Jeffrey Memorial Hall, for the parish of Ven Bede, Sunderland. The building is being erected on a site in Monk street on a part of the old Monkwearmouth foundry site. A hall, 75ft. by 38ft., will be provided, giving accommodation for 450 to 500 persons. It will be used as a parochial hall and Sunday-school. At the rear of the hall there will be an institute. This will have girls' and women's rooms on the ground floor, and men's accommodation above. There will also be several smaller rooms. The buildings are to be of brick, with cast concrete dressings. The contractors are Messrs. Golding and Ward, of Villette-road, Sunderland, and the architects Messrs. Frank Caws, Steel, and Caws, of Sunderland. The estimated cost is £2,250.

VULCAN MOTOR WORKS, CROSSENS.—Contracts have just been let for further extensive additions to the Vulcan Motor Works, Crossens, near Southport. These additions will be used for the body building, upholstering, and painting departments. One portion is one story in height, similar to the existing works, and the other two stories, finished with a water-tower, covered with green slates. The two floors are connected by a large electric lift. A new heating chamber is also being provided, with a timber-drying room over. The walls facing roadway and railway will be faced with pressed bricks, with terracotta dressings, the whole in harmony with the existing buildings. The roofs are slated on one side, with patent glazing on the other. The roof principals are of steel, with steel stanchions and girders. The water-tower will rest on a grillage foundation, also the main steel stanchions. The offices, which have become inadequate in size owing to the increase in business, are also being extended at the same time. The whole of the buildings will be lighted by electric light, and heated by hot water on the low-pressure system. The contractors for the work are Messrs. Clough and Gaskell, of Wigan. The whole of the work is being carried out from the designs, and under the supervision of, Messrs. Prescott and Bold, architects, of Wigan and Southport. Mr. W. Hampson is acting as clerk of works.

At Garran parish church a new aisle has been dedicated by the Bishop of Derry and Raphoe and also a stained glass three-light window in the east wall of the chancel. The window represents the Baptism of Columba, the saint's landing at Iona, and his death. Mr. J. F. Fuller, F.S.A., of Great Brunswick-street, Dublin, was the architect.

Correspondence.

CHEAP DRAUGHTSMANSHIP.

To the Editor of the Building News.

Sir,—I wonder if a copy of the enclosed circular letter has yet reached you? If not, it seems to merit a corner in your paper, so long as the name is omitted. Please take particular note of the prices, including "effective little perspectives at 3d. each."

The free offer merits attention if only for the promise to supply an eighth scale drawing, 30in. by 22in. Assuming the proposed building only had a frontage of, say, 20ft., the generous donor seems letting himself in for difficulties!—I am, etc.,

H. L. Thornely.

11, The Crescent, Plymouth, Sept. 30.

Dear Sir,—I shall esteem it a favour if you will forward me the very roughest sketch of any building you think of erecting, as I shall be only too pleased to supply you with an ⅛-scale drawing 30in. by 22in., tracing, photo.-copy, and perspective free of charge. After this free trial, my charges for any further work are as follows: ⅛ scale drawings from rough sketches, 1s. (one shilling) each sheet, 30in. by 22in. Tracings on linen, 9d. (ninepence) per sheet, 30in. by 22in. Photo.-copies, black lines, 9d. (ninepence) each. Effective little perspectives, 3d. (threepence) each. Shall be exceeding obliged with a rough sketch, so as I may send you the free specimens, which will be quite suitable to supply to your client.—Yours faithfully,

HINDLEY SCHOOLS.

Sir,—In your edition of September 19, under the heading of "Competitions," you state that the New Council School at Hindley had been given to Mr. Herbert Wade, Blackpool, after competition. We may say, in fairness to other architects in Wigan, that there was *no competition*, the work being given to Mr. Wade without any competition whatever.—We are, etc.,

Prescott and Bold.

8, King-street, Wigan, Sept. 30.

THE PROTECTION OF CONCRETE SURFACES.

Sir,—In your journal of September 19, under the heading of "The Protection of Concrete Surfaces," mention is made of waterproofing compounds which are supplied to mix with concrete, and the writer makes use of the expression, "some of them, at any rate, are often failures." Further on he states that some have been found to "weaken the tensile strain of the concrete," and "few improve the appearance of the work," and that "with most, if not all, the protective effect deteriorates with age." I cannot write authoritatively for all waterproofing materials, but I certainly can furnish proofs that my powder "Pudlo" has not any of the defects mentioned.

"Pudlo" has been on the market for five years, and one of the first jobs done with "Pudlo" was the construction of the cement roofs of a row of workmen's dwellings for the Corporation of Swansea. This was done in 1908, and the roofs have since been absolutely damp-proof. Further, Faija analysed "Pudlo," and reports: "So far as we can see there is nothing in it which would be likely to react detrimentally on the cement after *prolonged* periods." (The italics are mine.)

With regard to the strength of "Pudlo" with cement, I should like to mention that I have had numerous tests made, not only at my own experimental works, but at the laboratories of Messrs. Faija and Kirkaldy, all of which show gains, not only for tensile strength, but for crushing strain. The latter test is very important. Before I had this compression test I was repeatedly told by concrete experts that if "Pudlo" would make cement waterproof and not deteriorate the crushing strain, there would be an enormous future for it.

Take the appearance of the work. "Pudlo" gives a much denser and stonelike appearance. The cement face more closely resembles stone, and one large firm of concreters use "Pudlo" solely to improve the appearance of the work. They have purchased many hundredweights for this

purpose. The arrises are more pronounced and as the wet cannot penetrate the cement never becomes sodden and dirty looking.

Finally, "Pudlo" has never failed when the work has been done according to our simple directions. "Pudlo" is being specified now by the leading architects of the United Kingdom for every class of cement work.—I am, etc.,

J. H. Keene Greenwood

King's Lynn

Intercommunication.

GUINEAS FOR BEST REPLIES.

We offer a prize of one guinea every week for what we deem the best reply to any query appearing in this column, which we deem worth insertion.

Replies must be sent in over real name and address. No others can receive a prize. The Editor's judgment is final.

This competition is restricted to buyers of the paper, and with each reply a coupon cut from our front page must be enclosed.

Any number of replies can be sent, but a coupon of this date must accompany each.

All else being equal, first replies will stand the best chance. We emphasise this, as some correspondents ignore the fact that querists want terse facts, not long essays. Any necessary illustrations must be in line only—no tints or washes—and about twice the size they are meant to be reproduced. We are unable to avail ourselves of replies that contain illustrations unless we receive them by first post on Tuesday.

The right to withhold the prize in the event of no reply being received worthy of it is reserved by the Editor, who also claims the right to publish any other replies he may deem useful.

QUESTIONS.

(13132.) SEWAGE DISPOSAL.—I have a septic tank in the garden in front of my house—size of tank 8ft. by 4ft. by 3ft.; population 10. The tank discharges into a pit about 4ft. by 4ft. by 4ft., sunk in gravelly soil, and is lined with dry walling. This arrangement has worked well for the last nine or ten years, but of late the filter pit has overflowed. On opening same, I found it about half full of sludge, which was removed about three months ago. The pit, however, is again overflowing, which points to the fact of the ground being water-logged. The septic tank has not been opened for eleven years, the effluent is clear, and I therefore cannot account for the sludge in the pit needing same. I may say that, owing to the proximity of the house, I want to avoid the usual filters for treating the effluent from the septic tank, as there is generally smell arising from same. Only practical advice is solicited—not that of readers who know everything from books.—Excalibur.

The Plymouth borough surveyor, Mr. James Paton, submitted on Friday a scheme to the Hoe, parks, and cemetery committee for laying out the Tothill Recreation-ground, an area of 15½ acres at an estimated cost of £10,491. Consideration of the matter was deferred until after November.

The chairman (Lord Barnard) and members of the Agricultural Committee of Armstrong College, Newcastle, with others interested in forestry, inspected the work in progress at Chopwell Woods, on Tuesday, accompanied by Mr. Runciman, as Chief Commissioner of Woods and Forests. The inspection of the woods was under the guidance of the adviser in forestry, Mr. John F. Annand, M.Sc., and the assistant lecturer in Forestry, Mr. J. McLaren.

The new buildings of Emmanuel College, Cambridge, are rapidly being completed. The last of the old houses in Emmanuel-street are being pulled down this week. Some 28 sets of rooms are to be occupied this coming term in the new buildings, but the whole block will not be ready for occupation before the end of the May term. Progress will be made in the coming session with the new Chesbunt College at Cambridge. St. Catharine's College also is contemplating the construction of an additional block of buildings.

The Ipswich Corporation at their last meeting decided to purchase for the provision of baths and other purposes, the premises for some years occupied by a dealer in antique furniture, standing on the angle between London-road and Clarkson-street, and facing the wide space known as Barrack-corner. The corporation also have under consideration a scheme for purchasing property in Northgate-street, for many years occupied as a boys' school, and building thereon a new central public library. The existing free library in High-street, built in 1887, will be dismantled, and thrown into the municipal museum buildings adjoining.

WATER SUPPLY AND SANITARY MATTERS.

BEESTON SEWERAGE.—The Local Government Board inquiry into the application of the Beeston Urban District Council to borrow the sum of £25,000 for sewerage and sewage disposal works was held at Beeston last week by Mr. R. G. Hetherington, the Local Government Board inspector. An application has been granted requiring the council to take immediate steps to prevent the sewage backing up the sewers and damaging property, the council had instructed Mr. W. H. Radford, C.E., of Nottingham, to prepare a scheme. The main outfall sewer will be relaid with improved gradient, and several new sewers constructed. A new brick storage culvert will also be constructed at the new pumping-station, giving a total storage capacity of 192,000 gallons. The present pumping-station is too near the population, and will be disused. At the proposed new pumping-station the sewage will be raised from a sump by two 6in. and two 8in. centrifugal pumps, according to requirements, the total capacity of the pumps being 160,000 gallons an hour, which equals more than fourteen times the dry weather flow. A two-cell destructor would be installed to burn the night-soil and dry ash refuse and provide steam for pumping the sewage and make clinker for the filter-beds. After the sewage has been screened, it would be pumped into three large circular Dortmund tanks, of special design, having a very long length of weir, to obtain quiescence, these tanks holding 301,000 gallons. The total cost of the works is estimated at £22,000, the remainder of the loan would be for the purchase of the disposal site, engineer's fees, legal expenses, etc.

BUNGAY WATERWORKS. The Bungay Urban District Council have had under consideration the question of a water supply for their district for a considerable time, and at the last meeting of the council decided to engage the services of Messrs. Taylor and Wallin, civil engineers, of Newcastle-on-Tyne and Birmingham, to examine and report upon the matter in detail. The water will probably be obtained from a deep borehole.

HITCHIN. It has been decided by the urban district council to abolish the sewage-disposal works at the southern end of the district, and to enlarge those in the northern district. Two new outfall sewers will be provided, one for the northern portion of the town, to replace the existing inadequate sewer, and the other for the southern portion of the town. Both these sewers will deliver by gravitation to the site of the existing northern works. The sewage from the low-level or southern district sewer will be dealt with by adapting and enlarging the existing tanks and filters, and that from the high-level sewer, or the northern district, will be treated in new works consisting of detritus and screening-chambers, sedimentation-tanks, percolating bacteria-beds, and humus-pits. The estimated outlay on the scheme is £14,000, and the main contract has been taken by Messrs. Inns and Co., of Stevenage, for £13,167. The engineers, Mr. E. J. Silcock, M.I.C.E., of Westminster.

MANCHESTER SEWERAGE WORKS. The Manchester Rivers Committee will submit a report to the city council at its next meeting on the extension of the sewerage works at Davyhulme, at an estimated cost of £189,000. Provision, they say, has to be made at Davyhulme at present for fully treating a total of 27,157,000 gallons per twenty-four hours, or forty-five gallons per head per day of the present population; 24,150,000 gallons can be treated on the present forty-six acres of primary beds. If the 26½ acres of storm beds are made equal in depth to the primary beds, as can be readily done, they can deal with a total volume of 14,043,750 gallons, making a total amount dealt with by single contact of 38,193,750 gallons, or a dry-weather flow of two-thirds of this, approximately 7,351,500 gallons more than the present dry-weather flow. The problem resolves itself into finding ways and means for the final treatment of the above-mentioned volume of primary effluent, or a daily dry-weather flow of 25,469,000 gallons from a population of nearly 850,000 persons. The report gives details of the various methods of dealing with the sewage, and the recommendations are summarised as follows. The Davyhulme works must be brought more into line with the Local Government Board's requirements, in order that they may be capable of treating the present dry-weather flow, their present capability being a dry-weather flow of sixteen million gallons for first and second contact treatment. If the above course is adopted, and the present storm beds used as primary beds by the obliteration of the to the present beds, and the effluent raised into the existing carrier, then a total dry-weather flow equal to twenty-five million gallons can receive primary treatment. In order that the above dry-weather flow may receive secondary treatment, it will be advisable to convert the whole of the Bent Lanes area into percolating fixed spray filters, and to construct humus tanks at the outlet into the Manchester Ship Canal. The finance committee offer no objection to the proposal to obtain borrowing powers for carrying out this work.

WAKEFIELD.—The corporation have invited tenders for providing and laying an 18in. cast-iron water-main, seven miles in length, from New Scarborough to Waindyke, through the urban districts of Standeford, Alverthorpe, and Normanton to Wrenthorpe Bridge. Steel pipes will be used where the main crosses the River Calder, the Aire and Calder Canal, and some streams. The pipe over the River Calder will be carried across the existing toll-bridge owned by the Aire and Calder Navigation, and a light steel bridge of 90ft. span will be thrown across the Aire and Calder Canal.

The municipal harbour and depots, for canal and river traffic in the east of Berlin, constructed at a cost of £680,000 sterling, were inaugurated on Sunday.

Mr. W. Beard has been appointed by the Epsom Rural District Council as chief sanitary inspector and surveyor for the whole district, at a salary of £220 a year.

Mr. W. D. Caröe, F.S.A., F.R.I.B.A., has been elected Master of the Plumbers' Company in succession to Alderman Sir T. Vezey Strong. The new Wardens are Dr. E. J. Waldo (City coroner) and Mr. Edmund Knight.

The Local Government Board have sanctioned the scheme proposed by the Croydon Corporation for widening the bridge at West Croydon carrying the London to Brighton thoroughfare over the Brighton Railway Company's lines.

The council of the University of Sheffield have decided to proceed with the extensions of the arts, pure science, and chemical departments, which may eventually involve an expenditure of about £50,000. The first portion of the work will cost about £18,000.

The reopening took place last week of the parish church of Drumachose, County Derry, after restoration of the chancel and the construction in Bath stone, of a new chancel arch. Mr. R. E. Buchanan, of Londonderry, was the architect, and Messrs. Purdy and Millard, of Belfast, have executed the carving both in stone and oak.

The urban district council of Broadstairs decided to carry out an extensive widening of the Ramsgate-road, in continuation of an improvement effected by Mr. Yarrow on his own land. The surveyor, Mr. H. Hurd, was directed to prepare plans for the widening of the thoroughfare to a length of 871 by an average increase of 11ft. 4in.

The new county schools at Tottenham were on Saturday declared open by Mr. J. A. Pease, Minister for Education. The Middlesex County Council and the Tottenham Urban District Council have built the new school in High-street, leaving the Polytechnic free for technical instruction. The two authorities divide the cost of the school, which, including land, has been about £21,547.

Several new pictures have just been added to the permanent collection in the Manchester Art Gallery. They include a small portrait of the Rev. F. H. S. Pendleton, with violin, by Ford Madox Brown; "Jean, Jeanne, and Jeannette," by the late Stanhope Forbes; a portrait of John Horne Tooke, by the 18th-century artist Richard Brompton; "The Smithy," by Eugene Isabey; and a church and river lock by B. W. Leader.

In a new process for wood impregnation described by a Canadian engineer diatomaceous earth, a silicious material, is finely ground until 92 per cent. will pass through a 200-mesh screen. This is mixed with melted paraffin and naphthalene, and timbers immersed in this mixture for four hours by open-vat process. Treated wood is said to resist marine borers as well as decay. The cost of material is said to be about 5 cents a cubic foot.

The Plymouth Water Committee received reports from Mr. Howarth, C.E., the water engineer, and Mr. Ellis, the town clerk, on the prospective water requirements of the borough, and the best means of extending the supply from Burrator to Roborough, and the committee resolved that the time had arrived when steps should be taken to supplement the existing means of conveying water from Burrator to Roborough by means of a second conduit, and instructed the sub-committee to report as to the best method of achieving that object.

LEGAL INTELLIGENCE.

FATALITY AT BUCKINGHAM PALACE A fatal accident at Buckingham Palace on Tuesday week to Charles Clark, aged forty-one, of Millman-square, Islington, employed by Messrs. Leslie, contractors, was the subject of an inquest held at Westminster on Friday. Edward Stephen Taylor, a plumber's mate, stated that he was engaged with George Burgess and Charles Clark in removing a piece of lead from a van to the Royal mews. The job was not connected with the refacing of the Palace, but was part of the ordinary work. The piece of lead weighed four or five cwt. Witness and Clark were picking it up to put it on a truck, when Clark slipped and fell, and the lead fell on him. He was taken to St. George's Hospital, but was dead on arriving there. Mr. Bright (for Messrs. Leslie) expressed sympathy with the relatives, and said that after the accident a telegram was sent to the King, who replied expressing his sympathy and regret. —A verdict of "Accidental Death" was returned.

FATAL SCAFFOLD ACCIDENT. — The Deputy Coroner investigated at Leeds, on Friday, the death of Albert Green, aged forty years, a painter, of Hertfield-place, who had died in the infirmary from injuries sustained by a fall from a scaffold, on which he was painting, at the Steel Wheel Works at Newlay. Witnesses stated that he was sitting astride a plank, but that he changed his position, over-balanced, and fell a distance of 30ft. The Coroner remarked that if the plank had been supported by two ropes—one at either end—instead of by one in the middle only, the accident would not have occurred. It was obvious that the removal of the balance of weight, in one direction or the other, would cause the plank to tip up. The jury returned a verdict of "Accidental Death," but added a rider that, in their opinion, this kind of scaffold should not be used in future. The foreman in charge of the work said he would undertake to see to that.

ASPHALT MANUFACTURER'S AFFAIRS.—Edwin Bradshaw, 4, Upper Byron-place, Clifton, asphalt manufacturer, lately trading as Bradshaw and Son, Chapel-street, Bristol, Beaufort Quarries, Chepstow, and Bairn Head, Exeter. The receiving order is dated September 9. The gross liabilities are returned at £4,650, of which £2,967 are expected to rank. The net assets are £3,066, and the deficiency £29. The Official receiver states that large claims are being made against the estate in respect of certain covenants. The debtor, who is sixty-five years of age, is suffering from heart affection. In the special circumstances of the case a special manager has been appointed to carry on the debtor's business. The debtor was formally adjudicated a bankrupt at Bristol on the 24th ult. Mr. Arthur Collins was appointed trustee, and a committee of three elected.

Mr. W. N. Rule, chairman of the Sheerness Urban District Council, on Saturday cut the first sod in the excavation on Southdown Hill, Sheerness East, of a reservoir to store a million gallons of water. The scheme will cost £25,000

The contract for the excavation of the Hudson's Bay Company's department store at Victoria, British Columbia, has been awarded to Messrs. Luney Bros., of that city, and it is expected that the contract for the construction of the building itself will be made while the excavation is in progress. The project involves the expenditure of 450,000dol., exclusive of the site.

A committee has been formed for the purpose of arranging for the erection of a memorial to the late Commander Edward John Smith, R.N.R., the captain of the Titanic. It is proposed that it should take the twofold form of a monument, with inset medallion, at Lichfield, in the county in which he was born, and of a stained-glass window and tablet in the new cathedral at Liverpool.

To encourage excellence of workmanship by students in plumbing classes in the North of England, Mr. J. B. Wilkinson, of Sunderland, has presented to the district council a merit shield for competition. The shield has been designed and executed by Mr. R. Appleby Miller, of Newcastle, and is modelled and cast in bronze, with enamelled coats of arms fixed on shield, and ten silver tablets for names of successful classes, finished with oak background.

The Hendon Urban District Council have decided to appoint an assistant engineer to Mr. S. Slater Grimley, it having been pointed out that works involving an expenditure of nearly one quarter of a million pounds are contemplated. These include the erection of a dust destructor, an extension of the sewage works, and wood paving in the main roads from Golder's-green to Edgware-road, necessitated by the largely- increased motor omnibus traffic.

Our Office Table.

Widespread gratification will be felt by his fellow-members in the profession at the well-earned baronetcy conferred upon Sir David Burnett, F.S.I., the Lord Mayor, on his retirement from office. Sir David, who became alderman for Candlewick Ward in 1902, and was knighted in 1908, is a member of the firm of Messrs. Edwin Fox, Bousfield, Burnett, and Baddeley, the well known surveyors. He was sheriff in 1907-8. He has been a fellow of the Surveyors' Institution since 1881. He is the fourth member of the profession to be Lord Mayor, his predecessors in the chair having been Alderman Farebrother, Alderman Musgrove, and Alderman Sir Whittaker Ellis. He is an acknowledged authority on land values, and is surveyor to a number of public authorities, including the Board of Trade, by whom he has been engaged for the last quarter of a century. In 1875 he married Emily Rebecca, daughter of the late Thomas Sleap, and has one son and five daughters.

A very interesting two hours' visit of inspection was paid to St. Paul's Cathedral yesterday (Thursday) morning, at the invitation of Mr. Mervyn E. Macartney, F.S.A., architect to the Dean and Chapter, by the Council and officers of the Society of Architects. The purpose was to see the operations in progress for grouting the masonry, under the direction of Mr. Macartney and Sir Francis Fox, consulting engineer, now being carried out by Messrs. John Thompson and Son, of Peterborough; and the works of regilding and decoration to the ball and cross, the golden gallery, and western campanili, in course of execution by Messrs. J. W. Gray and Co. The visitors, who included Mr. Percy B. Tubbs, F.R.I.B.A., President; Mr. E. C. P. Mason, F.R.I.B.A., Vice-President; Mr. C. E. Jackson, Treasurer; and Mr. C. McArthur Butler, Secretary, and a full muster of representatives of the members of Council, were received at the north-west entrance to the crypt by Mr. Halley, of Mr. Macartney's staff, who explained that for some time it had been observed that the fabric was sinking towards the south-west, partly owing, it had been ascertained, to original variations in the subsoil, causing from the very first unequal subsidence, and partly due to the fact that, probably because of Wren's difficulties in procuring sufficient stone from Portland he only employed that material for facing purposes, filling in the core with bricks or masonry from the burned Cathedral, or with poor oolitic stone from Burford, Oxon. At present Messrs. Thompson's workmen were drilling holes in the masonry of each pier in the centre of the edifice, into which cement grouting was forced until no more could be retained. Mr. Halley showed the drilling and grouting machines at work, and the dated tell-tale strings on the piers, which demonstrated that movement was still in progress. The operations in the south-west of the crypt were inspected with great interest.

Proceeding to the ground-floor area of the Cathedral, the visitors observed that the deep western pier in the south transept is enclosed by hoarding, and going behind the barrier the party inspected, from ladders and scaffolding, the wide fissures in the masonry to be seen here in the haunches of the south-west vaulting. Passing down to the south west end of the south nave aisle, the visitors followed Mr. Halley up the Geometrical Staircase and along the gallery over the aisle, and there examined the springing of the dome. Here still more extensive cracks were apparent, and the friable nature of the Burford stone was very evident. A long tunnel like aperture, only 15in. by 21in., leading through to the brick cone between the outer and inner domes, and approached by a ladder, was illuminated, it being explained by Mr. Halley that only architects' assistants and young workmen were able to worm their way through. The members of the Society appeared to take it for granted that times were too prosperous to allow them to explore a corridor of such limited dimensions, and closer inspection was "taken as read." Passing up by wooden and iron staircases to the open eye at the crown of the internal dome, a bird's-eye view was afforded of the ground area, and it was also seen that the upper part of the inner dome is of brickwork in English bond, afterwards rendered in cement, and that the panels, the festoons within them, and the modillions above, are, like the elaborate lierne vaulting over the nave of Milan Duomo, merely effects of scenic painting in fresco. A visit to the golden gallery, now in the painters' and gilders' hands, and to the interior of the ball, gave opportunities for seeing how thoroughly the regilding works are being executed. At the close, Mr. Tubbs, as President, suitably voiced the cordial thanks of the visitors to Mr. Halley for his lucid explanations and to Mr. Macartney for giving the opportunity for so detailed an inspection.

A course of three public lectures on "The Physiological Principles of Heating and Ventilation" is to be delivered under the auspices of the Chadwick Trustees, by Dr. Leonard Hill, at Bristol University, on Thursdays, October 23 and 30, and November 5. On November 4, 11, and 18 Sir George Newman, M.D., chief medical officer to the Board of Education, will give three Chadwick lectures at the University of London, South Kensington, on "The Place of the Open-Air School in Preventive Medicine," and at the Institution of Civil Engineers, Great George-street, S.W., Mr. W. Addington Willis, LL.B., will give three lectures on "House Drainage Law" on Mondays, November 17 and 24 and December 1. Information concerning other Chadwick lectures may be obtained of Mrs. Aubrey Richardson at the offices of the Chadwick Trust, 8, Dartmouth-street, Westminster.

The third interim report of the Royal Commission on the Ancient and Historical Monuments and Constructions of England, issued on Saturday, deals with the northern half of the county of Buckingham. The southern part of the county was described in a former report. The northern half of the county contains 126 parishes and 1,222 monuments, as compared with 102 parishes and 1,535 monuments in the southern half. Two schedules are appended—one containing a list of the monuments and constructions anterior to the year 1700, and the other containing a list of those especially worthy of preservation. Among those thus scheduled for preservation is the parish church of St. Mary, Bletchley, which contains an unusually fine 15th-century alabaster effigy of a knight in armour. In St. Laurence Church, Bradwell, are the remains of 13th-century dedicatory inscriptions on the chancel arch, and two bells by Michael of Wymbis, c. 1300. At Chetwood are the remains of a priory church, "with fine 13th-century windows at the east end, and unusually good glass of the 13th and 14th centuries in the south window of the chancel." In the parish church of St. Mary, Clifton Reynes, is the Reynes glass of 1428. At Creslow, the manor-house and chapel are scheduled. The chapel is notable on account of the twelfth-century remains; the house is a survival of 14th-century Domestic architecture; the crypt, the remains of the roof of the hall, the tower and stair-turret, and the traceried windows are remarkable. The 17th-century doors and staircase are good examples of woodwork of that date. Gayhurst House is the finest example of Domestic architecture of the late 16th century in North Bucks. The parish church of St. Mary, Hardwick, is notable on account of the pre-Conquest date of the nave and the 14th-century windows of the south aisle. In the parish church of All Saints, Hillesden, the late 15th-century glass, the early 16th-century rood-screen, and the Denton tomb of 1560 are noteworthy. The chancel, nave, and tower of Lavendon parish church are good examples of late pre-Conquest work, and the 13th-century mural paintings in the parish church of St. Nicholas, Little Horwood, are interesting. The only visible survival of Roman structural

work in the county is the tessellated pavement in the Queen's Temple at Stowe Park. At Wing is an almost complete example of a church of considerable size, and of a date not later than the 10th century.

The eleventh annual report of the Rural Housing and Sanitation Association, issued on Monday, states that the year 1912-13 has given remarkable evidence of the continued increase of the public interest in rural housing. Building by rural district councils, it is observed, does not appear to have put a check upon voluntary building; but, though all signs are hopeful, it cannot be denied, says the report, that difficulties are still formidable, and call for earnest and united tunately, the hope of direct help from the State by grants in aid of rural housing, which during the past year became very widespread, has acted in a manner that was probably never contemplated by those advocating the grant. Although the Housing Bills based upon a State subsidy which have been introduced into Parliament during the past year have not been carried through, many rural district councils have decided to postpone all consideration of building pending the fulfilment of further promises made by members of both political parties." Notwithstanding this, however, a certain amount of progress continues to be made; the utility of the Act is steadily increasing, and its provisions are becoming more widely known and appreciated.

A new railway-line, for passengers and goods, from Ponteland, Northumberland, to the Darras Hall estate, more than a mile distant from Ponteland, was opened on Saturday by the Lord Mayor of Newcastle. The railway has been carried out from plans by Mr. William Bell, of York, Mr. J. Oliver, of Newcastle, being the assistant engineer. The railway cost £9,000, and the station is in Middle Drive in the centre of the estate. Darras Hall estate, comprising 1,015 acres, was bought in 1907 by the representatives of allottees, among whom it was divided in parcels of about five acres each. Some eight miles of roads have been constructed; the land has been fenced, sewers and water have been laid, and provision has been made for lighting the estate by electricity. The trustees have caused a bridge to be built at Ponteland. Ten acres have been reserved for a recreation ground, and land for a public hall. Several villas and cottages have already been erected, and others are in progress. The estate is the sixth bought and laid out by the Northern Allotments Society, who initiated the project some five-and-twenty years ago. The trust deed stipulates that not more than four houses are to be built to the acre.

The public health committee of the Bethnal Green Borough Council in their report criticise the action of the London County Council with reference to the houses in the Brady-street area. The County Council have informed the borough council that they are not at present prepared to undertake an improvement scheme in this area under Part I. of the Housing of the Working Classes Act, 1890. The public health committee of the borough council state that it is acknowledged that many of the houses in the Brady-street area are in as hopelessly bad and decayed a condition, and as incapable of being made fit for human habitation, and as deserving of destruction, as those in the Tabard street area. They express regret that the County Council for some considerable time failed to deal with the representation made in 1904 on the ground that there was an immediate prospect of the area being developed by private enterprise. There was no substance in that suggestion, and the County Council were so informed. The committee "are satisfied that to ground further postponement of the discharge of a most important public duty, affecting the lives of thousands of inhabitants of Bethnal Green, upon the mere possibility of legislative efforts resulting in means of dealing with the area 'in a more satisfactory manner,' is a course in which this council cannot be recommended to acquiesce." The Local Government Board has decided to hold a local inquiry into the matter.

The Chorley Rural District Council was informed on Tuesday night that a mistake made by the Lancashire County Council had involved the Leyland Hundred in a loss of £26,000. About four miles of main road between Chorley and Horwich was to have been covered with tar macadam, but the county authorities put down granite setts, which cost £16,000 more and meant the loss of £10,000 grant from the Roads Board. The county authorities said they made the change because the Calico Printers' Association complained that tar macadam would pollute their water-supplies. The association, however, denied that they had made any such complaint, and stated that their water would not have been affected. The rural district council decided to ask the Chorley Board of Guardians to deduct from the county call their share of the £26,000.

At Tuesday's meeting of the city council of Bristol an important report of the Museum and Art Gallery committee was agreed to without serious opposition. It is proposed to acquire the site of the Rifle Drill Hall for the joint purposes of the University and the museum and art gallery, and to provide a new drill-hall on the site of the old sugar refinery in Old Market-street. Part of the Queen's-road site will be occupied by the new University buildings, and the remainder will be available for extending the museum and art gallery premises. The cost of the site and buildings in Old Market-street will be £31,000, and the arrangement is that the corporation and the University shall share the expense in proportion to the respective areas assigned to each, the proportion of cost allotted to the corporation being £19,000. It is not proposed at present to put up new buildings for the museum; but it is felt that the opportunity of securing the site ought not to be lost. The University authorities are, however, desirous of starting their new buildings as soon as possible.

Sending cardboard models of schoolhouses by parcel post is the latest device of the United States Bureau of Education for arousing interest in attractive school buildings at low cost for rural communities. The models are made to fold flat and are shipped by mail to local authorities, normal schools, and other agencies, for use during a limited period. A number have already been sent to points in the west and south-west. Models for one, two, and four-room schools are provided. The buildings are planned especially for rural communities, where low cost is the first essential. The buildings were designed by Dr. F. B. Dressler, of the Bureau of Education, and then worked over by two well-known firms of school architects, Cooper and Bailey, of Boston, and W. B. Ittner, of St. Louis. The models show all the details, within and without, and they are constructed to scale. It is believed that these models will be of great assistance to school authorities in small rural communities who cannot afford to engage a school architect, yet are ambitious to have their schoolhouse up to date in every particular. With one of these models to work from, Dr. Dressler asserts, any carpenter will be able to build a schoolhouse for his district that will meet every modern requirement.

MEETINGS FOR THE ENSUING WEEK.

FRIDAY (To-day).—Incorporated Institute of British Decorators. "Treatment of Woodwork in Decoration," by E. A. Shoffrey. Painters' Hall, Little Trinity-lane, E.C. 8 p.m.

Junior Institution of Engineers. "The Testing of Gas Engines," by W. A. Tookey.

MONDAY.—British Museum Lectures, by Banister Fletcher, F.R.I.B.A. Introductory Address of a course upon "Renaissance Architecture." 4 p.m.

Society of Engineers. "Highways," by C. H. Cooper, M.I.C.E. 7.30 p.m.

WEDNESDAY.—Manchester Society of Architects. Presidential Address by John Brooke, F.R.I.B.A. 16, St. Mary's Parsonage, Manchester. 6.30 p.m.

Mr. J. R. N. Charter has been appointed assistant conservator of forests, for the Federated Malay States.

Trade News.

WAGES MOVEMENTS

LONDON EMPLOYERS CONCESSION TO BUILDERS' LABOURERS.—The conference between the London Master Builders' Association and the United Builders' Labourers' Union held at Koh-i-Noor House, Kingsway, on Monday, under the presidency of Mr. Walter Lawrence, jun., resulted in a settlement on reasonable lines, as we anticipated it would last week. In the present [illegible] a code of working rules had been drawn up [illegible] a fixed scale of [illegible] The masters had proposed 1d. per hour increase in wages to take effect in six months' time; but the men urged that the increase should begin in the first week in October. The men also asked that overtime should begin, as was already the case with skilled workers, at 5 p.m. on week-days and at noon on Saturdays. At the end of the conference it was intimated that the masters were prepared to make a concession on the latter point and to put 5½d. and a half for overtime between noon and 1 p.m. on Saturdays. In the evening, at a conference at the Trade Hall, Blackfriars-road, of the executive council and the members and secretaries of the London branch of the United Builders' Labourers' Union, it was agreed to accept the terms offered by the Master Builders' Association, and instructions were given to the delegates to sign the code of rules.

LONDON PAINTERS AND DECORATORS' DISPUTE.—Mr. B. Francis-Williams, K.C., Recorder of Cardiff, sat as the Board of Trade Arbitrator at the Industrial Commissioner's Office, Old Palace-yard, on Tuesday, to meet the representatives of the Master Decorators' Association and the National Amalgamated Society of House and Ship Painters and Decorators, to consider the matters in dispute in connection with the recent painters' strike. The London Master Builders' Association and the Painters' Federation also applied to be heard; but the arbitrator ruled that as they were not parties to the dispute he could not hear them. The only matter now outstanding is the question of a code of rules. Both sides presented their case in detail. The arbitrator announced that he would make his award as early as possible.

SUNDERLAND.—The joiners on the North-East Coast, who applied for an increase in wages of 4s. 6d. a week, have been offered by the employers an advance of 1s. 6d. At Sunderland the men expressed their willingness to accept this offer.

It was decided by the Chelsea Borough Council on Wednesday evening that the section of the Embankment between the Albert and Battersea bridges should be paved with wood, at an estimated cost of £6,000.

Canon S. C. Armour visited on Wednesday the Merchant Taylors' School, Great Crosby, near Liverpool, where for forty years he was headmaster, for the purpose of opening an extension erected at a cost of £6,000.

Rusthall Church, which has been enlarged and lengthened westwards, at a cost of £3,600, will be dedicated by the Bishop of Rochester on Wednesday next. The nave has been extended westward, and new baptistery and vestries provided.

At Balliol College, a new block of buildings, completing the east side of the Garden quadrangle, has been erected. The extension contains seventeen undergraduate sets of rooms, a junior common room and an underground extension of the library.

Following the collapse of a nearly-completed picture-palace at Birmingham, the licensing justices have decided that all applicants for licenses for buildings with iron or steel roof, floor, or gallery should submit a certificate from a competent engineer that the building would be properly constructed.

The executive committee appointed at the recent conference at the City Guildhall of local and road authorities in the Metropolitan Police area on the subject of the motor-omnibus traffic, met again at the Mansion House on Tuesday, under the chairmanship of the Lord Mayor. It was resolved to prepare statistics in regard to the suggested contributions which should be paid to the highway authorities by the Road Board to cover the cost of the reconstruction of roadways caused by the increased wear and tear and damage set up by the motor-omnibuses. When these and other details have been collated and tabulated, the Prime Minister will be invited to receive a deputation, and hear the views of the authorities.

LATEST PRICES.

IRON.

Steel Joists, Belgian and German (ex steamer, London)	per ton	£6	3	6	to	£6	5	0
Steel Joists, English		7	10	0	,,	7	12	6
Wrought Iron Girder Plates		7	0	0	,,	7	5	0
Steel Girder Plates		7	2	6	,,	8	3	6
Bar Iron, good Staffs		6	5	0	,,	8	10	0
Do., Lowmoor, Flat, Round, or Square		20	0	0	,,	0	0	0
Do., Welsh		5	15	0	,,	5	17	0
Boiler Plates, Iron—								
South Staffs		8	0	0	,,	8	15	0
Best Snedshill		9	0	0	,,	9	10	0

Angles 10s., Tees 20s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £8 15s to £9.
Ditto galvanised, £14 to £15 10s. per ton.

Galvanised Corrugated Sheet Iron—

	No. 18 to 20.	No. 22 to 24
6ft. to 8ft. long, inclusive of gauge	Per ton. £13 0 0	Per ton. £13 10 0
Best ditto	13 0 0	14 0 0

Wire Nails (Points de Paris)—

3 to 7	8	9	10	11	12	13	14	15	B.W.G.
8/3	8/9	9/3	9/9	10/3	11/-	11/9	12/6	13/6	per cwt.

	Per ton.				Per ton.		
Cast-Iron Columns	£7	10	0	to	£9	0	0
Cast-Iron Stanchions	7	10	0	,,	9	0	0
Rolled-Iron Fencing Wire	8	5	0	,,	8	10	0
Rolled-Steel Fencing Wire	7	5	0	,,	7	10	0
,, ,, ,, Galvanised	8	15	0	,,	9	5	0
Cast-Iron Sash Weights	5	0	0	,,	5	5	0
Cut Floor Brads	9	15	0	,,	—		
Corrugated Iron, 24 gauge	16	0	0	,,	—		
Galvanised Wire Strand, 7 ply, 14 B.W.G.	14	5	0	,,	—		

B.B. Drawn Telegraph Wire, Galvanised—

0 to 8	9	10	11	12	B.W.G.
£10 10s.	£10 15s.	£11 0s.	£11 5s.	£11 15s.	per ton.

Cast-Iron Socket Pipes—

3in. diameter	£6	3	6	to	£6	7	0
4in. to 6in.	6	0	0	,,	6	5	0
7in. to 24in. (all sizes)	5	7	6	,,	6	0	0

[Coated with composition, 5s. 0d. per ton extra, turned and bored joints, 5s. 0d. per ton extra.]

Pig Iron—	Per ton.						
Cold Blast, Lilleshall	110s.	0d.	to	117s.	6d.		
Hot Blast, ditto	70s.	0d.	,,	75s.	0d.		

Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—

Gas-Tubes	75 p.c.
Water-Tubes	72½ ,,
Steam-Tubes	67½ ,,
Galvanised Gas-Tubes	65 ,,
Galvanised Water-Tubes	62½ ,,
Galvanised Steam-Tubes	57½ ,,

OTHER METALS.

Spelter, Silesian	Per ton	£21	0	0	to	£21	5	0
Lead Water Pipe, Town		24	15	0	,,	—		
,, ,, ,, Country		25	10	0	,,	—		
Lead Barrel Pipe, Town		25	15	0	,,	—		
,, ,, ,, Country		26	10	0	,,	—		
Lead Pipe, Tinned inside, Town		26	15	0	,,	—		
,, ,, ,, ,, Country		27	10	0	,,	—		
Lead Pipe, Tinned inside and outside, Town		29	5	0	,,	—		
,, ,, ,, ,, Country		30	0	0	,,	—		
Composition Gas-Pipe, Town		27	15	0	,,	—		
,, ,, ,, Country		28	10	0	,,	—		
Lead Soil-pipe (up to 4½in.) Town		27	15	0	,,	—		
,, ,, ,, Country		28	10	0	,,	—		

[Over 4½in. £1 per ton extra.]

Lead Shot, in 28lb. bags	24	15	0	,,	—		
Copper Sheets, sheathing & rods	91	0	0	,,	91	10	0
Copper, British Cake and Ingot	78	15	0	,,	79	5	0
Tin, English Ingots	103	15	0	,,	103	0	0
Do., Bars	103	15	0	,,	104	0	0
Pig Lead, in 1cwt. pigs (Town)	21	15	0	,,	—		
Sheet Lead, Town	24	5	0	,,	—		
,, ,, Country	25	0	0	,,	—		
Genuine White Lead	30	15	0	,,	—		
Refined Red Lead	25	0	0	,,	—		
Sheet Zinc	29	0	0	,,	—		
Old Lead, against account	19	5	0	,,	—		
Tin, per cwt.	10	15	0	,,	—		
Cut nails (per cwt. basis, ordinary brand	0	11	6	,,	—		

TIMBER.

CONSTRUCTIONAL.

Yellow Pine Deals, Quebec, per standard:— 1st quality		£38	0	0	to	£45	0	0
,, ,, ,, 2nd ,,		26	0	0	,,	32	0	0
,, ,, ,, 3rd ,,		16	0	0	,,	18	10	0
Spruce Deals: St. Johns		10	0	0	,,	11	10	0
,, ,, Miramichi		9	10	0	,,	10	10	0
,, Boards: Swag		11	0	0	,,	12	0	0
Red Deals: rchangel 1st quality		21	0	0	,,	24	0	0
,, ,, ,, 2nd ,,		16	0	0	,,	19	0	0
,, ,, ,, 3rd ,,		12	0	0	,,	14	0	0
,, ,, St. Petersburg								
,, ,, ,, 1st quality		16	10	0	,,	18	0	0
,, ,, ,, 2nd ,,		14	10	0	,,	15	10	0
,, ,, Wyburg & Uleaborg		12	10	0	,,	13	0	0
,, Gefle, Gothenburg, and Stockholm		12	10	0	,,	17	0	0
White Deals: Crown		14	0	0	,,	15	10	0
,, ,, Seconds		11	10	0	,,	13	0	0
Flooring: White and Planed— 1st and 2nd quality mixed		10	15	0	,,	11	15	0
1st, 2nd, & 3rd quality mixed		10	5	0	,,	11	0	0
Red Planed, 1st quality		14	10	0	,,	17	0	0
Pitch Pine: Prime Deals and Boards		18	0	0	,,	24	0	0
Lignum Vitæ	Per ton	7	0	0	,,	14	0	0

	Per cubic foot.						
Yellow Pine Logs (waney board)	0	5	0	,,	0	5	6
Pitch Pine Logs	0	2	0	,,	0	2	6
Birch: Quebec Logs	0	2	3	,,	0	2	9
Oak: Austrian Wainscot	0	7	0	,,	0	8	0
Mahogany: Gaboon	0	2	0	,,	0	2	3

FURNITURE AND HARDWOODS.

Teak: Burmese, per load, 50ft.		£20	0	0	to	£25	0	0
Teak: Java, per load, 50ft.		16	0	0	,,	21	0	0
		Per cubic foot.						
Oak Planks: U.S.A., imported		0	1	9	to	0	2	6
,, Boards ,, ,, Prm.		0	3	0	,,	0	3	6
,, ,, ,, ,, Mdm.		0	2	6	,,	0	2	9
Sequoia (Californian Redwood)		0	2	1	,,	0	3	6
Birch: Quebec logs		0	2	3	,,	0	2	9
,, ,, sawn planks		0	1	3	,,	0	2	0
Oak: Austrian Wainscot		0	7	0	,,	0	8	0
Walnut: Prime boards and planks		0	6	0	,,	0	6	6
Walnut: Mdm. ,, ,,		0	3	6	,,	0	4	6
Greenheart: Hewn logs		0	3	3	,,	0	4	0
Cedar: Cigar box		0	4	9	,,	0	5	6
Satin Walnut: Imp. sawn boards, prime		0	2	4	,,	0	2	9
Orham: Imp. sawn boards, prime		0	2	0	,,	0	2	3
Mahogany: St. Domingo, Cuba, and Honduras		0	6	0	,,	0	9	0
,, African, Assinee, &c.		0	5	0	,,	0	6	6
,, Lagos and Benin		0	4	6	,,	0	6	0
,, Sekondi and Cape Lopez		0	3	0	,,	0	4	0
,, Gaboon		0	2	0	,,	0	2	3
Satinwood: West Indian		0	10	0	,,	0	14	0
Rosewood	Per ton	8	0	0	,,	12	0	0
Lignum Vitæ	,,	7	0	0	,,	14	0	0

STONE.*

Red Mansfield, in blocks	per foot cube	£0	2	4
Darley Dale, ditto	,,	0	2	3
Red Corsehill, ditto	,,	0	2	3
Closeburn Red Freestone, ditto	,,	0	2	0
Ancaster, ditto	,,	0	1	10
Greenshill, ditto	,,	0	1	10
Chilmark, ditto (in truck at Nine Elms)	,,	0	1	10½
Hard York, ditto	,,	0	2	0
Ditto ditto 6in. sawn both sides, landings, random sizes	per foot sup.	0	2	8
Ditto ditto 3in. slab sawn two sides, random sizes	,,		1	3

*All F.O.R. London.

Bath Stone, delivered on road waggons, Paddington Depot	per foot cube	0	1	7½
Ditto, ditto, Nine Elms Depot	,,	0	1	9½
Beer Stone, delivered on rail at Seaton Station	,,	0	1	0
Ditto, delivered at Nine Elms Station	,,	0	1	6

Portland Stone, in random blocks of 20ft. average:—

	Brown Whit Bed.	White Base Bed
Delivered on road waggons at Paddington Depot, Nine Elms Depot, or Pimlico Wharf	Per foot cube. ... £0 2 3	... £0 2 4

SLATES.

	in.	in.	£	s.	d.	per 1,000 of
Blue Portmadoc	20×10	...	12	12	6	1,200 at r.stn
,, ,,	16×8	...	6	12	6	,, ,,
Blue Bangor	20×10	...	13	2	6	,, ,,
,, ,,	20×12	...	13	17	6	,, ,,
First quality	20×10	...	13	0	0	,, ,,
,, ,,	20×12	...	13	15	0	,, ,,
,, ,,	16×8	...	7	5	0	,, ,,
Eureka unfading green	20×10	...	15	17	6	,, ,,
,, ,,	20×12	...	18	7	6	,, ,,
,, ,,	18×10	...	13	5	0	,, ,,
,, ,,	16×8	...	10	5	0	,, ,,
Permanent green	20×10	...	11	12	6	,, ,,
,, ,,	18×10	...	9	12	6	,, ,,
,, ,,	16×8	...	6	12	6	,, ,,

BRICKS.

(All prices net.)

First Hard Stocks	£1	15	0	per 1,000 alongside, in	
Second Hard Stocks	1	11	0	,, ,,	river.
Mild Stocks	1	9	0	,, ,,	
Picked Stocks for Facings	2	5	0	,,	livered at rly. stn.
Flettons	1	10	0	,, ,,	,,
Pressed Wire Cuts	1	18	0	,, ,,	,,
Red Wire Cuts	1	14	0	,, ,,	,,
Best Fareham Red	3	12	0	,, ,,	
Best Red Pressed Ruabon Facing	5	0	0	,, ,,	,,
Best Blue Pressed Staffordshire	3	15	0	,, ,,	,,
Ditto Bullnose	4	0	0	,, ,,	,,
Best Stourbridge Firebricks	3	14	0	,, ,,	,,
2½in. Best Red Accrington Plastic Facing Bricks	4	10	6	,,	Net, delivered in full truck loads in London.

" Accrington Best Red Plastic Facing per 1,000

Bricks	£2	10	0
3in. ditto Second Best Plastic ditto	2	2	6
Ditto Ordinary Second Bricks	1	11	3
Ditto Plastic Engineering Bricks	1	17	6
Sewer Arch Brick not more than 3in. in thickest part	3	0	0
3in. Chimney Bricks fit for outside work	2	6	0
3in. ditto ditto through and through	2	0	0
3in. Beaded, Ovolo and Bevel Jambs; Octagons, 2in. and 4in. radius Bullnoses; Stock patterns	3	7	6
Accrington Air Bricks, 9"×3 course deep, each	0	0	6
Ditto ditto 9"×1 course ,,	0	0	3

Accrington Camber Arches:—

3 course deep, 4½" soffit, per foot opening							0	1	3
4	ditto	4½"	ditto	ditto	ditto	...	0	1	8
5	ditto	4½"	ditto	ditto	ditto	...	0	2	1
6	ditto	4½"	ditto	ditto	ditto	...	0	2	6
3	ditto	9"	ditto	ditto	ditto	...	0	2	1
4	ditto	9"	ditto	ditto	ditto	...	0	2	11
5	ditto	9"	ditto	ditto	ditto	...	0	3	9
6	ditto	9"	ditto	ditto	ditto	...	0	4	6

Net free on rail or free on boat at works.

GLAZED BRICKS.

HARD GLAZES, (PER 1,000.)

White, Ivory, and Salt Glazed. Best.	Best. Seconds.	Buff, Cream, & Bronze.	Other Colours.	Second Colours.
Stretchers—				
£12 7 6	£10 17 6	£13 17 6	£17 17 6	£12 7 6
Headers—				
11 17 6	10 7 6	13 7 6	17 7 6	11 17 6
Quoins, Bullnose, and 4½in. Flats—				
15 17 6	14 17 6	17 17 6	21 7 6	15 17 6
Double Stretchers—				
17 17 6	16 7 6	20 17 6	24 7 6	17 17 6
Double Headers—				
14 17 6	13 7 6	17 17 6	21 7 6	14 17 6
One side and two ends, square—				
18 17 6	17 7 6	21 17 6	26 7 6	18 17 6
Two sides and one end, square—				
19 17 6	18 7 6	22 17 6	26 17 6	19 17 6
Splays and Squints—				
17 7 6	15 17 6	21 17 6	24 17 6	17 7 6
Plinth and Hollow Bricks, Stretchers and Headers—				
5d. each	4d. each	6d. each	6d. each	5d. each
Double Bullnose, Round Ends, Bullnose Stops—				
5d. each	4d. each	6d. each	6d. each	5d. each
Rounded Internal Angles—				
4d. each	3d. each	5d. each	5d. each	4d. each

MOULDED BRICKS.

Stretchers and Headers—				
8d. each	8d. each	8d. each	8d. each	8d. each
Internal and External Angles—				
1/2 each	1/2 each	1/2 each	1/2 each	1/2 each
Cill Bullnose, Stretchers and Headers—				
5d. each	4d. each	6d. each	6d. each	5d. each
Majolica or Soft Glazed Stretchers and Headers				Per 1,000 £22 17 6
,, ,, Quoins and Bullnose				27 17 6
Compass bricks, circular and arch bricks of single radius £6 per 1,000 over above list for their respective kinds and colours				Not exceeding 9in. by 4½in by 2½in.
Camber arch bricks, any kind or colour, 1s. 2d. each				

Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.

*These prices are carriage paid in full truck loads to London Stations.

	s.	d.	
Thames Sand	7	6	per yard, delivered
Pit Sand	7	0	,, ,,
Thames Ballast	6	0	,, ,,

	s.	d.			Per ton.
Best Portland Cement	36	0	to	41	0 delivered
Ground Blue Lias Lime	21	0	per ton delivered.		

Exclusive of charge for sacks.

	s.	d.		s.	d.	Per yard.
Grey Stone Lime	13	6	to	14	0	delivered

Stourbridge Fireclay in sacks 27s. 0d. per ton at railway station.

TILES.

	s.	d.	Dlvrd. at
Plain red roofing tiles	42	0	per 1000 ry. stn.
Hip and Valley tiles	3	7	per doz. ,, ,,
Broseley tiles	50	0	per 1000 ,, ,,
Ornamental tiles	52	6	,, ,, ,,
Hip and Valley tiles	4	0	per doz. ,, ,,
Ruabon red, brown, or brindled	57	6	per 1000 ,, ,,
do. (Edwards)	60	0	,, ,, ,,
Ornamental do.	4	0	per doz. ,, ,,
Hip tiles	3	0	,, ,, ,,
Valley tiles			
Selected "Perfecta" roofing tiles:—Plain tiles (Peake's)	46	0	per 1000 ,, ,,
Ornamental do.	48	6	,, ,, ,,
Hip tiles	3	10½	per doz. ,, ,,
Valley tiles	3	4½	,, ,, ,,
"Rosemary" brand plain tiles	48	0	per 1000 ,, ,,
Ornamental tiles	50	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	8	,, ,, ,,
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 ,, ,,
Hand-made sand-faced	45	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	6	,, ,, ,,
Hartshill" brand plain tiles, sand-faced	50	0	per 1000 ,, ,,
Pressed	47	6	,, ,, ,,
Ornamental do.	50	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
alley tiles	3	6	,, ,, ,,

OILS.

Rapeseed, English pale, per tun		£28	15	0	to	£29	5	0
Do., brown	,, ...	26	15	0	,,	27	5	0
Cottonseed, refined	,, ...	29	0	0	,,	30	0	0
Olive, Spanish	,, ...	39	10	0	,,	40	0	0
Seal, pale	,, ...	21	0	0	,,	21	10	0
Cocoanut, Cochin	,, ...	46	0	0	,,	46	10	0
Do., Ceylon	,, ...	42	10	0	,,	43	0	0
Do., Mauritius	,, ...	42	10	0	,,	43	0	0
Palm, Lagos	,, ...	33	5	0	,,	33	5	0
Do. Nut Kernel	,, ...	35	0	0	,,	35	10	0
Oleine	,, ...	17	5	0	,,	19	5	0
Sperm	,, ...	30	0	0	,,	31	0	0
Lubricating U.S.	per gal,	0	7	0	,,	0	8	0
Petroleum refined	,, ...	0	0	6½	,,	0	0	6½
Tar, Stockholm	per barrel	1	6	0	,,	1	10	0
Do., Archangel	,, ...	0	19	6	,,	1	0	0
Linseed Oil	per gal.	0	2	3	,,	—		
Baltic Oil	,, ...	0	2	6	,,	—		
Turpentine	,, ...	0	2	7½	,,	—		
Putty (Genuine Linseed Oil)	per cwt.	0	9	0	,,	—		
Pure Linseed Oil "Stority" Brand	,,	0	10	0	,,	—		

GLASS (IN CRATES).

	15oz.	21oz.	26oz.	32oz.
English Sheet Glass:				
Fourths	2d. ...	3d. ...	3½d. ...	4½d.
Thirds	2½d. ...	3½d. ...	4½d. ...	5½d.
Fluted Sheet	2½d. ...	3½d. ...	6½d. ...	7d.
Hartley's English Rolled Plate:	⅛in.	3/16in.	¼in.	
	2½d. ...	2½d. ...	3d.	
Figured Rolled and Repoussine	White.	Tinted.		
	3½d. ...	5d.		

VARNISHES, &c.	Per gallon.
Fine Pale Oak Varnish	£0 8 0
Pale Copal Oak	0 10 0
Superfine Pale Elastic Oak	0 13 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of churches	0 14 0
Fine Elastic Carriage	0 13 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flatting Varnish	0 18 9
White Copal Enamel	1 4 0
Extra Pale Paper	0 12 9
Best Japan Gold Size	0 10 9
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 0

TRADE NOTES.

Mr George H Wenyon architect has changed his London address to 5, Grafton-street, Old Bondstreet, W telephone, Regent, 1146 He still retains his address in Vancouver, B C

Boyle's latest patent "Air-Pump" ventilators have been employed at Radford Church, Radford Coventry.

Telephone DALSTON 1388

OGILVIE & CO.

Many years connected with the late firm of W. H. LASCELLES & CO., of Bunhill Row.

Mildmay Avenue, ISLINGTON, N.

EXPERTS in HIGH-CLASS JOINERY.

ALTERATIONS & DECORATIONS. ESTIMATES FREE.

FOR

Olivers' Seasoned Hardwoods,

APPLY TO—

WM. OLIVER & SONS, Ltd., 120, Bunhill Row, London, E.C.

TENDERS.

*** Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

AUBOURN, LINCS.—For the erection of a new sluice with three iron draw-doors, and the reparation of the brickwork at the Aubourn Mill. For the Lincoln Commissioners of Sewers. Accepted tenders:—

Doors and fixing —
Duckering, C. ... £98 0 0
Builder's work:—
Lucas, C. R. ... 39 0 0
Total, £137.

CEFN MAWR.—For new manse for the Tabernacle Church, Cefn Mawr. Mr. Geo. M. Tune, Wood Bank, Trevor, Llangollen, architect:—

Coward, W., and Co., Llangollen	£983 0 0
Roberts, F., and Sons, Trevor	793 0 0
Humphreys, W. F., Cefn Mawr	709 0 0
Jones, J. T., Cefn Mawr*	600 0 0
Davies, Ll., Rhos	587 17 0

* Accepted.

CLIFTON, BRISTOL.—For heating and ventilating the R.C. Cathedral, Clifton:—
Crispin and Sons, Bristol (accepted).

CHARLEVILLE.—For alterations and additions to residence near Charleville, co. Cork. Mr. W. F. Mayo, C.E., Fermoy, architect:—

Kenny, J., and Sons, Limerick	£375 0 0
Murray, W., and Sons, Youghal	372 0 0
Gleeson, W., Fedamore*	360 0 0
Connell, C. and T. O., Charleville	300 0 0

* Accepted.

CHEADLE.—For laying a 9in. sewer with manholes on land off Lid-lane, Cheadle, for the rural district council —
Alcock, W. (accepted) ... £105 0 0

ERITH.—For erection of new fencing at the sewage-disposal works, for the urban district council:—
Horton, B., and Son, Lewisham
Bridge (accepted) ... £118 0 0

EYE.—For erecting infirmary, for the Hartismere Union Guardians. Mr. H. J. Green, A.R.I.B.A., Norwich, architect —

Reade, W. C., Aldeburgh	£18,998 10 9
Bennett, F., Ipswich	18,700 8 7
Grimwood, G., & Sons, Sudbury	18,654 15 1
Catchpole, E., & Sons, Ipswich	17,987 0 0
Scarles Bros., Norwich	17,414 0 0
Shanks, R., Chatteris	17,308 0 0
Grimwood, G., & Sons, Ipswich	17,249 0 0
Clarke, E., Thetford	17,085 0 5
Youngs, J., and Son, Norwich	16,996 0 0
Smith, E. J., Bunwell	16,523 0 0
Gibbons, A. J., Crowfield*	15,842 16 8

* Accepted conditionally.

GLASGOW.—For the various works in connection with the erection of the new buildings on the west side of High-street, for the corporation. Accepted tenders:—
Digger, mason, and brickwork
Tram and Taylor ... £11,403 8 1
Wrightwork:—
Buchanan, D., and Son ... 1,941 7 0
Cast-iron and steel works:—
Maciellan, P. and W., Ltd. ... 3,941 18 3
Plumbers and Gasfitters:—
Paterson, J., and Co. ... 984 0 0
Plasterer:—
Bathgate, H. S. ... 613 10 7
Painter —
Anderson, A. 479 0 0
Asphalt:—
Bradshaw's Asphalt Co., Ltd. ... 109 0 0
Glazier —
J. P. M'Phie 372 18 0
Tilers:—
Brown, R., and Son, Ltd. ... 253 1 7

GREENWICH, S.E. — For forming and paving that portion of Woodville-road which extends from Hervey-road southwards, for the borough council:—

Griffiths, W., and Co., Ltd	£402 0 0
Fry Bros.	387 0 0
Woodham, H., and Sons	375 0 0
Mowlem, J., and Co., Ltd.*	369 0 0

* Recommended for acceptance.

GREENWICH, S.E. — For forming and paving that portion of Hervey-road which extends from the western side of Woodville-road to Shooters Hill-road, for the borough council:—

Griffiths, W., and Co., Ltd., Bishopsgate	£2,691 0 0
Woodham, H., and Sons, Catford	2,642 0 0
Fry Bros., Greenwich	2,597 0 0
Mowlem, J., & Co., Ltd., Grosvenor Wharf, Westminster*	2,566 0 0

* Recommended for acceptance.

HACKNEY, N.E.—For supply of sub-station switchgear and connections, for the borough council —

Ferranti, Ltd.	£6,832 0 0
British Westinghouse Electric and Manufacturing Co., Ltd.	6,212 0 0
Switchgear and Cowans, Ltd.	5,985 0 0
British Thomson-Houston Co., Ltd.	5,909 0 0
Siemens Bros. Dynamo Works, Ltd.	5,778 0. 0
Reyrolle, A., and Co., Ltd.	5,759 0 0
Electric Construction Co., Ltd.	5,632 0 0
General Electric Co., Ltd.	5,187 0 0
Johnson and Phillips, Ltd.*	4,748 6 6

* Recommended for acceptance, with extras £942 7s. 2d., making a total of £5,690 13s. 8d.

HITCHIN.—For the construction of sewerage and sewage-disposal works, for the Hitchin Urban District Council. Mr. E. J. Silcock, M.I.C.E., Sanctuary House, Tothill-street, Westminster, engineer:—

Coles, A. N., Plymouth	£17,212 0 0
Bentley, C., Leicester	15,791 0 0
Smart, T., Nottingham	15,791 0 0
Bell, G., & Sons, Ltd., Tottenham	15,746 0 0
Langley and Johnson, Slough	15,497 0 0
Pedrette, T. W., Southend-on-Sea	15,446 0 0
Powdrill, A. J., Luton	15,047 0 0
Dickson, J., St. Albans	14,998 0 0
Middleton and Hopper, Langholm	14,995 0 0
Ashley, H., Mansfield	14,868 0 0
Price, A. H., and Co., Nottingham	14,853 0 0
Brigg, W., Eccleshill	14,680 0 0
Moss, W., & Sons, Loughborough	14,553 0 0
Thompson, A., Finchley	14,446 0 0
Inns & Co., Stevenage (accepted)	14,167 0 0

KING'S LANGLEY.—For the erection of a council school, for the Herts Education Committee. Mr. U. A. Smith, M.I.C.E., county surveyor —

Pickrill, N., Wealdstone	£1,890 9 5
Lown and Co., Holloway	1,819 10 5
Brightman and Son, Watford	1,685 0 0
Allen, M. J., Biggleswade*	1,445 16 3

* Accepted.

LAUNCESTON.—For the erection of 32 houses for the working classes, for the town council:—
Race Hill.

Pethick Bros., Bude	£6,575 0 0
Soper, R., and Dawe, Launceston	6,117 17 6
Shorland, E., and Son, Launceston	6,068 0 0
Stanbury, F. J., Devonport	5,951 0 0
Debnam, A. R., Plymouth	5,602 0 0
Westcott, E. H. Exeter	5,550 0 0
Bennett, W. E., Bodmin	5,407 0 0

St. Stephens.

Debnam, A. R.	£4,156 0 0
Stanbury, F. J.	4,016 0 0
Pethick Bros.	3,896 0 0
Soper, R., and Dawe	3,749 5 6
Westcott, E. H.	3,680 0 0
Bennett, W. E.	3,500 0 0
Strike, G. H., Launceston	2,252 0 0

Whole contract.
Rendell, E. ... 9,660 0 0
(Deferred for further consideration.)

PERRY BARR.—For the erection of a council school at Perry Barr, for the Staffordshire Education Committee:—
Willcock, Henry, and Co., Wolverhampton (accepted) ... £1,685 0 0

POPLAR, E.—For the supply of wet-air filters for two 3,000kw. turbo-alternators, for the borough council:—

Heenan and Froude	£589 0 0
Balcke and Co.	498 0 0
Sturtevant Engineering Co.*	497 0 0

* Recommended for acceptance.

POPLAR, E.—For the supply of girders for boiler foundations, for the borough council:—

Redpath, Brown, and Co.	£96 0 0
Fairweather and Ranger*	83 0 0
Peirson and Co.	79 0 0

* Recommended for acceptance.

POPLAR, E.—For the supply of switchgear in connection with 1,000kw. converter at Millwall sub-station, for the borough council:—

Johnson and Phillips, Ltd.	£422 0 0
Ferranti, Ltd.	397 0 0
British Westinghouse Co.	367 0 0
General Electric Co.*	257 0 0

* Recommended for acceptance.

TORQUAY.—For new entrance and billiard-room, Grand Hotel, Torquay. Mr. Francis C. B. Johnson, 8, Strand, Torquay, architect:—

Narracott, R. E.	£2,127 0 0
Wakeham Bros., Plymouth	2,120 0 0
Hamptons, London	2,050 0 0
Bovey, E. P., and Son	1,998 0 0
Pittard and Sons, Langport	1,989 0 0
Jackmann, H. C.	1,919 14 3
Wilkins and Son	1,857 0 0
Watson, W., and Son	1,827 0 0
Yeo, R. F., and Sons*	1,498 0 0

* Accepted subject to reduction.

(*Continued on page XII.*)

LIST OF COMPETITIONS OPEN.

Oct. 4	Laying-out 50 acres Estate and Working Class Dwellings, Bradford (H. T. Hare, F.R.I.B.A., Assessor)		F. Stevens, Town Clerk, Town Hall, Bradford.
,, 6	Front for Cigar Shop, Piccadilly. (Henry Tanner, F.R.I.B.A., 12, Regent-street, W., Assessor)	£50	Martins, Ltd., 25, Cheapside, E.C.
,, 31	Houses and Planning, York	£100, £50, £25	F. W. Spurr, City Engineer, Guildhall, York.
Nov. 1	Royal Palace, Sofia, Bulgaria		Section d'Architecture au Ministere des Travaux Publics, Sofia.
,, 1	Law Courts, Sofia, Bulgaria		Section d'Architecture au Ministere des Travaux Publics, Sofia.
,, 18	Destructor, Schaerbeek-lez-Bruxelles		Service de l'Ingenieur, 30, Rue de la Ruche, Brussels.
,, 29	Band Pavilion, West Cliff, Folkestone (limit of cost £20,000). (Edwin T. Hall, F.R.I.B.A., 34, Bedford-square, W.C., Assessor)		A. F. Kidson, Town Clerk, Folkestone.
Dec. 29	New Offices for Board of Trade, &c., Whitehall Gardens, S.W. [R. Blomfield, M.A. (Oxon), A.R.A., P.R.I.B.A. J. Belcher, R.A., and Sir Aston Webb, C.V.O., C.B., R.A., Assessors] Sketch Designs, ten will be selected,		
1914.	with £300 Honorarium each		The Secretary, H.M. Office of Works, Storey's Gate, S.W.
Jan. 2	Manchester Royal Exchange, Additional New Buildings and Alterations. Open to all architects in U.K. Not more than 12 architects of repute have been specially invited; each of whom will receive one hundred guineas. The three selected architects will receive one hundred guineas each. Author of design placed first will be appointed. (J. S. Gibson, F.R.I.B.A., Assessor)		Rich. J. Allen, Master, Royal Exchange, Manchester.
,, 2	Departmental and Courts Buildings, Ottawa (T. E. Collcutt, J. H. G. Russell, and J. O. Marchand, Assessors). Double Competition, five unsuccessful competitors in second to receive 3,000dols. each		R. C. Desrochers, Department of Public Works, Ottawa, Ont.
Feb. 15	Savings Bank, Verona (Five Assessors)	£1,200, £600	The Savings Bank, 1, Via Garibaldi, Verona.
No date	Twelve Workmen's Cottages, Skelmanthorpe		W. Fisher, Clerk, Skelmanthorpe.

LIST OF TENDERS OPEN.

BUILDINGS.

Oct.	3—Labourer's Cottage, Ballinglanna	Clonakilty Rural District Council	W. H. Spiller, Clerk, Cork.
,,	3—Labourer's Cottage, Lissard	Clonakilty Rural District Council	W. H. Spiller, Clerk, Cork.
,,	3—Reroofing Cottages, Saroo and Mandatanvalla	Clonakilty Rural District Council	W. H. Spiller, Clerk, Cork.
,,	3—Cottages, Repairs to, Tralong and Knockea	Clonakilty Rural District Council	W. H. Spiller, Clerk, Cork.
,,	4—Drill Hall, Additions to, Guildford	Surrey Terr. Force Assoc.	Jarvis & Richards, Archts., 10, Queen Anne's Gate, Westminster.
,,	4—Girls' Secondary School (210 places), Leigh	Town Council	H. Littler, County Archt., 16, Ribblesdale-place, Preston.
,,	4—Bakery, Portknockie	Provost Addison	W. Hendry, Archt., 91, West Church-st., Buckie.
,,	4—Boiler House, Aspley Dyeworks, Huddersfield		J. Ainley, Archt., Chapel-street, Slaithwaite.
,,	4—Gasworks Weigh Office, Re-erecting, Brierfield	Nelson Gas Committee	A. M. Fyffe, C.E., Eng. and Man., Gas Offices, Nelson.
,,	4—Shed, East Pier, Kirkcaldy	Town Council	W. L. Macindoe, Town Clerk, Kirkcaldy.
,,	4—Besore Farm, Additions to, Kenwyn, Truro	Cornwall County Council	J. Davis, County Land Agent, County Hall, Truro.
,,	6—Semi-Detached Villas (18), Cwmaman	Penybryn Building Club	J. Llewellin Smith, Archt., Aberdare.
,,	6—Cottage Homes, Eastry, Sandwich	Guardians	Jennings and Gray, Archts., 4, St. Margaret's-st., Canterbury.
,,	6—Garage, Workshop, and Showrooms, Halifax	Motor Exchange	T. L. Patchett, Archt., George-square, Halifax.
,,	6—House, Cwmaman	Mrs. M. Wilson	J. Llewellin Smith, Archt., Aberdare.
,,	6—Theatre, &c., 77 and 78, George-street, Limerick	M. W. Shanly	J. O'Malley, B.A., B.E., Archt., 10, Glentworth-street, Limerick.
,,	6—Four Day Shelters at Sanatorium, Baguley	Manchester Sanitary Committee	The City Architect, Town Hall, Manchester.
,,	7—Workhouse, Plastering Work at, West Didsbury	South Manchester Guardians	F. H. Overmann, F.M.S.A., 49, King-street, Manchester.
,,	7—Parc Gwyllt Asylum, New Block at, Bridgend	Visiting Committee	R. S. Griffiths, M.S.A., Archt., Tonypandy.
,,	7—Houses (52), New Town, Houghton-le-Spring	Urban District Council	J. W. Holbrook, Sur., Newbottle-street, Houghton-le-Spring.
,,	7—Car-repairing Shops, Abbey Park-road, Leicester	Corporation	E. G. Mawbey, M.I.C.E., Boro' Eng., Town Hall, Leicester.
,,	7—Six Cottages at Station, Portskewett, Mon.	Great Western Railway Co.	A. Bolter, Sec., Paddington Station, W.
,,	7—Three Houses, Reinwood-road, Lindley		Lunn and Kaye, Archts., Milnsbridge.
,,	7—Roof to E Warehouse, Chandos-street, Landport	Timothy White and Co.	A. E. Cogswell, Archt., Prudential Buildings, Portsmouth.
,,	7—Cottages (12), Beoley-road, Redditch	Urban District Council	A. J. Dickinson, Eng., Council Offices, Redditch.
,,	7—Masonic Hall, Additions to, Portgordon		J. Wittet, Archt., Elgin.
,,	7—Tabernacle Chapel, Additions to, Barry Dock		D. Morgan, F.R.I.B.A., Charles-street Chambers, Cardiff.
,,	7—Trades Hall, Daw Bank, Stockport	Spinners' and Weavers' Association	Swann and Stockton, Archts., St. Peter's Chmbrs., Stockport.
,,	8—Cottage, Tredogan Farm, Penmark	Glamorgan County Council	The County Hall, Cardiff.
,,	8—Six Cottages, Angelton	Visitors Committee	W. D. Morgan, Archt., 194, Ystrad-road, Pentre.
,,	8—Cottages (12), Markfield	Market Bosworth R.D.C.	W. M. Sykes, Sur., 152, Melbourne-road, Ibstock.
,,	8—Asylum, Ten Cottages at, Parc Gwilt	Visitors Committee	W. D. Morgan, Archt., 194, Ystrad-road, Pentre.
,,	8—Workhouse Nursery, Alterations to, Southampton	Guardians	A. J. Walden, Clerk, Workhouse, Southampton.
,,	8—Workshop, Carnarvon	G. H. Moore and Sons	R. Davis, Sons, and Tilling, 125, High-street, Bangor.
,,	9—Completing School, Menai Bridge		J. Owen, F.R.I.B.A., County Archt., Menai Bridge.
,,	9—Weaving Shed, Queen's Mill, Lockwood, Huddersfield		A. Shaw, Archt., Golcar.
,,	9—Eight Houses, West Coker	Yeovil Rural District Council	Petter and Warren, Archts., Church-street, Yeovil.
,,	9—Queen's-road Open-Air School, Kitchen, &c., at, Barnsley		E. W. Dyson, L.R.I.B.A., 10, Regent-street, Barnsley.
,,	10—School, Additions to, Treeton	West Riding Education Committee	The Education Architect, County Hall, Wakefield.
,,	10—New Post Office, Scunthorpe	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
,,	10—Council School, Additions to, Normanton Common	West Riding Education Committee	The Education Architect, County Hall, Wakefield.
,,	10—New Post-office, Bulford Camp	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
,,	11—House, Garage, and Offices, Carbis Bay, Cornwall		Grylls, Hill, and Hill, Cross-street, Helston.
,,	11—Secondary School, Falmouth	Cornwall Education Committee	S. Hill, Archt., Green-lane, Redruth.
,,	13—Restoring the Eglise Saint-Jean-Baptiste, Tongres	Gouvernement Provincial	M. Gouverneur de Limbourg, Hasselt, Belgium.
,,	13—Workhouse Laundry Block and Mortuary, Faringdon	Guardians	H. Glynn Warne, London-street, Faringdon, Berks.
,,	13—Test House, Foundations, Aircraft Factory, S.Farnborough	Secretary of State for War	The Director of Army Contracts, War Office, S.W.
,,	13—Infectious Diseases Hospital, Thorpe, Easington	Rural District Council	H. T. D. Hedley, Archt., 40, Frederick-street, Sunderland.
,,	14—District Engineer's Offices, Darlington	North-Eastern Railway Co.	W. Bell, Archt., York.
,,	14—School, Lowbourne, Melksham	Wilts County Council	J. G. Powell, County Sur., Trowbridge.
,,	14—School, Extensions to, Dean Bank	Durham County Council	W. Rushworth, Archt., Shire Hall, Durham.
,,	15—Bandstand, Clacton-on-Sea	Urban District Council	Daniel Bowe, Sur., Town Hall Buildings, Clacton-on-Sea.
,,	15—Cottages (20), Clitheroe	Corporation	A. R. Bleazard, Boro' Eng., Clitheroe.
,,	15—Gymnasium, &c., Royal Military College, Sandhurst	Secretary of State for War	The Director of Army Contracts, War Office, S.W.
,,	16—Pavilion, Vauxhall Park, S.W.	Lambeth Borough Council	The Borough Engineer, Lambeth Town Hall, Brixton Hill, S.W.
,,	16—Council School, Additions to, Little Coates	Lindsey Education Committee	Scorer and Gamble, Archts., Bank-street Chambers, Lincoln
,,	16—Head Post-office, Extending, Cardiff	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
,,	18—Workhouse, Terrazzo Flooring at, Cardiff	Guardians	A. J. Harris, Clerk, Queen's Chambers, Cardiff.
,,	20—Council School, Grantham	Education Committee	The Borough Surveyor's Office, Guildhall, Grantham.
,,	20—Workhouse, Laundry at, West Hill, Dartford	Guardians	Tait and Hobbs, Archts., Lowfield-street, Dartford.
,,	20—New Post Office, Bolton	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate S.W.
,,	22—Repairs to Forts (Six Months), Milford Haven	War Department	The Royal Engineer Office, Hobbs Point, Pembroke Dock.
,,	28—Council School, Additions to, Aldingbourne		H. P. Roberts, F.R.I.B.A., Thurloe House, High-st., Worthing.
,,	29—Various Buildings, Cavalry Barracks, Redford	Secretary of State for War	The Director of Army Contracts, War Office, S.W.
No date	—No. 4, Scale Villa, Alterations, &c., to, Seascale		J. Hartley, Timber Merchant, Station-rd., Wigton, Cumberland.
do.	—Covered Stand, Hillary-st. Ground, Walsall	Football Club	Jeffries and Shipley, Archts., 24, Bridge-street, Walsall.
do.	—Pump-house and Storage Tank, Besom Hill, Oldham		A. Andrew, Gas and Water Offices, Greaves-street, Oldham.
do.	—Residence, Killamarsh		W. C. Jackson, M.S.A., 6, Stephenson-place, Chesterfield.
do.	—National Palace, Port-au-Prince, Hayti	Adminis. Principal des Finances	G. Baussan, Archt., Hayti.
do.	—St. Patrick's R.C. Schools, Alterations to, Cleator Moor		R. and E. Robertson, Archts., Cleator Moor.
do.	—Beckett-street Car Depot, Extension of, Leeds	Tramways Committee	S. D. Kitson, F.R.I.B.A., Lloyd's Bank Chambers, Leeds.
do.	—Shops and Offices, Silverdale	Equitable Co-operative Society, Ltd.	The Secretary, Victoria-street, Silverdale, Staffs.
do.	—Paper Works, Re-erection of, Barnsley	Charles Marsden and Sons, Ltd.	E. W. Dyson, L.R.I.B.A., 10, Regent-street, Barnsley.
do.	—Renovating Hotel, Aberfan	D. F. Pritchard, Ltd.	C. M. Davies, M.S.A., 112, High-street, Merthyr Tydfil.

ELECTRICAL PLANT.

Oct.	3—Wiring Workhouse Infirmary, Eastbourne	Guardians	A. Hurst, Clerk, Avenue House, Eastbourne.
,,	6—Telephones at Poorhouse, Craiglockhart	Edinburgh Parish Council	R. M. Cameron, Archt., 53, Great King-street, Edinburgh.
,,	7—Electrically Driven Machinery, Melbourne		The Deputy Postmaster General, Melbourne.
,,	7—Generating and Distributing Plant, Ilkley	Urban District Council	F. S. Eckersley, Clerk, Town Hall, Ilkley.
,,	8—Cables, Melbourne	City Council	McIlwraith, McEacharn, & Co. Pty., Billiter-sq. Bldgs., E.C.
,,	8—Low-Tension Feeder Cable, Walthamstow	Urban District Council	G. R. Spurr, Electricity Works, Priory-avenue, Walthamstow.
,,	12—Electric Cables, Brussels	Post and Telegraph Service	Hotel des Postes, Place de la Monnaie, Brussels.
,,	13—Switchgear, Suburban Railways, Melbourne	Agent-General for Victoria	Merz and McLellan, 32, Victoria-st., Westminster, S.W.
,,	14—Cable Distributing Boxes (100), Melbourne	Deputy Postmaster-General	The High Commissioner for Australia, 72, Victoria-street, S.W.
,,	14—Cable, Warrington	Electricity and Tramways Com.	F. V. L. Mathias, Tramways Eng., Howley, Warrington.
,,	15—Turbine (2,000-kw.), South Shields	Corporation	H. S. Ellis, Boro' Elec. Eng., South Shields.
,,	31—Telephone Instruments, &c., Wellington, N.Z.		The Public Works Office, Wellington, N.Z.
,,	31—Machinery and Plant, Damanhour	Egyptian Ministry of the Interior	Mons. Le Directeur, Ministere de l'Interieur, Cairo.
Nov.	4—Insulators, Melbourne	Deputy Postmaster-General	The High Commissioner for Australia, 72, Victoria-street, S.W.
,,	12—Two Alternating-current Voltage Regulators, Dunedin	City Corporation	The Town Clerk, Dunedin, N.Z.
,,	12—Switchboard, Adelaide		The Deputy Postmaster-General, Adelaide.
,,	12—Arc Lamps, Melbourne	Victorian Railways Commissioners	The Chief Storekeeper, Victorian Railways Offices, Melbourne.
,,	15—Overhead Electrical Equipment, Melbourne	Suburban Railways	Merz and McLellan, Engs., 32, Victoria-street, S.W.
Dec.	11—Switchboard, Wellington, N.Z.	City Corporation	The Electrical Engineer, Harris-street, Wellington, N.Z.

ENGINEERING.

Oct.	3—Renovating Piers and Breakwaters, Naples		The Ministerio dei Lavori Pubblici, Naples.
,,	3—Dyke in Harbour, Bisceglie		The Municipal Chambers, Bisceglie.
,,	3—Waterworks, Alsager, Staffs.	Urban District Council	F. W. Stocks, F.S.I., Eng., Town Hall Chambers, Middlewich.
,,	4—Waterworks, Frodingham	Urban District Council	J. Green, Eng., Council Offices, New Frodingham.
,,	6—Air Compressor, Sheerness	Urban District Council	F. W. S. Stanton, C.E., 3, Victoria-street, Westminster, S.W.
,,	6—Widening Railway, near Shrewsbury	L. & N.W. & G.W. Joint Rly. Co.	C. Chitty, Sec., Euston Station, London.
,,	6—Enlarging Well, Wingham, near Adisham		E. A. Borg, Boro' Eng., Grosvenor-place, Margate.
,,	6—Enlarging Storage Capacity at Reservoir, Lisburn	Urban District Council	T. N. Wilson, Town Clerk, Town Hall, Lisburn.
,,	6—Harbour Extensions, Spezia, Italy		The Opere Marittime, Ministero dei Lavori Publicci, Rome.
,,	7—Steel Bridge Girders (80 tons), Paddington, W.	Great Western Railway Co.	A. E. Bolter, Sec., Paddington Station, W.
,,	7—Widening Sand Beck Bridge, Brant Broughton	Claypole Rural District Council	F. A. Watford, District Sur., 13, Milner-street, Newark.
,,	7—Cast-iron Water Main, Sandgate	Urban District Council	C. J. Conquest, Eng., Council Offices, Sandgate.
,,	7—Waterworks, Manea	North Witchford R.D.C.	A. W. Broker, A.R.S.I., Wimblington, March.
,,	8—Ferro-Concrete Bridge, Omagh	Asylum Committee	R. M. Butler, Archt., 27, Dawson-street, Dublin.
,,	8—Waterworks, Kirkby Overblow	Wetherby Rural District Council	H. A. Johnson, M.I.C.E., 15, The Exchange, Bradford.
,,	8—Landing Slip, &c., Whitehouse, Fowey	Harbour Commissioners	H. Bulteel, Eng., Whimple-street, Plymouth.
,,	9—Boiler at Workhouse Infirmary, Raine-street, E.	St. George-in-the-East Guardians	W. Watson, A.R.I.B.A., 54, Chancery-lane, W.C.
,,	10—Two Steam Rollers, Limerick	County Council	J. J. Quaid, Sec., Council Offices, Limerick.
,,	11—Gas Compressor, Warrington	Corporation	W. S. Haddock, General Man., Warrington.
,,	11—Boiler in Church, Holbeton, near Plymouth	Churchwardens	M. R. Bowden, Keaton, Holbeton, near Plymouth.

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THE BUILDING NEWS

AND ENGINEERING JOURNAL.

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OUR ILLUSTRATIONS.

Church of St. Mary, Harrogate. Exterior and interior views, with plan. Mr. Walter Tapper, F.R.I.B.A., Architect.

No. 10, Bishopsgate, E.C. Mr. Gerald C. Horsley, F.R.I.B.A., Architect.

Forest Lodge, Kirkcudbrightshire. View and plan. Mr G. Ramsay Thomson, Architect.

The Royal National Eisteddfod of Wales, 1913: Prize Design for a Welsh Village Institute. Elevations, sections, view, and plan. Mr. C. Owain-ap-Gruffydd, Architect.

Selected Design, Llanelly Council Schools, Stebonheath-terrace. Elevations, sections, and plans. Messrs. J. H. Woodhouse, F.R.I.B.A., and B. Sagar Dean, Licentiate R.I.B.A., Architects.

Ornamental Tile-Work.

ARCHITECTURAL DETAIL.

The necessity for that which we term "detail" in architecture suggests some underlying cause that leads us, almost by instinct, to decorate and ornament at certain positions. We may, perhaps, make the assumption that these enriched points are positions where the eye may rest, momentarily, possibly, in that ceaseless wandering which seems its nature and instinct. If we imagine ourselves faced by a smooth plaster wall, finding there no object of interest to hold our attention, and becoming quickly weary of the featureless surface, we should doubtless fall into a state of mental introspection, becoming absorbed in our own reflections. An accidental splash of colour on such a surface would, no doubt, under the circumstances, attract our attention, and bring our eye to an anchor. It would be "trying" to have to keep the attention upon one line of a railway track, and we might expect to find ourselves aimlessly looking up and down the line. Should, however, a gay-plumaged bird alight upon the rail, the necessary point of detail enrichment would steady the gaze incidentally, it would soothe the nerves, which is a fact worth noting. Under the circumstances assumed, undoubtedly rest would be afforded, for the eye is strictly nomadic, continually moving from point to point. It passes from flower to flower, and rests not on the snow, but upon the snowdrop. Plain surface and monotone enrichment, such as diapering, should, therefore, rather be regarded as a foil, than as affording rest. It would be intolerable to have to look long at, as distinct from through, a sheet of polished plate-glass, and we can well imagine the relief afforded should a gorgeous butterfly suddenly alight upon the surface. Physiologically, somewhat the same soothing nerve action would take place as when a delayed train again moves forward.

These considerations, if admitted by the reader to be just, are of considerable assistance in the endeavour to discover the rationale of ornamentation and significance of architectural detail. They at once substantiate that which we discover by experience—that a very little detail work, if of the best kind, in design and execution, is quite sufficient to give a note of finish to that which otherwise would be naked baldness; and this must be considered to apply equally to all art, and not merely to architecture. The plain book cover, with its simple, lettered title, has, say, a shamrock device impressed in gold. Though apparently so insignificant, it is astonishing to note the effect of such simple ornamentation. Small as is the object, lost almost in the relatively enormous cover, the device steadies the eye, and prevents its vague wandering over the whole surface. Its very solitariness gives it a magnetic power, such as that of the first primrose of spring, starlike, a tiny point of yellow in the yet leafless woodland. Richness in architecture is a summation of such points. How arduously then should we strive to render them truly beautiful, that we may not find disgust, like a bee does in a nectarless flower-cup. The thought provoked is that not so much plain building is attractive; that there is, at any rate, in such an absence of all possible eye offence.

The general argument advanced that ornament and "detail" constitute a real oasis for the eye in a desert of monotonous surface is most clearly evidenced in massy pictures—that is, such as are void of particular interest, but which, at first, powerfully arrest our attention, by their glowing wealth of colour, and their brilliant illumination and broad light-and-shade effect. So soon as we have taken and tasted, as it were, these broad general effects, we anxiously look for some point or points of special interest, something the beauty and interest of which may hold and occupy our attention. Failing this, weariness quickly supervenes. The impressionist holds us for the moment; the bald building, by its bold masses, entertains at first; but both lack that rallying point round which the mind, through the eye, may find satisfaction of its natural appetite for detail and elaboration, be it but a single, elegant coat-of-arms on an expansive façade. All absolutely bald building fails in this respect, arrested as we may be at first with its majestic simplicity. One enriched point, on which we may focus our attention, is a saving grace. A galaxy of marble mosaic and gold is not necessary to this salvation. Homely carving or simple painting suffices.

The modern impressionist water-colour may be interesting or uninteresting, according to whether there is among the general vagueness some definite point on which the eye can rest. A well-executed point saves the picture; but where we fail to find such, we quickly tire. The numberless buildings rendered interesting by just this one piece of true detail is remarkable, and seems to establish the truth of the general argument that the eye seeks to rest on the enrichment, and does not, as often supposed, find this rest from plain surface, which seems rather comparable to the meadow, which forms a background, and is the foil to the buttercup and the daisy, whereon, did we long confine attention to the grassy surface, our gaze would linger. Such, then, being assumed a basic fact of the ethics of that which we term architectural detail, it is to be noted that all traditionary points of enrichment in architecture are "strong" points the end of a column, the top of a wall, the springing and culmination of arching rib, and the summit and angle of the pinnacle. If this is so, then there is not only the attraction of the detail itself, but the natural attraction of the eye towards strong positions. Our regard is naturally towards the end and summit of things, where all ages have culminated adornment. It is natural to run one's eye from plinth upward; we do not naturally review a spire from the weathercock downwards. Moulded piers and the flutes of columns mass as a congeneries of lines, and their terminations bring up the eye with "the round turn." It is just as natural for the draughtsman to draw vertical lines away from his tee-square, and all having a sense of beauty and grace no doubt feel that they should dot or dash the end of each line as completed, in the manner of Samuel Prout, or of Turner in his powerful sketches. The desire is for a graceful ending, as though at every termination of the pencil stroke one exclaimed: "Finis coronat opus!" If, therefore, we have little detail to spare, and no clear idea where to place it, we may always safely have regard to termination, head and summit. An imposing cornice is well placed as the final crown to a wall, where, apart from its practical service as coping, the eye is more powerfully attracted than to any other part of the general mass of a plain façade. If we "stop" a moulding, a certain practical service is performed in masonry; but, apart from this, our eye, running along the mould, is brought up sharply at its termination, and here, therefore, it seems reasonable to place some note of adornment.

The principle does not explain enrichment running along a feature. Enrichment here simply enhances the architectural construction, and should dignify it; as when ball-flower, on clustered-pier hollow, emphasises the clustering, itself a beautiful act of design; or dog-tooth runs round the archivolt, bringing out and giving increased value to the arch construction; and dentil or bracket beautify a cornice, much for the reason that a dotted line—if not more beautiful — is plainly more interesting than a hard line, or a row of pearls or beads more beautiful than the string upon which they are threaded; and, if we alternate bell and pomegranate, the alternation itself gives us enrichment upon enrichment.

ORNAMENTAL TILE WORK. II.

THE USE OF THE PANTILE IN DESIGN.

From a practical point of view the pantile is perhaps the most artistic, productive in its use of a great variety of highly original

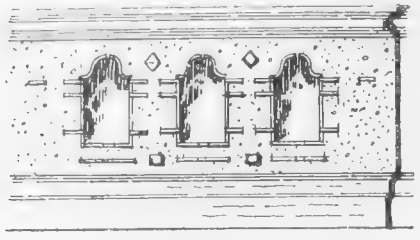


Fig. 1.

designs, combined with fresh, but, nevertheless, many perfectly sound, methods of construction, when introduced in garden walling, either panelled or perforated. Used either as simple heading-pieces, somewhat after the style illustrated in Fig. 1, or with corresponding pantiles at the bottom also, they have a remarkably good effect. At the same time, by their use a good deal of labour is

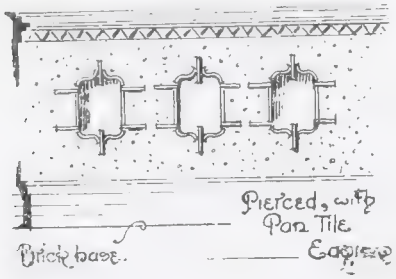


Fig. 2.

saved—which should be recognised at once. By the simple reversion of this tile, at slightly different angles, and the introduction of key tiles, many other pleasing designs may be formed, as illustrated by Figs. 2 and 3. The introduction of the pantile in this manner admits the formation of a large variety of picturesque designs, relieved from the stiffness produced by the totally straight lines used by ordinary tiles or bricks, excepting where the latter might be moulded. In

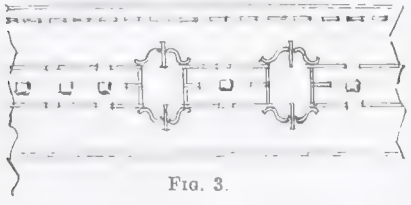


Fig. 3.

ornamental tilework the pantile might very well take the position held by the moulded brick in "Brick Ornament." Although it has only the one form, nevertheless the patterns which can be designed by its means are practically innumerable. By its use alone panels which are quite free in character can be constructed very readily constructed, as shown by the succeeding figure (No. 4). Another variation, giving quite a different

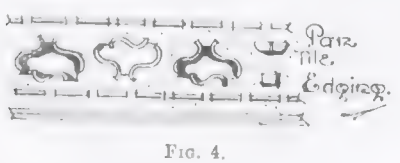


Fig. 4.

design, is shown by Fig. 5, the introduction of key-tiles, etc., at once producing a certain amount of stiffness or formality which is not possessed by the preceding example. Slender panels, with a large amount of graceful contour in their design, can also be formed and used in many combinations, as illustrated by Fig. 6. The same pattern, reversed, also forms an exceedingly free design for a narrow frieze, as indicated also on Fig. 6. Both of these examples would be particularly adaptable and useful for many positions in other schemes of design than those illustrated. The use of such tiles on a further extended scale is productive of quite beautiful and original work in this style, such as illustrated by Fig. 7. The centre pattern especially producing an exceedingly light and graceful design, which can be termed quite flower-like in form, bearing as it does a marked resemblance to a pansy blossom in outline. Such freer forms would prove a decided acquisition in architectural treatment; their

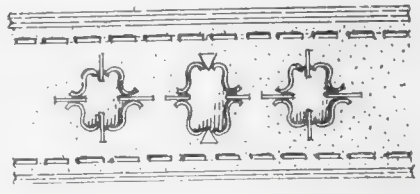


Fig. 5.

value for such positions as terrace walling, etc., backed with flower-beds, should be recognised, in preference to many others of stiff conventional design, mainly based on stereotyped stock patterns of various descriptions. Architecture in general would prove far more artistic by some such developments in other branches. There is certainly the possibility of producing quite a new style by various combinations and development. Fig. 8 illustrates a couple of other panel

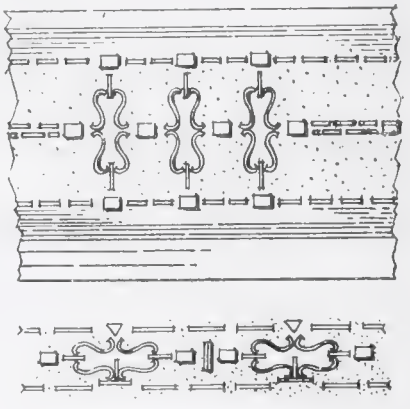


Fig. 6.

designs; the outer ones also being free in character, partake largely of some of the best forms produced by Gothic work. Fig. 9 illustrates further variations possible, and such as can be produced with the introduction of a little raised brick, etc., giving a more

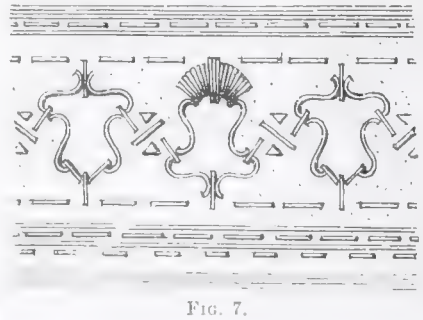


Fig. 7.

decided and stronger character to this class of design. Whilst the designs in these first two sections have been shown as mainly applied to the particular branch of pierced walling, to which they are admirably adapted, many of them are, nevertheless, applicable to other positions. Either singly, as line ornaments—frieze-work, etc.—or grouped in larger set patterns for gable work, they would prove a decided relief from the monotony of many overworked forms. Tile work, on these principles, could be easily and readily applied to concrete construction, either in slight raised patterns of single, double, or treble lines, or as flush-

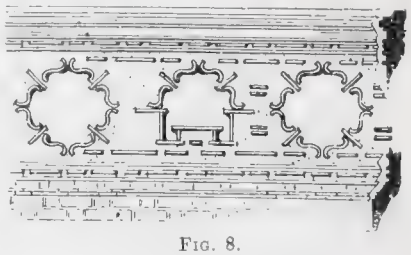


Fig. 8.

face patterns, producing a slight colour relief, alone. Such patterns might be varied by being set with a wide joint, thus forming broken reliefs, similar to the broken line system. This system, in most cases, produces a softer effect, which is lacking in the continuous-line patterns; the latter often proving

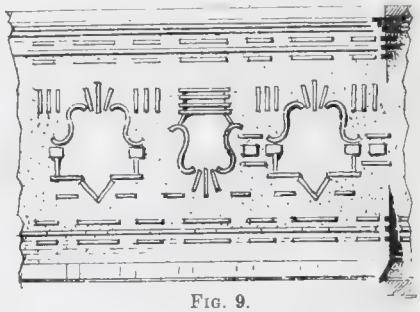


Fig. 9.

somewhat harsh in character when necessarily confined to geometrical outlines. Again, the slender nature of the tile would enhance its value in these methods of ornament, producing, as it does, pattern-work of a somewhat delicate character. This, in many instances, would prove far more valuable than the heavier types, formed, or mainly formed, with brick.

W. G. Kerby, Architect.

RURAL HOUSING FROM THE LANDLORD'S VIEWPOINT.

In a paper read before the Church Congress at Southampton on Friday, Lord Salisbury discussed the problem of rural housing. They could not up to now rely upon building a good cottage for less than £150. Six per cent. on the outlay, if the cost of repairs was included, was the least that must be charged for rent if the cottage was to be a commercial proposition. Six per cent. on £150 meant a rent of £9 a year, that was of just under 3s. 6d. a week. To this must be added rates, bringing the total weekly outgoing to about 4s. a week. But the current cottage rent in many parts of England was 2s. or 2s. 6d. a week, and in some places less. Therefore, to meet an expenditure of nearly 4s. a week the owner only got about half the value of the cottage. Two conclusions followed—(1) It was clear that cottages could only be built on these conditions at a dead loss. (2) It was not surprising that there was a dearth of good cottages. He denied that everything that was wrong in the countryside was due to the rapacity of the squire. A twin martyr of the squire was that most wrongly-abused man the speculative builder, who if his brother, the squire, had insisted on an economic rent, would have stepped into the breach and provided the supply. To raise the labourer's wage would be altogether insufficient, the primary need was to cheapen the conditions under which cottages were produced. Cottages were probably never built to pay. Certainly good cottages had not, in fact, paid for generations. And now that the old cottages became not good enough and the new cottages not numerous enough, the squire, though willing that the old uneconomic system should continue in respect of existing

cottages, was neither willing nor able to extend it and to multiply the building of cottages at a dead loss. And if the squire was not willing they might be sure no one else was.

Of two possible remedies one was to transfer the necessary loss to the shoulders of the long suffering taxpayer. It might come to that, but there were two formidable objections. First, it was the final abandonment of building cottages by private enterprise. Secondly, there seemed to be no limit to the amount of the public burden so to be undertaken. The other possible remedy was to accommodate the conditions of labourers and of cottage building to economic laws, so that the difficulty might disappear; in other words, to prevent cottage property being necessarily a dead loss. In the first place, in parts of the country where the labourer was underpaid he might be paid a better wage; but no conceivable rise of wages which would not cripple the agricultural industry would suffice to enable him to pay a higher rent. Therefore, the remedy would be to reduce expense by means, first, of cheaper credit provided by the use of the State credit; secondly, by co-operation among landowners; and, thirdly, by cheapening cottage construction.

Here an atmosphere of common-sense was most important. It was downright lunacy to say that they must not use wood for building in the country because in towns wooden buildings might lead to disastrous fires; or to say that all rooms must be 8ft. high, when these small rooms, if the window was shut, were like the Black Hole of Calcutta, whether they were 7ft. or 8ft. high, while if the window was open they were, in any case, all right. Overcrowding, it was true, was unhealthy. But, except damp, there was generally nothing else in housing which mattered to the health of the occupiers. There must be comfort; but, above all, they must cut their coat according to their cloth. Neither baths nor parlours were the saving of souls, nor did they make any substantial difference to the public health. Only by expenditure reduced to a minimum could they reduce the difficulty to economic conditions. It needed no exertion to demand public money, or to gush about the comforts of the poor; but to check uneconomic impulses and to give personal attention to organisation and to petty details of construction was laborious. It was, however, the better way.

HOME INTERIORS.*

The small householder, at a rental of from £25 to £75 a year, has not had much done for him yet, as far as good advice as regards the economical and effective decoration of his home is concerned, and the result of Mr. Lovell's twenty-five years of research and study will prove a boon to decorators and designers of such dwellings, and all concerned in their adornment.

The suggested decorative treatments are so designed that they can be carried out at little or no greater cost than the ordinary methods now in vogue, and in most cases they are treated as tenant's fixtures. The schemes are based on actual rooms, the most usual in size and shape, and such as are to be found in the houses of rentals quoted above. To determine upon an appropriate scheme, and to enable one to judge of the effect when completed, most of the rooms are represented by two large fac-simile water-colour plates, reproduced from originals, one of which shows a perspective view of the whole room, while the other shows the treatment of the windows, the arrangement of curtains, draperies, and casement blinds, and their surroundings.

Accompanying these colour plates, each room has one or more plates of working detail plans, with carefully written notes, explaining the principles governing the scheme, with full instructions, so written as to enable a capable craftsman to carry out the work without skilled supervision.

A special feature of the work is a series of colour charts and revolving discs, which provide an exact method of determining the most effective colour contrasts and combinations, and what is even more important, an equally effective means of avoiding bad ones. These colour charts and discs will enable even the tyro to determine the most original and striking colour combinations. For example, given the redecoration of a room in which the furnishings possess a certain dominant scheme of colour which cannot be altered, by means of the colour charts it is possible to arrive at the colour scheme which will best harmonise with the furnishings—a result which is always one of serious concern, and of very doubtful success if arrived at under haphazard conditions.

Mr. Lovell briefly explains the theory of colour production, and encourages greater boldness in the use of colour in the decoration of the home. It is quite true, as he says, that in these Northern climes there is a shrinking from the dignity of pure colours, a fear that they may be termed gaudy; there is a general lack of courage in applying any colour to one's surroundings excepting tertiary tones and greys. Already, however, the "colour sense" is awakening, and the feeling for pure colour is growing. The movement is one which is likely to be accelerated year by year; may it be governed by taste and judgment. The main barriers are the want of accurate knowledge of colour combinations and the lack of courage in their use, inducing restraint and limitation to drab greys and sombre shades.

There are over thirty-eight large fac-simile water-colour plates, embodying schemes for the decoration of dining-rooms, drawing-rooms, living-rooms, bedrooms, bed-sitting rooms, nursery, parlour, halls, study, bath-room, passages, etc., executed in various schemes of colour and decoration. Each scheme is accompanied by a complete set of half full-size detail drawings of every item of constructional detail shown in the scheme, and complete working instructions are given, which are clearly written. In each of the colour schemes there is a colour plate devoted to the important and often difficult problem of window draperies.

We can cordially recommend the work to all, and we trust it will obtain a far more general circulation than is usually the case. Its educational value to the house-dweller should prove gratifyingly satisfactory. By the designer and decorator its worth will at once be recognised.

* Home Interiors: a Practical Work on Colour, Decoration, and Furnishing. By R. Goulburn Lovell, A.R.I.B.A., M.S.A. London: Caxton Publishing Co., Ltd., 130, Surrey-street, London, W.C. Section 1. 15s.

ON HIGHWAYS.

By C. H. Cooper, M.Inst.C.E.

In a paper read on Monday before the Society of Engineers, the author directed special attention to the failure of local authorities to realise the necessity of providing highways sufficient for present-day traffic. Central control has become a necessity in this country, where there were no fewer than 1,883 highway authorities, while three Government departments have a voice either in granting loans or regulating traffic, but have practically little control over the authorities mentioned. The law of highways is founded on the Highways Act of 1835, modified by 27 subsequent Acts (and various orders made thereunder), only four of which have reference to motor-driven vehicles. It is time that all these should be replaced by a single Act that should incorporate provisions to meet present-day requirements.

Although road crusts are as a rule carefully constructed, the indifferent manner in which excavations for mains, etc., are filled in has a destructive effect. The author is strongly of opinion that all trenches should be filled in by the local authority at the expense of the undertaker.

The increase in the tonnage of traffic during the last seven or eight years has naturally increased the cost of maintaining highways, but owing to the introduction of flexible tires this cost has not increased in proportion to the increase in tonnage. If only flexible tires were used out of the 2½d. difficulties of the road engineer would be eliminated.

On the first introduction of the motor car it was chiefly a luxury of the rich, and the demand for its taxation to provide for the maintenance of the roads seemed reasonable. The motor-'bus, traversing the Metropolis and its suburbs by no fewer than 89 routes, may fairly be considered a democratic vehicle, and it is surprising to find such an outcry for increased taxation on these vehicles.

The capability of the road crust to support traffic is greater if the rain that falls on the surface can be prevented from penetrating. This condition can only be fulfilled in the case of crusts covered with a considerable layer of tarred macadam or asphaltic compositions, or by the use of wood or asphalte with a layer of concrete beneath.

The difficulty in forming economic road crusts is the uncertainty as regards the traffic to be carried. A crust that can be formed at a total cost of say 7s. per yard super. is quite incapable of carrying rapid heavy traffic such as motor omnibuses; in fact, wood-paving laid on 6in. concrete, which is an expensive paving, can no longer be considered reliable for such a class of traffic, the concrete having to be increased to at least 9in. in thickness.

Nations may now be considered more or less trading concerns competing one with the other, and unless a nation is provided with efficient internal communication, it cannot maintain its position in the world.

HARROGATE: ITS SEWERAGE AND SEWAGE-DISPOSAL WORKS.*

The borough of Harrogate is situated on a high tableland between the rivers Wharfe and Nidd, in the West Riding of Yorkshire. It comprises an area of 3,276 acres, with an estimated normal population of 34,000, which, during the height of the season, is increased to a maximum of about 45,000. The number of inhabited houses is about 7,500, giving an average number of persons per house of 4.53 and of 6 during the season. The rateable value is £269,202 (1912). The death-rate for 1912 was 9.3 per 1,000. The average rainfall is 29.65in.

SEWERAGE AND SEWAGE DISPOSAL.

The sewage of the town was formerly treated on several irrigation farms, the principal of which was a farm of some 300 acres on the northern boundary of the borough, and the remainder consisted of five small farms adjoining various parts of the borough boundary. Owing to the inefficiency of the large farm, due to the unsuitability of the land by reason of its clayey subsoil and proximity to the town, the town council decided in 1900 to embark on a more efficient method of sewage disposal, and Mr. E. W. Dixon was instructed to prepare a scheme on up-to-date lines. An excellent site was selected about six miles to the south of the town, midway between the villages of Spofforth and Ribston, and it was the original intention to gravitate the whole of the sewage to this point. The borough lies approximately on a ridge running east and west, and in order to drain the northern slope of the town to this site it would have been necessary to have driven a tunnel to the south side. There would, however, have been a certain amount of risk in carrying out this work of endangering the mineral springs on which Harrogate's prosperity depends, and acting on the advice of an eminent geologist who had an intimate knowledge of the district, it was decided to abandon the idea of draining the northern portion to this site and to find a site for the treatment of this section to the north of the borough. A site was chosen on the borough boundary adjoining the river Nidd and about two miles from the centre of the town. The greater portion of the district is drained on the partially separate system. Speaking generally, the surface water from

* From a paper read by Mr. C. E. Rivers, Borough Engineer of Harrogate, at a District Meeting of the Institution of Municipal and County Engineers at Harrogate, on Oct. 1.

the front streets, the gardens, and front portions of the houses is drained into separate surface-water drains, and the rear portions of the houses, back yards, and back streets are drained into the sewers. The southern system of sewerage drains approximately a normal population of 16,500, including that of the parish of Pannal (which is under the jurisdiction of the Knaresborough Rural District Council). It varies in level from 600ft. to 210ft. above Ordnance datum, and evolves itself into two main sewers connecting at Bilton Court, on the Wetherby-road, and thence to the southern disposal works by a 33in. brick sewer, with two inverted siphons, and a minimum gradient of 1 in 933. The level at the outfall is 175ft. above Ordnance datum. The northern system drains approximately a normal population of 18,200, varying in level from 520ft. to 205ft., and eventually becoming a sewer of 30in. diameter, with a minimum gradient of 1 in 1,000. The level of the outfall is 202.6ft. above Ordnance datum. A number of storm overflows are provided on each system, which are fixed at six times the estimated maximum dry weather flow. The majority of the manholes in the town are fitted with sealed covers, and ventilation is provided by means of about 110 standard ventilating shafts 30ft. and 40ft. in height; but where they would be objectionable, on account of the height of the surrounding buildings, or for other reasons, Webb's patent ventilating lamps are erected.

Harrogate being a seasonal town with a fluctuating population, the dry-weather flow of the sewage varies considerably at each works, the flow to the southern works varying from 650,000 to 730,000 gallons per 24 hours, and to the northern works from 750,000 to 920,000 gallons per 24 hours. During the census of 1911 there happened to be a dry period, and this gave an opportunity of arriving at the dry-weather flow per 24 hours per head of the population, which worked out at about 42 gallons. This is somewhat in excess of the water consumption, which is estimated at 35 gallons per head per diem. The site upon which the southern outfall works have been constructed has an area of 74 acres. The soil is of a light friable character overlying magnesian limestone, and is excellent for effluent irrigation; in fact, in a dry period it has absorbed the greater part of the effluent, only about 20 per cent. reaching the Crimple, a tributary of the river Nidd, into which the effluent sewer discharges.

The sewage, on first entering the works, flows through a detritus chamber provided with a sloping floor for the deposition of the mineral matter and grosser solids. This chamber is in duplicate for cleansing purposes. Between the outfall sewer and the detritus chamber is a fixed weir over which all the sewage exceeding in volume three times the dry weather flow passes on to a storm water irrigation area of about 11½ acres. This area is underdrained to a depth of 4ft., the drains discharging eventually into the main effluent sewer. From the detritus chambers the sewage flows through distributing channels to four continuous flow tanks, which have a capacity of 200,000 gallons each. These tanks have a depth of 7ft. to top water level, and each tank is provided with three inlets and outlets submerged 3ft. 6in. Only two of these tanks are being worked at the present time, as it is found that the best tank effluent is produced under these conditions, due, no doubt, to the sewage arriving at the works in a partially septic state owing to its long transit from the town and its passage through about a mile of inverted siphons. The tank effluent passes to three measuring and dosing chambers provided with recording gear and Candy Whitaker siphonic dosing-valves. The percolating filters, five in number, have a diameter of 105ft. each and a depth of filtering medium of 6ft. 3in. The beds are dosed intermittently at the rate of about one gallon per super. yard of area per dose, and are treating a maximum dry-weather flow at the rate of 70 gallons per cubic yard per 24 hours. The distributors are of the Candy-Whitaker buoyant type, fitted with mercury seals. The walls are of slag, built dry, with a batter of 1 in 4. The medium is coarse in character, graded from 5in. to 1½in.; two of the beds are of hard-burnt furnace clinker, two of old slag from the Middlesbrough district, and the fifth a mixture of the two materials. The medium shows no signs of disintegration, and no trouble has been experienced with pooling or clogging. The fly nuisance, however, exists, but has not been excessive. From the filters the effluent passes to a set of humus tanks, and thence by carriers to the irrigation area of about 50 acres. With the exception of one or two points this irrigation area is not underdrained; but an intercepting effluent sewer is laid along its lowest levels with half-jointed pipes at an average depth of 4ft. The final affluent is discharged into the Crimple at a point about three-quarters of a mile from the works. About seven acres of arable land are reserved for the disposal of the sludge, the sludge problem at these works up to the present time being a fairly easy matter. The tanks are sludged out five times per annum. The supernatant water is not decanted, and the whole contents of a tank are gravitated to and carefully irrigated on this area. This particular area of land has been used for this purpose since 1905, and at the present time shows no signs of being overdosed. The crops usually raised are mangolds and turnips, and are of excellent quality. A manager's house, together with stabling, etc., is erected on the site, and the total cost of the works was £22,000. The cost of administration is low, amounting to £200 per annum.

TABLE.—All Results are in Parts per 100,000.

	Crude Sewage.	Tank Effluent.	Filter Effluent after Humus Pit.	Final Effluent.
Physical Characteristics.				
Liquid	Turbid dirty grey.	Turbid brownish grey.	Clear.	Clear.
Sediment	Some dark grey	Some dark grey.	Small brownish grey.	Very small greyish.
Odour	Sewage.	Sewage.	Slightly earthy.	Slight.
Reaction	Slightly alkaline.	Very slightly alkaline.	Very slightly alkaline.	Slightly alkaline.
Results of Analysis				
Total solids	76·3	56·1	58.2	61.4 ash 36.4)
Solids in suspension (dried at 100° C.)	25·9	9.5	1.2	—
Solids in suspension—ash	5.2	1.4	0.6	—
Solids in solution (dried at 100° C.)	50·4	46.6	37.0	—
Solids in solution—ash	27.9	28.0	28.0	—
Chloride (in terms of sodium chloride)	11.7	11.0	9.75	8.25
Ammoniacal nitrogen	4.130	4·04	0.010	0.007
Albuminoid nitrogen	0.495	0.25	0.038	0.009
Organic nitrogen	1.426	0·44	0.089	0.022
Nitric nitrogen from nitrates	Nil.	Nil.	2.67	1.74
Oxygen absorbed in four hours at 26.7° C.	5.49	3.66	0.49	0.08
Hardness (in terms of $CaCO_3$) Total...	38.8	22.1	18.3	36.0

The site of the northern outfall works has an area of 53 acres. The works and treatment are very similar to that at the southern works, and varies chiefly in the treatment of the storm-water and the disposal of the sludge. The storm-water—all sewage exceeding three times and under six times the dry-weather flow—is conducted to either or both of two stand-by sedimentation tanks which are connected to a rectangular percolating filter-bed 4ft. 6in. in depth, the effluent from which is discharged direct into the stream. The sludge from the whole of the tanks is gravitated into a sludge well, and is then pumped on to high-level land into a number of shallow lagoons. These lagoons are constructed on a bed of hard furnace clinker about 15in. in depth covered with a layer of fine clinker breeze. The lagoons are then filled with a depth of 9in. of sludge, which, in a week of ordinary dry weather, is reduced to about 4in., and is then removed and disposed of to the neighbouring farmers, who are now beginning to appreciate its value for manurial purposes. The liquid draining from the lagooned sludge is gravitated back into the main sewer. The power for pumping purposes is derived from the Oak Beck, a stream passing through the works which receives the greater portion of the final effluent. Prior to the sludge being valved off from the tanks, the supernatant water is decanted by menas of a siphon, and is treated on the storm-water filter. The table gives a recent analysis of samples of sewage and effluents from the southern works made by the staff of the West Riding Rivers Board, and kindly supplied by Dr. Maclean Wilson. The samples of crude sewage were taken half-hourly for 24 hours, and mixed proportionately to the flow, and the samples of the effluents were taken every three hours during the same period.

THE REPAIRS TO ST. MARK'S.

The Rome correspondent of the *Morning Post* describes a visit to St. Mark's, Venice, accompanied by Signor Mazangoni, the architect in charge of the repairs, and his assistant, Signor Ottolme. It is expected that in December the angle of Sant' Alipio—the portion of the fabric most in need of repair—will be finished. This corner of the building, which is nearly opposite the entrance to the Merceria, was found to rest on the most flimsy foundations. These have now been replaced by supports no less substantial than those of the new Campanile. In the course of the work various important discoveries have been made. A cemetery full of human bones, dating from the 9th or 10th century, came to light, and these remains have been placed in a large coffin and reburied in situ. Many portions of the two older churches which preceded the present basilica have been found. At the angle of Sant' Alipio a capital of this second church, dating probably from the time of the Doge Domenico Contarini in 1063, is now visible. It will not, however, long remain so, for in a few days' time its former shell of marble will be replaced over it so as not to destroy the symmetry of the basilica, and photographs alone will tell posterity what it was like. For a similar reason two splendid Byzantine peacocks have been reinterred in the wall, because, unfortunately, they were carved at the back of another richly-worked stone. Inside St. Mark's the ponderous scaffolding still stands beneath the Arch of the Apocalypse; but work is now going on there, and in two years' time, if all should be well, it will be removed. There is only one other part of St. Mark's which is still being repaired. This is above the chief door leading into the Atrium, where there is a huge crack in the wall. In order to repair this it has been necessary to remove the mosaic, but this will be shortly put back in its place. In the case of two other designs in mosaic—the Death of the Virgin and the Raising of Lazarus—new walls have been substituted for the old and cracked masonry without removing the mosaic covering at all. Behind several of the cupolas also new mortar from Casale Monferrato, similar to that used for the new Campanile, has been substituted for the old and crumbling stuff, which scarcely kept the bricks together. At present 34 workmen and 10 workers in mosaic are being employed on the repairs of St. Mark's.

The Logetta of Sansovino, at the base of the Campanile, is not quite finished, for one end, that towards the lagoon, is not completed. Otherwise the new tower has been finished since April 25 of last year. Some

five or six other Venetian churches besides St. Mark's are still under restoration, notably Zanipolo (SS. Giovanni e Paolo), and at Torcello Santa Fosca is not yet finished.

PURITY OF WATER SUPPLIES.

Mr. Joseph Parry, waterworks engineer, Liverpool, read a paper last week at Glasgow at the annual meeting of the Municipal Waterworks Association on "A Standard of Purity for Public Water Supplies" at the afternoon sitting. He said that the law required undertakers of waterworks to provide a supply of water that was pure and wholesome. In the strict meaning of the word as expressed by H 2 degrees, there was no pure water to be found on the face of the globe. He agreed, however, that the highest possible standard should be aimed at, leaving the interpretation and application of the standard to the varying circumstances of each case in the light of practical experience, and in accordance with the advance of scientific knowledge.

Suggestions had been made, chiefly in Germany, as to the total number of bacteria permissible in public water supplies and as to the percentage that ought to be taken out by filtration systems. These generalisations were misleading, especially for comparative purposes. It could not be too clearly understood that no such standard could safely be set up so as to be capable of general application. There was room for great diversity of opinion in regard to standards of quality, but he thought there could be no difference of opinion among those who understood the subject as to the desirability, indeed the urgent need, of adopting standard methods of analysis.

The question of the uniformity of methods was of still greater importance when they came to bacteriological examinations, for there the confusion was still greater. International standardisation might be remote, but there was no reason why British standardisation should not be adopted without delay.

"DIRECT" MUNICIPAL LABOUR IN AMERICA.

The Master Builders' Association of Boston congratulates its members on the secretary's monthly letter that the membership is very much larger this year, with the fiscal year only one-half expired, than it has been any year for the last twelve years. The total membership to date is 282. The average for the past eleven years preceding 1912, when systematic solicitation for membership began, is 244; the lowest in any year (1904), 222; the largest in any year (1911), 259. The question of whether it is advisable for a municipality to undertake to execute public improvements by "direct labour" rather than by a competitive contract system has lately been the subject of an investigation by a committee of the Builders' Exchange of Cleveland; and the report made to the board of directors, reports the secretary, "has been placed in my hands by Mr. Edward A. Roberts, secretary of the Exchange. The document is interesting, and the subject an important one. Not much evidence was obtainable in favour of the direct labour method, and the conclusions of the committee in objecting to this system were as follows:—

"'First, inquiry shows that this plan results in increased cost. With the City [Cleveland—Ed.] handicapped for funds, every effort should be made toward conserving the public treasury. Second, changing administrations endanger the success of improvements and result in loss of efficiency in their conduct. Third, the temptation by direct labour employment to conserve political ends is such as to disturb the business aspect of administration. Fourth, it is obvious that a municipal works department cannot be successful unless it is constantly employed. It is also clear that work cannot or should not be created with the sole object of keeping such a department employed. Thereby is a temptation created to make work last as long as possible. Fifth, in the municipal conduct of improvements there is every opportunity for expense to mount and no safeguard to prevent it. No limitations are fixed for the expenditure as at present conducted. Sixth, when depreciation of equipment, time of officials, and other overhead charges are included, we believe it will be apparent that city governments as now constituted are not properly organised to conduct projects requiring technical skill and knowledge gained by experience.'

"While the results of the committee's investigation are not surprising, and, in fact, are what might be expected, it is important to consider that the question of 'direct labour' as applied to the execution of work in private lines may be viewed much more favourably. By 'direct labour' I here mean to indicate the execution of work on a 'percentage basis,' or on that of 'cost plus a fixed sum,' in distinction to the ordinary competitive contract. In the matter of public improvements the case for 'direct labour' falls to the ground through several defects, as the objections of the Cleveland committee clearly show. One of the most important of these is the lack of personal integrity in the human element. This serious defect is one which is hard to escape in any municipal plant, but when we turn to the side of private enterprise we find a more hopeful situation. There the personal contacts are more intimate, and it is possible for owners to utilise a 'direct labour' system to great advantage by the selection of capable and conscientious builders, to whom they may confidently allot the work upon a percentage or cost plus fixed sum basis, feeling sure that it will be done efficiently and economically. I say that this is possible—I do not mean to say that it would be possible to do all work upon this basis, because it requires 'selected stock' in the matter of contractors and owners as well. But it should be increasingly possible, as the years go on, to find contractors and owners equipped mentally and morally for the execution of work upon the plan indicated. It is an ideal in the building industry toward which our faces should be set."

THE INSIGNIA OF THE MAYOR OF COLCHESTER.

The town of Colchester is probably better known by reason of its possession of the Oyster Fishery of the Colne and Pyfleet and other creeks in the vicinity than because either of its ancient history (which links with the earliest Roman occupation of England), or by reason of the extensive garrison housed within its borders.

The oyster layings have from time immemorial belonged to the corporation, and although they have not always been the source of wealth which they are now, yet the corporation possesses the evidence of early affluence in an insignia of particular importance acquired by purchase and gift, principally during the last two centuries, and it includes a large and massive silver gilt mace, 4ft. 10in. in length, wrought by Edward Jennings, a London goldsmith, in the year 1728, it being recorded that over 200 ounces of corporation plate was disposed of to defray the cost. The mace is certainly an imposing affair, and is in constant use. There are also four small silver-gilt maces. The mayor's gold chain of office is particularly handsome, and was presented in 1765 by Leonard Ellington, of London. There is an attached pendant, too, with the chain, added nearly a century and a quarter later, in 1887, by the mayor of that year, Mr. Horace G. Egerton Green, in commemoration of Queen Victoria's Jubilee. The loving cup, of silver-gilt, is displayed at the annual oyster feast. It is indicated in ancient records as the gift of a certain Abraham Johnson in 1673. The mayor's silver "Theatre Ticket," which is probably unique in this country, dates from the erection of the first theatre on a site behind the Moot Hall in 1764. The well-known silver oyster bears the London hall mark of 1804-5, and there are two oyster gauges of brass. There are two silver oars appurtenant to the office of water bailiff, and they date from the year 1804, but these oars probably replaced older ones. They are emblematical of the Admiralty Jurisdiction conferred under a Charter of Charles I. A very massive silver salver was presented to the corporation by a loyal burgess in 1844, and a silver cup was bequeathed to the corporation by the late Major Newell. The treasurer's key, indicative of the control of the town resources, was presented by Mr. C. R. Gurney Hoare, J.P., on his relinquishing the office of borough treasurer, and it makes an interesting modern addition to the collection. There is also a mayor's silver seal, a handsome mother-o'-pearl and gold snuff-box, two silver snuff-boxes, a silver inkstand, and the silver-gilt key of the late town hall, the present town hall being an architecturally fine modern structure erected about fifteen years ago.

The silver "Theatre Ticket" is among the least usual of the items, it having for 150 years been permitted to frank the mayor's use of the reserved box in the theatre. It is believed to have been made and the privileges attached to it granted at the time of the erection of the first theatre, a century and a half ago. Apparently the original edifice was demolished and a second building erected 70 or 80 years ago.

The present building is a landmark in the town. It is built of brick, with a severe Classic front, possessing spacious reception and crush rooms and a wide stage, while the auditorium has three tall tiers. It is situated in the St. Botolph's quarter of the town, which is the ancient part of the borough abutting on the garrison field, and has not only enjoyed many successful theatrical seasons, but has been the scene of many a romantic celebration of departure and return of troops.

The freehold theatre is to be offered for sale by auction by Messrs. Weatherall and Green in London on October 21 as a going concern. The building is substantial and the theatre prosperous, and having regard to the fact that the site can point to 150 years' continuous theatrical use, it is anticipated and hoped that whatever changes may occur in the building, there will still be a continuance of the use by the mayor of the silver "Theatre Ticket."

RENAISSANCE ARCHITECTURE.

Mr. Banister Fletcher, F.R.I.B.A., delivered on Monday the first of 24 University Extension Lectures on "Renaissance Architecture" at the Victoria and Albert Museum. He described the nature and scope of the subject, which has become a necessary part of a general education; for architecture is a material exponent of civilisation, a record of human aspirations and activities, and modern design is founded upon ancient precedent. Thus a knowledge of architecture, more especially of the Renaissance style which comes down to our times, should form part of the equipment, not only of the architect, but of artists and craftsmen, antiquaries and connoisseurs, photographers and journalists, and even of authors, for a story without the mise-en-scène supplied by buildings is like a play without stage scenery. Teachers now realise that architecture is more necessary than dates for understanding general history and the social life of our ancestors. For the traveller, too, such knowledge is essential to appreciate the purpose and design of the buildings and ruins that he visits, while those who cannot travel will be transported by the aid of some 1,200 lantern views to the actual buildings and their surroundings. Mr. Fletcher reviewed the evolution of ancient and Mediæval architecture that led to the Renaissance style, which at this very moment is being used for the refacing of Buckingham Palace.

He dealt with the influences of the period, such as the writings of Dante, Petrarch, and Boccaccio, the newly-discovered MSS. of the classic authors, the fall of Constantinople, the inventions of gunpowder, the mariner's compass, and printing, all of which helped

to promote that new spirit of inquiry which led to the Reformation. From Florence the new style spread in the 16th century through Europe, modified by local influences, such as climate, material, and historical events. The lecturer showed Renaissance buildings in Italy, France, Germany, Belgium, Spain, and England, and said that he should endeavour to introduce the atmosphere of the Renaissance, and show the connection between history and architecture, and hoped that at the end of the course they would so appreciate old buildings and their associations as to help forward the improvement in English architecture. The remarkable examples of Renaissance architecture in the Museum will be systematically studied, and thus the utility of the Museum will be developed.

The lectures are given every Monday at 5 p.m., in the Lecture Theatre of the Victoria and Albert Museum, South Kensington, S.W. The next lecture will be "A Comparative Analysis of Mediæval and Renaissance Architecture." Particulars can be obtained from the hon. secretary, 10, Woburn-square, W.C.

THE ARCHITECTURAL ASSOCIATION CAMERA, SKETCH, AND DEBATE CLUB'S EXCURSION TO CHARTRES AND DISTRICT.

We left on Thursday evening, July 24, at Waterloo for our annual foreign excursion, in the best of spirits, and after a pleasant crossing from Southampton we found ourselves at Havre. From there we took the boat up the Seine to Rouen. We only spent Friday afternoon there, and so only had a general rush round the town. Most of the party had been there on former occasions, and so only made for certain buildings they specially wanted to see again. Next day we took the train to Chartres. Sunday and Monday were spent in Chartres, visiting its various architectural sights. The cathedral naturally proved to be the chief attraction. It is indeed a wonderful building, the proportions being so good, and at the same time some of the carving is marvellous. The west front is very dignified, and both the transept entrances are a mass of carved statues and statuettes. The 13th-century glass is very fine, containing so many of those good, rich colours. Of the churches of Chartres, that of Saint Pierre is the best. It is of the 11th, 12th, and 13th centuries, and has some very good flying buttresses. There are also twelve interesting enamels on copper, representing the Apostles, in the choir of this church. The Church of Saint Andre, now much destroyed and used as a lumber store, has a fine Romanesque west front, with some good capitals to the doorway. The Maison du Docteur is an interesting house, with a good Renaissance exterior. There are a good many old Gothic houses in the town, but most of them had been severely restored. The Hotel de Ville and Museum is a 17th century building, and is quite a good example of the use of brickwork for the decoration and stonework for the surface. The Porte Guillaume, the only remaining gateway of the town, is a good example of military architecture of the 14th century.

On Tuesday we visited Maintenon. On the way we passed through the village of Saint Piat, and the church there contains an Early Christian sarcophagus of the 4th century. The carving is very good, and in a good state of preservation. The chateau at Maintenon was the chief attraction. It was built during the 16th and 17th centuries. It is very prettily situated, with the river at the back and [illegible] in the grounds at the rear of the chateau is the aqueduct commenced by Louis XIV to conduct the water of the River Eure to the gardens at Versailles. It was [illegible] completed, and is now in a state of ruin.

We left Chartres on Wednesday for Chateaudun. The first part of the journey was taken on a tram as far as Bonneval, passing through fairly good country. Bonneval proved to be a nice old village, with, however, nothing of special architectural interest. The chateau was the most interesting building at Chateaudun, and most of the day was spent there. It was built during the 12th and 15th centuries, and is too well known to require any further comment. There are several interesting old timber houses in the town, especially the one in the Rue Saint Lubin, and a house called the Maison des Architectes has a peculiar Renaissance tower at the back. There was not sufficient time to visit the churches, but they looked quite good from the outside. Thursday was spent in Chartres taking photographs and making sketches.

On Friday we went to Rambouillet, to visit the official Palace and its grounds. It contained some good panelled rooms of Louis XIV. period, and a small room called Marie Antoinette's bathroom, completely finished in Dutch tiles, giving a very pleasing effect. Two members of the party rode back to Chartres, and were well repaid for their extra exertions by passing through a small village called Gallardon, which has a very good church. The 15th-century choir is raised about 5ft. above the nave level, and is built in a stone of a nice blue-grey colour, which shows up against the rest of the building, which is of the usual stone colour. There is also a very good half-timbered house in the High-street, which has some interesting carving on its front.

Saturday saw the first break up of our party, one member leaving for another part of France. The rest spent the day at Dreux, a town which contains many architectural buildings of interest. The Church of Saint Pierre is a good exmple of 12th and 15th century work. The west front is very pleasing, with good doors, delicately carved. The Hotel de Ville (1512-37) is an interesting example of the blending of the Gothic and Renaissance work. There are several interesting houses, especially a building called the Hospital. The modern Chapel Royal, built for the family of the Orleans, was not visited because it was on the top of a hill, and no member felt inclined to mount the incline. On our ride back to Chartres we passed through an interesting town called Nogent le Roi. The church was quite good, with interesting bits of Renaissance work tacked on to the Gothic building.

Sunday morning was spent in Chartres, and during the afternoon we went for a bicycle ride round, passing through a very fine forest. We broke up our party on Monday, some going to various parts of France, and the rest took the train to Havre and crossed by the night boat, after having spent a very pleasant week in France.

W. Harold Jones.

PRESENT-DAY ARCHITECTURE AND THE POSITION OF THE ARCHITECT.*

By John Brooke, F.R.I.B.A.

In my address to you this evening I must first express my sincere appreciation of the honour you have done me in electing me as your president for a second year. The Manchester Society of Architects is one of the most important of the provincial societies, both as to the number of its members and the area of its province, and has, I believe, a record of good work second to none amongst the allied societies. Fortunately for its president, much of the responsibility attached to his position is relieved by the ready and effective assistance which he receives from the members of the council and members generally. We are also most fortunate in the fact of our being in a very sound pecuniary position, thanks to the thoughtful benefaction of one of our late members. We are thus enabled to do many things which would be otherwise impossible if we were dependent on the contributions of the members only, and we are able to provide excellent premises and all the accommodation of a club, from which the members greatly benefit. We have also an excellent library, which contains a most valuable collection of books, to which the members have access, so that in all respects the society has good reason to be proud of its position, and it behoves all of us to do what we can to promote harmony and good feeling amongst all our members.

Reviewing the work done by the society during the last session, I think we have every reason to be satisfied. We have had a series of excellent papers of an instructive and interesting character, and the secretary is to be heartily congratulated on his success in providing lecturers of such high standing and ability. Another gratifying feature of the last session was the excellent work done in the classes of design. Personally, I was much impressed by the quality of the designs submitted, and also the draughtsmanship generally, which I do not believe has ever been equalled previously. I can only hope that this high standard and enthusiasm will be maintained in the coming session. As your representative on the Council of the R.I.B.A., I have taken much interest in the work affecting the profession generally. I have been struck by the enormous amount of work which is done, and the businesslike way in which the affairs of the Institute are conducted. I have found the greatest consideration paid to the opinions of the representatives of the various allied societies, and an earnest wish to consider the interests of the provincial members of the Institute. I feel that it is only fair I should state this, as I have so often seen complaints of neglect of the provinces and suggestions of an overriding Metropolitan influence.

Many very important questions affecting the welfare of the profession have been under discussion during the last session, including that most difficult problem—namely, the proposed Registration Bill. As a member of the committee I can speak of the strenuous efforts which have been made to prepare a Bill which would be in the best interests of the profession and be accepted by Parliament. A draft Bill has now been completed, in spite of little encouragement from counsel and others who have been consulted as to its chances of becoming law. We are advised that in the present condition of Parliamentary affairs a Bill of this nature is not at all likely to be successful. In the face of these difficulties many of the Council feel that we had better rely on our powers under the existing Royal Charter, which powers are recognised by the Law Courts, and, it is thought, are sufficient for our purposes. Personally I am inclined to take this view, nor do I see that the profession would really gain much by an Act of Parliament. The object of acquiring an Act is primarily for the prevention of unqualified men practising as architects; but, on the other hand, an Act of Parliament would mean giving authority and position to many unqualified men who have at present no recognition as qualified architects.

The medical profession have an Act of Parliament for their protection against unqualified practitioners, but they are by no means free from quacks and patent-medicine vendors, who continue to flourish. The R.I.B.A. is probably the best means for our government, and its By-laws and regulations will sufficiently uphold the best interests of the profession. I have dwelt rather long on this matter of Registration, as I feel it to be one of absorbing interest to our profession, and I am anxious that the present position should be as clearly as possible understood. The preparation of a Revised Scale of Professional Charges has also occupied the attention of the R.I.B.A. during the last session. It is now completed, and as soon as it is approved by the general body of members will be put into force. As a member of the R.I.B.A. Council I was invited, with other members, to inspect the work which is being done at St. Paul's Cathedral, with a view to securing the safety of the structure, owing to serious settlements which have taken place. In company with the Cathedral architect, Mr. Macartney, and Sir Francis Fox, the engineer specialist, who are in charge of the work, a very thorough examination of a large portion of the building was made, and the nature of the damage which has occurred was pointed out, together with the methods which are being adopted to remedy the defects. The source of the danger is supposed to be the bed of quicksand which occurs in the subsoil at a depth of about 20ft.

* The Presidential Address to the Manchester Society of Architects. Delivered Oct. 8, 1913.

below the foundations, and there is documentary evidence to show that about fifty years ago this running sand was tapped during the construction of a deep sewer in close proximity to the Cathedral, thus causing the settlements which have occurred. The question is whether this sewer is not permanently extracting water from the sand and causing further settlement. Apart from the question of the existence of this quicksand, it was discovered that the construction of the walls was very defective. The main piers supporting the dome are composed chiefly of loose stone rubble, with a thin outside casing of bedded masonry, averaging about 9in. thick, which casing was practically carrying the whole of the enormous weight of the superstructure of the dome, a total of some 7,000 tons, carried on eight piers about 30ft. by 8ft. respectively. With a view to strengthening these piers liquid cement grout has been forced at high pressure into the cracks and through holes cut in the outer casing of the masonry into the rubble filling, with the object of converting the whole pier into a monolith or homogeneous block. Examination of portions of the work which have been completed showed most satisfactory results, and, I fully believe, will result in the removal of all danger of collapse. The time at my disposal this evening is too limited to enter more fully into the details of this most interesting examination, in which I feel it is a great privilege to have taken part, and the result of the examination was to remove my anxiety as to the future safety of the structure and to thoroughly approve of the methods which are being carried out with such great care and thoroughness, and it is to be hoped that funds will be forthcoming to complete this most necessary work, and remove all danger in the future.

Having given an account of my stewardship, I will now refer to more general matters affecting the welfare of the profession. The Battle of the Styles has ceased for the present, and the Goth has surrendered to the Greek and Roman forces, and Classic architecture holds the field. Some of us will remember the time immediately succeeding the previous reign of the Classic style born of the Dilettante Society's labours, and followed by the beautiful and scholarly productions of Professor Cockerel, Sidney Smirke, and their compeers. Through the influence of Ruskin, this most interesting period in Classic architecture terminated and gave way to a Gothic revival which swept like an epidemic through the country, infecting everyone. Both the clergy and laity were moved to enthusiastic, not to say feverish, activity. Nearly all the cathedrals and churches in the country were placed in the hands of Gothic experts to restore or rebuild—alas! unfortunately, in most cases, to destroy and ruthlessly remove the poetry and tradition which the original builders and time had bequeathed, leaving in their place lifeless productions of the unsympathetic hardness which belongs to cast iron. Beautiful stained glass was removed for meretricious substitutes, and very much of what was best was swept away in the Gothic flood. Oh, the pity of it! To say nothing of the waste of money which might have been spent to so much better purpose. The Gothic treatment was applied to all sorts of buildings for which it was quite unsuited. No wonder that a reaction took place, and that Classic architecture has once more successfully asserted its claims, and has gradually taken firm hold in present-day design.

In the last decade drastic changes have taken place in the methods of architectural teaching, and the old system of pupilage has largely given place to the academic. It is to be hoped the result will be satisfactory; but there is no doubt there is loss as well as gain in the change. The danger of academic education is the individual and dominating influence of the teacher, which is calculated to produce stereotyped similarity of design, and stifle individual effort and inspiration. There will also be a loss in the business capacity of the future architect, which is so essential a part of his training, in his own interests, and for the proper protection of those of his clients. It behoves us, therefore, to see that this academic method of teaching shall be placed in the most capable hands, and directed from the Royal Institute of British Architects, rather than by those educational bodies which lack the necessary architectural knowledge and experience. In view of these changes in the methods of teaching, I would ask the question whether satisfactory progress is being made in architectural design. There has, I think, been improvement in the design of our public buildings in recent years, both as to planning and a greater breadth and simplicity of outline, and in the omission of unnecessary features, improved treatment of the wall-spaces, and the effect of contrast is better understood, and there is a greater absence of meretricious ornament.

The use of iron and concrete construction has changed the character of our commercial buildings, and a skeleton framework of steel has now become almost a universal method of construction in our business premises and warehouses and factories. No doubt there are many facilities in this mode of construction, which had its origin in America, and it has enabled buildings to be erected of a much greater height than formerly, and also to economise floor-space and the area of the site. Perhaps the greatest improvement in design is to be found in small houses for the use of the middle classes, as seen in what are called "garden cities," and in the suburbs of large towns. It is quite a new development, and has taken the place of the old semi-detached villa, on which it is, needless to say, a great improvement. It has provided the opportunity for much originality of treatment, and the results are, as a whole, highly satisfactory. There is much yet to be done in the provision of dwellings for this very numerous portion of the community. The increasing difficulties in domestic service point to residential flats with a co-operative service, and I expect to see in the near future considerable development of the residential flat system. With respect to the dwellings for workmen, little real progress has been made, owing to the question of cost as compared with the rents which can be paid. These difficulties have been seriously increased by recent legislation, which has for the time being checked the career of the speculative builder who in times past has provided this class of house. The dearth of suitable dwellings for the working classes is becoming very serious in many districts, and something will have to be done, either by Parliament or the local authorities, to supply the want, in the absence of private enterprise. As regards the architectural development of our towns and cities, efforts to improve them are sadly hampered by narrow views which resist all attempts at broad treatment. I fear, in city improvements, the narrow and patchwork methods generally prevail; but these narrow views are by no means synonymous with true economy, and a great bar to progress. Locally, we suffer seriously from these causes, and the opportunities for the improvements of our city are thrown away.

The position of the individual architect has much changed in the last few years, and he is beset with difficulties that a few years ago did not exist. The specialist has trespassed upon his domain, and the enterprising and advertising "furnisher and decorator" no longer hesitates to usurp the position of the architect and to provide plans "free of cost," which a credulous public have been taught to believe. The protective authority of the architect has been gradually, but surely, undermined. I would again sound a note of warning against being too ready to take part in the lottery of public competitions. The public have discovered our weakness in this respect, and are exploiting the profession for their own benefit. The only kind of competition which is reasonably fair is the limited competition in which all who take part are paid their out-of-pocket expenses at least. As an illustration of the effect of this species of gambling I would refer to the recent bankruptcy of an architect of ability, who gave as a cause of his insolvency having taken part in the last six or seven years in fifty-eight public competitions. He had been placed first in four, but in only one or two cases had he been allowed to carry out his design, "owing to the action of the committees concerned being in favour of local men." In granting his discharge, the Judge commented on the unremunerative result of competition work as follows: "He knew that competitions were about the most expensive form of business an architect could indulge in, because, even if he were at the top, it did not follow that he would get the contract, for there were so many influences at work." I trust this warning will not be thrown away, and that we shall spend our time more profitably than gambling in public competitions.

In conclusion, I would impress upon assistants and younger members of our profession who are called upon to spend many hours in the close atmosphere of an office the necessity for preserving their bodily health. Open-air exercise must not be neglected, and I would strongly recommend the cultivation of outdoor sketching, which will combine the necessary exercise and fresh air with mental improvement. The old motto, "Mens sana in corpore sano" is for ever true, and health once lost is not easily regained.

THE INTERNATIONAL SOCIETY OF SCULPTORS, PAINTERS, AND GRAVERS.

This exhibition is, in some respects, an improvement on the more recent shows of the Society. There are fewer eccentricities, and we do get, in the case of some of the leading painters, actual pictures, and not mere plans and sketches of pictures that might, could, should, or would be made if the artist deigned to favour us with more than suggestive ideas.

In some cases, it is true, it is as difficult to interpret the meaning of the pictures as it has been impossible to guess that of past "impressions"! There are Mr. Strang's "The Worshippers" (70) and "Bal Suzette" (131), for instance. The fitter title for the first would really seem to be "More Injustice to Women," and it seems unfair that the artist, the soldier, and the other comfortably clad males should be so suitably and seasonably attired, while the one nude female sits without a rag on to receive their devotions. What the second means, we give up guessing. Nor is one much more gratified with Mr. Charles Ricketts' "Bacchus in India" (84), or Mr. Glyn Philpot's "Œdipus and the Sphinx" (78). There is a good "Head of a Man" by M. T. Couture (69), and most people will like M. Charles Cottet's "Mer Sauvage, ile d'Oussaent" (75). There is good work in M. Blanche's "Mere du Peintre" (62).

In the Long Gallery, we like best Mme. Berthe Morisot's "Picking Flowers" (130) and Mr. Gerald Festus Kelly's portraits (129 and 133). Another good work is Manet's beautiful little "Portrait of a Lady" (174). "The Mudlarks" (145), by the late C. E. Holloway, and Mr. H. Bishop's "Sirocco" (119) are both welcome, as seen before. "A Passing Storm" (96), by Mr. P. H. Padwick, deserves mention, and one of the most satisfactory works in the exhibition is "An Interior" (138), by Mr. William Orpen, A.R.A., lent by Sir Philip Sassoon. "The Hearth" (143), by Mr. Francis N. Newberry, is pleasant to contemplate, and creditably rendered.

There is little new in the Corner Gallery. The anonymous "Tennyson Reading Maud" (149) is new to us. In the Small Gallery, we like Mr. Joseph Pennell's lithographs of Greek architecture (207–211). There is little sculpture. Mr. David Edstrom's plaster "Envy" (192) and the "Baby's Head" (193) in bronze are good, and so is Nicolini's "Satyr" (88). M. Rodin has two excellent bronzes, "The Secret" (87) and "Monsieur Geffrey" (249)—both lent by Mr. John Lavery, A.R.A.

Mr. J. R. Taylor, surveyor of the Lutterworth Union, has been appointed surveyor of the Claverdon Rural Council.

OBITUARY.

Mr. George Edward Ormiston, M.I.C.E., late chief engineer, Bombay Port Trust, died at 9, Melbury road, Kensington, on Friday in his 70th year. Mr. Ormiston was educated at Glasgow Academy, and was trained as a civil engineer under the late Mr. John MacConochie, M.Inst.C.E., at the Cardiff docks. He joined the Bombay Port Trust as assistant engineer under his eldest brother, the late Mr. Thomas Ormiston, C.I.E., then chief engineer. On the latter's retirement shortly before his death in 1882, Mr. Ormiston succeeded him and was chief engineer till his retirement in 1891. Mr. Ormiston married in 1888 Elizabeth Mary, elder daughter of the late Mr. Alfred Burges, and niece of the late Mr. William Burges, A.R.A.

The name of Mr. Oswald Barker Whitehead, of Middlewich, contractor and sanitary engineer, has been placed on the commission of the peace for Cheshire.

Ilford Urban District Council has applied to the Local Government Board for sanction to a loan of £21,110 for the provision of new swimming-baths.

The new public library presented to Clydebank by Mr. Andrew Carnegie was formally opened on Friday night. The building was erected at a cost of £10,000. The architects are Messrs. Gardner and Whyte, of Vincent-street, Glasgow, whose design, selected in competition by Mr. Jones Miller, the assessor, was illustrated in our issue of November 17, 1911.

On Thursday in last week, the new vestry and sanctuary screen at Paston Church, near Peterborough were dedicated. The vestry replaces a lean-to brick building, and is built in keeping with the Late Decorated style of the church itself, whilst the screen is in oak. A new altar and reredos and choir-stalls were recently added to the chancel fittings of the church.

The trustees of Upper Canada College, the historical public school of Canada, have sold the buildings and grounds at Toronto for £220,000 sterling, and have decided to erect new buildings at Norval, 26 miles east of the city. There the trustees have acquired 500 acres of land, forming part of the original grant in 1827 to King's College, which developed into Toronto University.

The streets and buildings committee of Edinburgh Town Council considered on Friday a recommitted report recommending approval of the proposed diversion of Seafield-road and the temporary road proposed to be constructed in connection with the new Lothians railway. The first proposal was to make the Seafield-road 45ft. wide; but the committee now agreed to recommend the town council to contribute the sum of £2,000 towards making the road and new bridge 50ft. wide.

The foundation-stones were laid on Saturday afternoon of two new churches to be erected in the parish of St. Mark's, Portsmouth. Dr. Randolph (suffragan Bishop of Guildford) laid the foundation-stone of the Church of the Ascension, in Stubbington-avenue, and the Bishop of Southampton performed the ceremony at the Church of St. Saviour, in Twyford-avenue. The two churches together are to cost, with furnishing and equipment, between £14,000 and £15,000.

At the meeting on Monday of the town council of Cheltenham, a committee reported that the Local Government Board had sanctioned the raising of a loan of £5,500 for the purchase of 22 to 26, Promenade, repayable in thirty years, for conversion into municipal offices. The Board intimated that the plans for adapting the houses were satisfactory, subject to the modification of the planning of the council-chamber and subject to the provision of an external iron staircase at the rear of No. 26; but they asked for a revised estimate based on the lowest satisfactory tender.

The streets and building committee of Edinburgh Town Council, for the first time, put into operation on Friday one of the new powers conferred upon the local authorities by the recent Edinburgh Corporation Act. Under Clause 79 of the Act, no new tenement is to have more houses entering from a common stair than nine without the special sanction of the town council. At the streets and buildings committee meetings there was an application on behalf of a proprietor of a tenement in Buccleuch-street to increase the separate houses in a tenement there by one from 14 to 15. The committee, however, decided to recommend the town council to decline to sanction this.

Building Intelligence.

BRISTOL.—The Royal West of England Academy at Bristol was reopened on Monday after extension, restoration, and redecoration. The new front, which occupies the site of the original external steps and approaches, is of Classical character, forming a base to the upper part of the original building, which remains practically unaltered, except that the old loggia, which formed the entrance, has been thrown into the new staircase hall, and windows inserted in the original openings. A central doorway, flanked with fluted Doric columns, surmounted by an entablature and parapet, forms the principal entrance, and on either side are the doorways giving access to the municipal school of art and the studios respectively. Over the central doorway are the Royal Arms, carved in stone; it is the work of Mr. Lindsey Clark, R.B.S. At each end of the building are stone screen walls, with low parapet walls at right angles to the front. The stone used is Bath stone, from Coombe Down. The entrance doorway gives access to a lobby open to the entrance hall, which contains the principal staircase, the secretary's office, and ladies' cloakroom. The floor of the hall is of marble, and the walls have a dado of polished Hopton Wood marble, with black marble bands, the upper part being lined with Escalette marble. On either side of the staircase are piers formed with square fluted Doric pilasters of Piastraccia marble with capitals and bases of statuary, and standing upon Hopton Wood marble pedestals. There are engaged pilasters of the same character upon the walls. The staircase is polished Hopton Wood marble, with black marble handrail, balusters, and plinth moulding. Upon the level of the first landing is a niche, containing the bronze bust of the late Lord Winterstoke, modelled by Mr. Havard Thomas. On the first floor the walls are lined to the full height with Arni alto, arranged in large panels. At intervals upon the walls are fluted Ionic pilasters of Piastraccia marble. The central compartment is covered with a pendentive dome, having enriched caissons. The ceiling treatment of the first floor hall provides four wall lunettes, 24ft. wide and 7ft. 6in. high, and these are filled with decorative paintings. An open competition was instituted for the designs for these paintings, and Mr. Walter Crane, R.W.S., was successful in securing the commission. The subjects chosen are the arts of "Painting," "Craftsmanship," "Architecture," and "Sculpture." The first two are completed. The original plans were the last work of Mr. H. Dare Bryan, F.R.I.B.A., of Bristol, but these had to be remodelled by Mr. S. S. Reay, F.R.I.B.A. The contractors were Messrs. J. Dallon and Son, Birmingham, and the clerk of works Mr. E. J. Trotman.

CORSTORPHINE, N.B.—The new church of St. Anne at Corstorphine was dedicated and formally opened on Saturday afternoon by the Moderator. The church is built of stone, and is designed in the Romanesque style. There is a nave with a space set apart for the choir at the east end, and further to the east a semi-circular apse for the Communion table, with an arcaded bench round the walls for the minister and elders. The floor of the apse and choir is laid with Iona marble. The side aisles are simple passages, leading to broad aisles or chapels on the north and south sides. The principal lighting of the church is from overhead, from the 28 clerestory windows. All the pews and doors of the church have been executed in oak. The pulpit is a gift, and is of oak, richly carved on the front, and set upon four columns. The Communion table is also richly carved. The exterior of the church is designed on simple lines, and natural-faced low courses without specially dressed stones are employed. The architect is Mr. P. M'Gregor Chalmers, Glasgow.

OXFORD.—The two new blocks of buildings at Somerville College, Oxford, were opened on Saturday afternoon by the Vice-Chancellor, Dr. C. B. Heberden, Principal of Brasenose College. The additions, which have been erected from the design of Mr. Edmond Fisher, are in the Georgian style, in red brick, roofed with Corfestone tiles, and consist of the Maitland Hall, containing the dining-hall, 70ft. by 35ft., with offices and common rooms below it, and of a residential block with accommodation for two tutors and twenty students. The two buildings are connected by a loggia and terrace, from which a view of the garden is obtained. The builders were Messrs. S. Hutchins and Sons, of Oxford.

PENSHAW.—The contract for rebuilding Penshaw Station, destroyed by fire, has been placed with Messrs, Stephen Fenwick and Co., Northumberland-road, Newcastle-on-Tyne. The buildings are to include a booking hall, 71ft. by 27ft., booking and parcels offices, 30ft. by 15ft., stationmaster's office, etc. Detached from the main buildings are the general waiting room, 25ft. by 12ft., also first class ladies' and gentlemen's rooms, each 12ft. by 10ft, stores, and conveniences. The whole of the work will be completed in six months' time, from plans by Mr. William Bell, of York, the architect to the North Eastern Railway Company.

PAISLEY ABBEY.—A meeting of the abbey restoration committee was held at Paisley on Friday (Sir C. B. Renshaw, Bart., in the chair) to consider the report of Professor Henry Adams, consulting engineer, London, upon the structural stability of the buildings proposed to be erected, which showed that an ample margin of safety had been allowed for. In submitting the designs for the choir for the approval of the heritors, the committee had reserved the position of the organ-chamber for further consideration. The designs as amended were submitted to the heritors, and received their approval. The building committee went on to state that letters had been received from Mr. J. Stewart Clark increasing his gift towards the choir restoration from £30,000 to £40,000, and from Mr. Robert Allison, who had promised £8,000 towards the original estimate of cost of restoring the central tower, raising that amount by £2,000, Mr. Murray, the measurer, having now estimated the outlay at £9,918. The committee recommended the acceptance of the following offers, subject to final adjustment; which were in every case the lowest in the several departments:—Mason-work: W. and J. Taylor, Glasgow, £37,692 12s. 5d. Wright-work: Wylie and Lochhead, Ltd., Glasgow, £758 7s. 11d. Plumber-work: A. Forsyth and Son, Paisley, £1,634 9s. 1d. Glazier-work: Wm. Meikle and Sons, Glasgow, £339 6s. 1d. Adequate sums had been set aside for carved work in stone and wood, for architect and measurers' fees, heating, oak furniture, and other necessary expenses, and the total cost of the proposed works would amount to about £54,000. The committee recommended the appointment of Mr. James Murray, of Crossflat-crescent, Paisley, to the post of clerk of works. The report was adopted.

Mr. Frank Pritty, of the city engineer's staff, Glasgow, has been appointed burgh surveyor and master of works to the Prestwick Town Council.

A new West Riding Council elementary school was opened on Thursday in last week at Carcroft. The accommodation is for 1,000 scholars—namely, 320 boys, 310 girls, and 370 infants. It is built on the quadrangle principle, similar to the schools opened last week at Edlington and Balby, from plans prepared by Mr. John Stuart, L.R.I.B.A., of the Wakefield County Offices.

A joint committee of the corporation of York have had under consideration the claims of the Leeman-road district to be brought into more direct communication with the centre of the city, and having examined alternative schemes prepared by the city surveyor, Mr. F. W. Spurr, have decided to recommend the council to include in the Bill proposed to be promoted in Parliament power for the carrying out of the construction of a single-span bridge over the River Ouse at Cliftonscope, Section No. 2 of the roadway to connect the bridge with Lincoln-street, and the roadway connecting Salisbury-terrace with Waterworks-lane, at an estimated cost of £33,350, such amount being exclusive of the cost of any land to be acquired.

Currente Calamo.

The Manchester Society of Architects is always fortunate in its presidents, and Mr. John Brooke's address on Wednesday evening last adds another to the timely and level-headed utterances by which our brethren of Cottonopolis have of recent years been edified. We are particularly glad Mr. Brooke emphasised the present-day evils of architectural gambling, for that indeed is what our system of public competitions has become. His illustration—a timely one, which all his hearers must have taken to heart—is one of many on which we have recently commented. While architects allow unscrupulous authorities and individuals to exploit them for their own benefit, it is useless to hope for better things. Honest winners will be shunted mercilessly in favour of local men, and the advertising furnisher and decorator will sweat "specialists" and provide plans "free of cost," prepared by his "young men upstairs." In no other calling of equal rank and usefulness has this canker eaten so deeply. In no other will it so inevitably lead to worse evils if architects are deaf to the calls of honour and their own legitimate interests. We trust others will speak out as boldly as Mr. Brooke has done, and that men who fail to recognise their first duty to themselves and their fellows will be treated as they deserve. A man who engages in a competition that has been blacklisted by the R.I.B.A. has forfeited the right to its membership, or that of any architectural society, and a client that depends on such an architect has little guarantee that a man who is blind to his first responsibilities will discharge honestly those which appertain to his calling.

The annual Inland Revenue Report issued last Friday will rank hereafter as one of the most damning records of the ineptitude of any Finance Minister, British or foreign, ever chronicled. There may have been other ministers who have rivalled Mr. Lloyd George in their unwisdom, and as regards injury to trade by mistakes in taxation: there has never been one which proved itself such a fiasco as regards results. This was our speculative Chancellor of the Exchequer's forecast for the four financial years commencing with 1909-10:—

Duty.	Year 1909-10.	Year 1910-11.	Year 1911-12.	Year 1912-13.
Increment Value Duty ...	£20,000	£20,000	£50,000	£30,000
Reversion Duty	90,000	90,000	50,000	125,000
Undeveloped Land Duty ...	140,000	280,000*	200,000	100,000
Mineral Rights Duty	350,000	700,000†	400,000	290,000
Total	600,000	1,090,000	700,000	545,000

* Including £140,000 arrears for 1909-10. † Including £350,000 arrears for 1909-10.

The Inland Revenue Commissioners explain that the Act imposing the duties only received the Royal Assent on April 29, 1910, and that it was not until the autumn of that year that the administrative machinery was sufficiently advanced to permit of an effective start being made with the general valuation of land and the assessment and collection of duty. They point out that for these reasons "Payments into the Exchequer" did not commence until 1910-11, when they amounted to £520,000. In 1911-12 these payments aggregated £481,000, and in 1912-13 £455,000, including a sum of £20,000 paid into the Exchequer in respect of Mineral Rights Duty before the end of the financial year, but which could not be brought into account under the appropriate head of duty pending the completion of the assessments. The net receipts of the several duties has been as follows:—

Duty	Year 1910-11	Year 1911-12	Year 1912-13
Increment Value Duty ...	£427	£6,127	£16,981
Reversion Duty	57	22,621	47,971
Undeveloped Land Duty	2,351	28,947	97,852
Mineral Rights Duty	306,290	436,194	273,915
Total	309,025	493,888	436,722

The excuses are flimsy. The differences between the "Budget Estimates" and "Net Receipts" are attributed partly to the delay in the passing of the principal Act and partly to the absence of reliable data on which to base any satisfactory estimates of the yield of these new taxes. The Commissioners allege that the Increment Value Duty, the Reversion Duty, and the Undeveloped Land Duty are becoming annually more productive as the work of valuation progresses and arrears are overtaken. The Bulk of the Mineral Rights Duty for the year 1909-10 and a substantial portion of the duty for 1910-11 were received during the latter year, and the collection of this duty reached a normal condition towards the end of the year 1911-12, the receipts of which year include considerable arrears relating to the years 1910-11.

Even if the Commissioners' explanations are accepted, the fact remains that every item was overestimated to an extent that few bubble-company prospectus writers have dared to rival. Nor is that all. It is "explained," as regards the Mineral Rights Duty, which contributes the bulk of the receipts, and is really not a land values duty at all, that the reduction in the amount assessed for last year, as compared with previous years, is due partly to the fact that the statistics are incomplete, certain assessments not having been made until after the close of the year; partly to a reduction in the amounts returned for assessment owing to the loss of mineral royalties during the Coal Strike of 1912, and a similar reduction due to the assessments being based on the net rents and royalties after deduction of income tax instead of on the gross rents as in previous years. The latter deduction, which was made in consequence of the decision of the High Court in the case of "The Duke of Beaufort v. The Commissioners of Inland Revenue" (since confirmed in the Court of Appeal), will be permanent in character, and with income-tax at 1s. 2d. in the pound will adversely affect the yield of Mineral Rights Duty to the extent of about 6 per cent. per annum. Considerable repayments of tax overpaid for the years 1909-10, 1910-11, and 1911-12 will also have to be made during the year 1913-14. And all the time the valuation of the land, which is being conducted at enormous cost, is proceeding, though at the end of last March only four and a half millions out of a total of approximately ten millions of hereditaments had been valued. The actual amount spent last year on the valuation does not appear to be given in the report.

We are glad to see there is to be an inquiry at the Town-Hall, Burnley, next Tuesday by the Local Government Board into the closing order made by the corporation against Mr. J. F. Lancaster, Lic.R.I.B.A., the owner of the premises concerned, on which we commented on this page in our issue of September 19. It is stated that the gentleman appointed by the Local Government Board to conduct the inquiry is the same who granted the closing order. If this is so, we have no doubt that he will impartially discharge his duty; but it seems strange that the Local Government Board is empowered to act as arbitrator under its own Act, and property-owners generally will, we think, watch the further progress of this case with interest not altogether unmixed with apprehension. We shall probably have more to say—we hope in congratulation to all concerned—when the result of the inquiry is made known.

The comments of the Glasgow newspapers on Mr. W. E. Riley's three "Chadwick" lectures on the "Practical Problems of Housing Reform," which we gave last week, are numerous and appreciative. The *Glasgow News* commends their timely incidence and helpful tendency, especially at a time when Glasgow is imperatively faced with the urgent necessity for some solution of the problem. There, as elsewhere, unfortunately, as our Scottish contemporary briefly remarks, the disposition is manifest "to deal with the housing question less as a practical problem for truly practical treatment, than as a singularly opportune arena for the exploitation of the crudest and wildest sort of politico-economic theories." Glasgow, anyhow, has had the wisdom to listen to one whose practical knowledge and experience have been as diverse and extended as his expositions thereof last week and at other times have been wholesomely free from the fads of the dilettante and the whims of the crotchet-monger; and we should like to see the widest circulation given to the publication of Mr. Riley's lectures in extenso in a form calculated to insure their possession and study by every authority in the three Kingdoms charged, or likely to be charged, with the better housing of the people.' Here in London men of all parties thankfully and unanimously acknowledge that, thanks to his energy and knowledge, the London County Council has to the very utmost of its powers and means discharged its responsibilities creditably and wisely, and it is no mean tribute to the London County Council that its superintending architect has been selected to expound the methods his position has enabled him to carry out.

Mr. Riley was very fortunate in his chairmen last week at Glasgow. Sir Donald MacAlister, K.C.B., the erudite Principal of the University of Glasgow, the Lord Provost, and Dr. Chalmers, the able medical officer of health of the city, are each as pre-eminent in their respective spheres as they were happy in their introductions each night of the lecturer. Dr. Chalmers, it is true, on Friday night found himself comically set at defiance by one arch-enemy, and utterly unable to follow his own excellent advice, "Kill that fly," and "Do it now!" During one of the most interesting passages of Mr. Riley's concluding lecture, and just as one of the most telling slides of plans and views had been thrown on the screen, an intruding house-fly got somehow into the lantern lens, and as the *Glasgow Herald* puts it, "struggled into Mr. Riley's parlours, magnified many times his size, with Gulliver-like immensity, or strode magnificently like an aeroplane over the roofs of Norbury and Tooting. The author of 'Do it now' (the respected medical officer of health) sat on his chair more or less horrified at the insect's audacity, helpless to carry out his advice. By-and-by Mr. Fly seemed to have had enough of town planning, and

hastily retired from the show, amid the cheers of the audience."

While we should hardly like to say, with a correspondent of the *Times*, that a faculty is always "a quasi-private transaction between the individual parish and the Chancellor," we do think the whole procedure is mostly an anachronism, and often little more than a gossip between good people who know little, and ought to be responsible for less, of matters they are dealing with. In part, no doubt, this was perceived by the Joint Committee on Ancient Monuments, and the publicity therein recommended was wholesome. But as we pointed out at the time, the method prescribed would cost money; and the "small committee" of three architects would probably hesitate sometimes to condemn or praise the suggestions of the architect engaged. The *Times* correspondent wants an "Advisory Board in every diocese, which must be consulted before a faculty is issued for altering the fabric of any church, and which should consist of representatives of archæological societies within the diocese, the diocesan architect, and the archdeacons." This hardly seems to us likely to improve matters. The one solution would probably be found, as in other cases, in connection with the appointment of a Ministry of Fine Art, responsible to public opinion, whose trained inspector would publicly inquire into all restoration schemes, and hear objections, just as his colleague of the Local Government Board does in regard to matters within its purview.

On Tuesday next, at a meeting of Convocation of the University of London, at the University, South Kensington, Jehangier Hall, Dr. R. Mullineux Walmsley will move: "That this House is of opinion (1) That whenever arrangements are made in connection with a new site for the University they should expressly provide that his Majesty's Government shall continue to provide adequate and suitable accommodation for the University, free from expense for rent, rates, taxes, and structural repairs, as it has done from the foundation of the University, and now does. (2) That no such arrangements can be made or entered into until it is known whether Parliament makes any and (if so) what change in the constitution and functions of the University. Since the last attempt to rush the purchase of the unsuitable and costly Bedford site, according to the *Daily News*, its promoters have approached the City companies with a view to obtaining their support. But this has been refused. The companies are in no mood to contribute to the purchase of property at a figure three times in excess of the value put upon it by the London County Council. The Senate of the University is to hold its first meeting after the vacation on the 22nd inst., and it is expected that a conference will then be arranged on the site question between that body and the London County Council. One of the curiosities of the situation is provided by the Departmental Committee which was appointed by the Board of Education last July to see the various parties concerned and to report as to how effect might be given to the recommendations of the Royal Commission on the University. The appointment of the committee was not relished in some quarters, and Sir Wm. Collins, in conversation with a *Daily News* representative on Tuesday, described it as a very unusual procedure disrespectful alike to the University and the Royal Commission. The joke of the situation, however, lies in the fact that this committee has never met.

In March last the London County Council were asked again to consider the desirability of applying the name of "Tottenham Circus" to the open space at the junction of Tottenham Court-road and New Oxford-street. The Holborn Borough Council has received a reply stating that the L.C.C. are of opinion that to apply the name Tottenham would tend to create false local history, and they have therefore again decided to take no action in the matter. Most sensibly. In addition, it would confuse thousands of strangers yearly, and serve no conceivable purpose except the gratification of freakish fad-mongers.

The death of Mr. J. W. Fairbrother, a well-known estate agent, of Harrington-street, Liverpool, took place at his residence, 79, Canning-street, on Monday.

The Board of Trade have confirmed the order made by the Light Railway Commissioners, authorising the construction of a light railway in the borough of Southwold, Suffolk, connecting Southwold Harbour with the Southwold Railway.

In memory of the late Rev. F. E. Horne, rector of Drinkstone from 1865 until his death on February 11, 1913, there has recently been placed in Drinkstone parish church some oak panelling and reredos, with an oil-painting inset, representing the Saviour crowned with thorns.

The Lord Mayor will, on Wednesday, October 29, lay the foundation-stone of the new building of the Institute of Marine Engineers, which is to occupy an island site on Tower-hill. The main elevations will be built in Portland stone. Mr. Victor Wilkins, of 12 York Buildings, Adelphi, is the architect, whose design was illustrated in our issue of December 6, 1912.

The King has been pleased, on the recommendation of the Secretary for Scotland, to approve of the appointment of Professor John Dewar Cormack, D.Sc., M.Inst.C.E., M.I.Mech.E., Professor of Engineering in University College, London, to the Chair of Civil Engineering and Mechanics in the University of Glasgow, vacant by the resignation of Professor Barr.

Dr. F. R. Fairbank, F.S.A., whose death occurred on Friday at Caversham, Oxfordshire, in his seventy-third year, was consulting surgeon of the Doncaster Royal Infirmary, and a corresponding member of the British Archæological Association. He was the author of "Memorials of Old Surrey," "Memorial Brasses of Surrey," "The Abbey of Bermondsey," and other works of an antiquarian character.

At Saturday's meeting of the Birmingham Town Planning Committee, it was announced by the chairman (Mr. Neville Chamberlain) that an intimation had been received from the Road Board that they had made the committee a grant of £20,000 towards the construction of so much of the ring road which is to encircle the city as is comprised in the Harborne and Quinton and East Birmingham town-planning scheme.

Lecturing on Tuesday evening at the Gas Exhibition, Shepherd's Bush, on "The Evolution of Gas Lighting and Heating," Professor Vivian B. Lewes observed that the smoke curse that in the last half of the 19th century fell upon the City, and by fog, filth and cutting down the hours of sunshine, injured the people to the extent of many millions in money, and untold misery in health, was slowly being conquered as the use of gas as fuel steadily advanced. He claimed that not only in the home, but for power in the factory, coal-gas was the ideal fuel as well as an illuminant.

Lord Guthrie, in the Scottish Court of Session at Edinburgh on Friday, granted decree in a petition at the instance of the Local Government Board against the town council of Dunbar, as the local authority, ordaining the latter to provide a new supply of water to meet the needs of the burgh, in terms of the Burgh Police (Scotland) Act, 1892. The town council of Dunbar have been in negotiation for some time with a view to providing a new supply of water from the Lammermoors, and they have been ordained to submit a scheme to a man of skill within two months.

PROFESSIONAL AND TRADE SOCIETIES.

THE ART OF HOLMAN HUNT.—The first of a series of Ogden Trust lectures, arranged by the Crompton Higher Education Committee, was given in the Co-operative Hall, Shaw, Lancs, the other night, by Mr. J. L. Paton, M.A., high master of the Manchester Grammar School. The subject was "The Art of Holman Hunt." The lecturer, who mentioned that he had enjoyed the personal acquaintance of Holman Hunt and his family, pointed out that Holman Hunt was the conceiver of a new movement in art as the founder of the Pre-Raphaelite brotherhood. At the age of 16½ he conceived the lines of a drastic revolution in English art. It was encouraging to think he was born in the centre of London, being the son of a warehouseman. At the age of twelve he was a sort of glorified office-boy to an auctioneer, and in 1843 he became London agent for Richard Cobden's firm of Manchester calico-printers. His spare time was spent in the British Museum and National Gallery, where he came in touch with the great masters of the past. He entered the Academy School, and here a wonderful comradeship was formed which revolutionised art. From Raphael, art had been dominated by convention; but Hunt led the way back to God's own nature and the open air. Mr. Paton described "Rienzi," "The Hireling Shepherd," "The Wandering Sheep," "The Light of the World," "The Scapegoat," "The Shadow of the Cross," "The Flight into Egypt," "Disputing with the Doctors in the Temple," and other pictures. The lecturer contended that Holman Hunt would always stand as one of the greatest spiritual forces of the Victorian era.

THE BASTIONS OF LONDON WALL.—Before the British Archæological Association on Thursday night, in the lecture hall of the Royal Society of Arts, Mr. Francis W. Reader gave a paper on "The Bastions, or Wall Towers of London." The president, Mr. Charles E. Keyser, occupied the chair. Mr. Reader said that the bastions were placed at intervals on the outside face of the walls so as to command the length of the wall separating them. They exhibited the method of mural foundation known to the Romans, but not used by them in the early occupation of this country. The bastions formed no part of the original defences, as they were of different construction, varied considerably in size, and had no bonding courses. That the bastions were later additions to the wall was clear from the masonry, and also because they were built against the wall and not bonded into it. Some of the bastions were solid, others were hollow and filled with earth. The first definite description of them was that of FitzStephen in the 12th century. The position of 20 bastions had now been ascertained, and probably more remained undiscovered. There was only one possible alternative to the theory of the Roman origin of bastions, and that was that they were built by the Saxons, who found a convenient quarry in the Roman buildings that were left, but there was no warrant for believing that the Saxons had anything to do with their erection.

THE PRACTICAL VALUE OF ENGINEERING MODELS.—The presidential address to the Association of Engineers-in-Charge was given by Dr. R. T. Glazebrook on Wednesday evening, at the St. Bride Institute. Much valuable information could, he urged, be gained from experiments and observations on models, for in many instances full-scale experiments were impossible. In illustration of his argument he referred to the work at the National Physical Laboratory on wind pressures. The observations showed a positive pressure on the windward side and a negative pressure or suction on the leeward side, and whereas for the positive pressure the results did not depend greatly on the form of the plate, the negative pressures were greatly influenced by it. In the case of aeroplanes the positive pressure on the under side was much less than the suction on the upper side, the suction effect at its maximum being some three times

as great as the pressure effect. The practical value of the experiments were demonstrated by the fact that the Army aeroplane known as the B. E. type was evolved from earlier types by means of the information afforded by experiments conducted on models in the air channel of the National Physical Laboratory. The intimate knowledge acquired of the resistance of various forms of struts, of the chassis, of the body, of the wires and cords used for stays or warp wires had all been of the utmost value. The Government had authorised the erection of two more air channels, one 7ft. square in section. Much important and useful work has also been done in connection with shipbuilding at the experimental tank. At the present moment there were some twelve ships built or building from lines determined by experiments in the National Physical Laboratory tank.

SONNING PALACE. The British Archæological Association inspected on Friday the excavations now being carried out by the president, Mr. Charles E. Keyser, on the site of the Bishop's Palace, in Holme Park, Sonning, near Reading. The president, the Rev. P. H. Ditchfield, and Mr. Harold Brakspear, gave descriptions of the results of the digging. Mr. Brakspear remarked upon the similarity of the building to the palace at Lincoln. The hall at Sonning was aisled, something like St. Mary's Hall at Winchester, and in the middle was a hearth, of which some of the tiles remained. The kitchen, beyond the buttery and pantry, had two enormous fireplaces with tiled backs, and on the east side of the hall was what he thought would develop into a square court with a passage round it like a little cloister. There was also another building, which would probably be found to contain a chapel. There seemed to be no building of any great size between the 13th century and the 15th century, when the place was enlarged owing to the bishop making it his favourite seat. The visitors afterwards proceeded to Sonning village, where a museum of relics from the excavations has been established. These include a large number of moulded stones, pottery, encaustic tiles, a fragment of a bottle bearing a coat of arms, some 15th-century ruby glass, horseshoes, buckles, spurs, and tobacco pipes.

The Secretary of State for India has appointed Mr. C. G. Blomfield to be architectural draughtsman at Delhi in connection with the work on the new capital

Mr William Robinson of Oaklands, Boevey Tracey, managing director of the Boevey Tracery Potteries has been appointed a magistrate for the county of Devon.

At Norwich on Tuesday an inspector of the Local Government Board will hold an inquiry into an application of the city corporation for permission to borrow £5,470 for widening the River Wensum

St. Nicholas's Church, Worcester, which was rebuilt in 1730, and has recently been restored, was reopened on Sunday. The work has cost about £800. Beneath the nave is a spacious vault, which constituted the floor of the previous church, believed to have been built on the return of the first Crusaders.

The Prime Minister will visit Stirling on November 1, to unveil the national memorial to the late Sir Henry Campbell-Bannerman The sculptor is Mr Paul Montford, who executed the characteristic bronze bust of the late Premier which has been placed on the wall of the north aisle at Westminster Abbey.

A small church has just been erected at Tarbax, a growing mining district in the uplands of Lanarkshire It is a simple rough-cast building, with pitch-pine open timber roof in the interior. There is accommodation for 204 persons. The architect is Mr. P. M'Gregor Chalmers, Glasgow. The church was dedicated on Saturday

At a meeting of the Tees Conservancy Commissioners at Middlesbrough, on Monday, tenders were accepted for the new road from Seaton Carew to Port Clarence, and the construction of bridges over certain parts of the road. For the road-making the tender of £38,276 5s 9d of Messrs John Moffitt of Manchester and for the bridges the tender of £16,760 of Messrs Head Wrightson, and Co., of Thornaby-on-Tees, was accepted

COMPETITIONS.

GERMAN EMBASSY BUILDINGS AT WASHINGTON, D.C.—The competition held in Berlin, and restricted to German architects, for an embassy building to be erected in Washington, D.C., has been won by Professor Bruno Moehring, a prominent German architect. The competition marks the first attempt on the part of a foreign power to erect an embassy building at the national capital of the United States that will be distinctly typical of the nation it is intended to serve:

NORTH WALES.—Thirty-three designs have been sent in for the King Edward VII. sanatorium, which is to be erected by the Welsh Memorial Association, whose offices are at Cardiff. The premiums are £100, £50, and £30. Only those architects whose names were sent in last year, when the competition was first advertised, were allowed to submit plans. The site is bisected by a public way, and the land varies considerably in its levels. The distance from a railway to the site is likely to add to the cost, and the sum provided in the conditions seems small, considering the large amount of accommodation required. The award is expected shortly. The assessor is Mr. Edwin T. Hall, F.R.I.B.A.

The Lewisham Borough Council have submitted to the Local Government Board plans and estimates for the tuberculosis dispensary which it proposes to erect on a site adjoining Ladywell public baths at an estimated cost of £1,000.

Dundee Gas Committee resolved last week to accept contracts for the construction of vertical retorts at a cost of £32,869. It was announced that coal could be carbonised by these retorts at 5d. per ton, compared with 10d. per ton by horizontal retorts.

The new church at Myshall, Co. Carlow, recently completed as a memorial by the late Mr. John Duguid, was consecrated on Monday in last week by the Bishop of Ossory. It is a cruciform edifice, and has been built from plans by Messrs. Ashlin and Coleman, of Dublin.

A public inquiry was held by Mr. A. G. Drury, Local Government Board inspector, at the Maidstone Town Hall, last week, with reference to an application by the corporation for power to borrow £1,900 for the enlargement of their sewage-disposal works at Aylesford by the purchase of 11½ acres of additional land and for additional plant.

A memorial to the late Mr. John Parker, a well-known Buckinghamshire historian and archæologist, has been placed in the chancel of the parish church, High Wycombe. It consists of figures of St. Hugh, St. Wulfstan, St. Friedswide, and St Catherine, who were identified with the church at Wycombe, or with the diocese when incorporated with Lincoln.

A new wing which has been added to the Hospital of St. John of God, at Scorton, near Richmond, Yorks, was dedicated by the Roman Catholic Bishop of Middlesbrough last week. The building is a plain structure, Jacobean in style, and raises the accommodation from 100 to 200 beds. The cost has been £14,000. The contractors were Messrs. O'Neill, of Sheffield; Messrs. Richardson, of Darlington; Messrs. Braithwaite, of Leeds; and Messrs. Rowell, of Newcastle.

The Tron Kirk, Edinburgh, was reopened for worship on Sunday after having been closed for eleven weeks, during which time it has been renovated and various improvements have been instituted. The electric lighting installation has been renewed, and a new system of ventilation has been introduced, while the interior of the church has been redecorated. In addition, the console of the organ has been removed to the area of the church.

As part of the scheme of restoration of the church of St. Bartholomew the Great, West Smithfield, the 17th-century boys' school, which for many years past was in the occupation of the late Mr. John Hope, is being adapted to serve as a vestry for the clergy and the servers. On the south side of the church, the schoolhouse built by the rector, the Rev. John Abbiss, in 1849 for girls' and infants' schools has been pulled down, exposing the foundation of the old south chapel. On this site is to be built a choir vestry, the cost of which, about £500, has been undertaken by Mr. G. D. Atkin, a member of the restoration committee. The demolition of the house has revealed the old brickwork round Prior Bolton's door.

Correspondence.

ANOTHER WORKING MAN'S COTTAGE.

To the Editor of the BUILDING NEWS.

SIR,—In last week's BUILDING NEWS Mr. Turvill gives sketches and a description of a workman's cottage to cost £160. Has Mr. Turvill built a cottage answering to his drawings, and if so, where is it?

When a family is confined to one day room, call that room what you will, it should be capacious, and if it is only 11ft. wide, with a large fireplace projecting into it, it cannot be so designated.

How long does Mr. Turvill think that an enamelled iron tip-up or other bath, with approved gas or oil water-heater, will last in a rented house?

He specifies materials without regard to locality. Rendering in cement, with clean pebbledashing, is, or is not, cheaper than dark red facing bricks; if it costs more, why not use brick? And if it is cheaper, why not dash the whole cottage?

I suppose if we built another cottage like this, and close to it, the upper story should be faced with dark red brick, and the lower story with pebbledash.

The purlin in the roof supports the rafters, but what supports the purlin?

The width of the concrete foundations—3ft.—suggests loose soil. Why not build on hard ground and dispense with concrete?—I am, etc.,

X. Y. Z.

Lord Rosebery is having an addition made to the buildings on his Mid-Lothian home at Rosebery in the form of a private chapel and mausoleum. The new buildings are to cost about £8,000

The urban district council of Leek have elected as electrical engineer, in succession to Mr. Carr, retired, Mr. John Bemrose, of Tunbridge Wells, at a salary of £225 per annum, rising to £275 by annual increments of £10

The urban district council of Festiniog resolved on Friday to ask Mr. R C Jones, a local architect, for his fee for preparing a plan and estimate of new offices and council chamber at the rear of the present premises.

The Local Government Board has approved of the Prestatyn Urban District Council scheme to build fifteen workmen's dwellings. The houses, which are to be begun forthwith, will be built in two blocks, and the larger ones will have a bathroom.

The death is announced at Claughton, at the age of 74, of Mr. Robert Edward Johnston, a civil engineer, formerly of Shrewsbury. Mr. Johnston became chief superintendent of the Hooton and West Kirby Branch Railway, and also of the Hooton and Helsby Railway. Afterwards he was stationed at Shrewsbury.

Harpenden parish church has just received a gift from the hands of Mr. Frank O. Salisbury, the artist, who is leaving his native village to reside in London, in the form of a fresco depicting the Nativity of our Blessed Lord, the Adoration of the Shepherds, and the Worship of the Magi. The fresco, which is placed on the north wall of a side chapel, measures 11ft. by 8ft.

The water committee of Aberdeen Town Council unanimously agreed on Friday that an increased and improved water supply for the city should be provided from the River Dee, in terms of the engineer's report; but before asking the council to come to a final decision upon the scheme, resolved that the question be submitted to the electors at the ensuing municipal election.

The foundation-stone was laid on Thursday by Sir Henry Lopes of a western porch, which is to be added to St. John's Church, Horrabridge. The cost will be £300; Messrs. Hockin and Sons are the builders, and Mr. Pomeroy is the clerk of works. The architect is Mr. G. H. Fellowes Prynne, F.R.I.B.A., of London, from whose plans the church was built about twenty years ago.

The Mayor of Reading on Friday presented Mr. Thomas Aitken, foreman at the Tilehurst Waterworks, Reading, with a cheque for ten guineas from the Carnegie Hero Fund, for a conspicuous act of bravery in rescuing Mr. Lowthian, the consulting engineer, who fell down the waterworks well. Mr. Aitken recently received a medal at the hands of the King for his gallantry.

LEGAL INTELLIGENCE.

OXIDISED LETTERING.—On Friday, at the Clerkenwell County-court, a claim was made by the Brilliant Sign Company (1907), Ltd., Gray's Inn-road, W.C., against John M. Stewart, builder, of High-street, Sydenham, for £2 6s. 6d. Mr. Symes, solicitor for plaintiff, said the defendant, who was doing some alterations to a chemist's shop, gave plaintiffs an order for supplying and fixing some oxidised brass lettering. For the defence, it was contended that the letters were not uniform in size, and that they were not affixed correctly in line. The evidence on behalf of the plaintiffs, including experts, testified that the letters had been affixed in a workmanlike manner. The workman who carried out the fixing said that when he had finished the chemist came out, and expressed himself quite satisfied. Experts stated that in the casting of oxidised brass letters there was, in cooling, a greater shrinkage in some letters than in others. Defendant's foreman said that after plaintiffs' man had finished the work, witness telephoned to defendant, describing the letters as "an odd-and-even lot." Defendant said his customer declined to have the work as supplied by plaintiffs. The spacing, the unequal size of the letters, and the alignment were grounds of complaint. He obtained new letters and new boards from elsewhere, and had counterclaimed for £3 10s. 6d. in respect of the extra expense incurred. His honour said he was unable to find that the plaintiff's work was satisfactory. The deviation in some of the letters was such as to strike the eye. His judgment must be for defendant, on the claim and counterclaim.

BUILDER LIABLE TO A PENALTY OF £1,320.—At Bromyard, on Monday, William James, a builder, of Church-street, Bromyard, was summoned by the Board of Trade for failing to comply with Part 2 of the National Insurance Act by not stamping the unemployment books of four workmen in his employ. Sixteen summonses were considered, four each in respect of the following workmen: Alfred Hinksman, Albert Bridgwater, William Gardiner, and John Henry Hollings. Mr. Tree, of Worcester, who prosecuted on behalf of the Board of Trade, stated that in all 132 weeks' contributions had not been paid by the defendant, and defendant had made himself liable to a penalty of £1,320; but the Board of Trade had decided to prosecute in respect of four weeks of each workman, making sixteen summonses in all. Mr. Tree explained that an officer of the Board of Trade called upon Mr. James on August 16 with respect to the payment of unemployment insurance, and he was informed by the defendant that he did not intend to pay for juveniles, but he might pay for Hollings. After the summons had been issued, Mr. James wrote to the Board of Trade, stating he would pay the insurance of each of the workmen if they would withdraw the case; but the Board replied they could not. Mr. Tree said he was willing to leave the matter with the magistrates if Mr. James would undertake to pay up all the contributions he was liable to.—The magistrates considered this a very reasonable offer, and advised Mr. James to accept it. Defendant declined the offer, and said he wished to have the case gone into, and the magistrates to decide it upon its merits.—Mr. Muir, an insurance officer, of Birmingham, having given evidence, defendant, on oath, said he objected to stamp the unemployment cards of any workman under twenty-one years of age on principle, because it was no use to the workman, as he got nothing from the Act if he was out of work. He was not a resister, but had upheld the Act since it came into force. In his opinion it was a most trumpery charge, and he hoped the magistrates would, in dismissing the case, say it was one the Board of Trade should not have brought forward. The magistrates retired, and on returning, the chairman said they understood Mr. James was willing to pay up all the arrears, and that being so, and considering it was the first prosecution that had taken place at Bromyard, and bearing in mind that it was a difficult Act to understand, they would impose a small fine in each case. If any further cases were brought before them they would not be treated in so lenient a manner. Defendant was fined 10s. and costs in respect of each of the workmen Hollings and Bridgwater, 4s. and costs in respect of A. Hinksman, and 2s. and costs in respect of W. Gardiner. Only one summons was dealt with in respect of each workman, and the other summonses were dismissed on payment of the costs.

Mr. Lancelot S. Charleton, of Wayford Wood, Stalham, and Wye Agricultural College, has been appointed lecturer in agricultural surveying and building construction at Aspatria Agricultural College.

Our Illustrations.

ST. MARY'S CHURCH, HARROGATE.

This church, of which we give two reproductions of the drawings shown this year at the Royal Academy, with the plan, is so clearly illustrated as to need little description. There is a founder's chapel adjoining the south transept, in addition to the ordinary morning chapel, disposed in a line with the aisle on the same side of the nave. Over the crossing a square tower, with a belfry, crowns the composition, and a feature is made of the two vestries placed east of the chancel. The second vestry is made to conform with the building line, a symmetrical shape to its interior being contrived by the introduction of a lobby and lavatory in the north wall, the splay of the apsidal end being externally varied on this flank for the above reason. The north chancel aisle is seated choir-ways, and the font is situate at the west end of the nave in its orthodox position. Both transepts have screened entrances, and there are north and south porches, with a good space narthex-like at the west end of the building. The aisles are wider than in most modern churches, making the big windows of the clerestory a necessity. The sturdy plain piers of the arcade have the arches prettily designed, without caps of any kind, and a richly-traceried screen, beyond the crossing, incloses the choir. The walls externally are of stone, the treatment being massive and simple, rather flat roofs covering the aisles, in contradistinction to the high pitch of the roofs over the choir and nave. At the east end of the nave over the tower arch a large field for colour decoration is provided, as shown by the interior perspective. The architect is Mr. Walter Tapper, F.R.I.B.A., of London.



GROUND FLOOR PLAN.

FORREST LODGE, KIRKCUDBRIGHTSHIRE. Mr. G. Ramsay Thomson, Architect.

X. AND XII. BISHOPSGATE, E.C.

This excellent building, designed for offices, has recently been erected in Bishopsgate. It is immediately next to the well known bank by Mr. Norman Shaw, which has a deep cornice. It was considered desirable to carry on the line of this cornice, and certain of the stringcourses. The result is very satisfactory, the two buildings serving as a complement one to the other. Mr. Gerald C. Horsley, F.R.I.B.A., is the architect of this work, and the contractors were Messrs. Higgs and Hill, Ltd., of Crown Works, South Lambeth road, S.W. The heating, plumbing, and hot water work was executed by Messrs. Burn Bros., and the electric lift by Messrs. Waygood and Co. Our illustration is reproduced from the original, which was exhibited at the Royal Academy this year.

FORREST LODGE, KIRKCUDBRIGHTSHIRE.

This house, of which we give a view and plan, is situated in a moorland district. The drawing was exhibited at the Royal Scottish Academy. The materials employed are local whinstone, roughcasted. The facings are of Creetown granite, the roofs being covered with small-sized Burlington slates. The interior woodwork is of Kauri pine. Mr. G. Ramsay Thomson, of Dumfries, is the architect.

THE ROYAL NATIONAL EISTEDDFOD OF WALES, 1913: PRIZE DESIGN FOR A WELSH VILLAGE INSTITUTE.

The assessor in this competition at Abergavenny was Mr. Harold Hughes, F.R.I.B.A., of Bangor, and the author of the design chosen for the prize is Mr. C. Owain ap Gruffydd, of Hereford-street, Bayswater, W. There were twenty competitors, and we illustrate the selected plan. The following particulars have been sent us by the architect, who was the prize-winner for the design of this year's Bardic chair at the Eisteddfod:—"In designing this building, the general social side of the village was duly considered. The site for which it is intended is an open one fronting on to the main road through the village. A forecourt is arranged so as to allow of the villagers being able to congregate and discuss the topics of the day without interfering with the traffic in the



ROYAL NATIONAL EISTEDDFOD OF WALES.—A WELSH VILLAGE INSTITUTE.
Prize Design by Mr. C. Owain ap Gruffydd, Architect.

High-street. The plan explains itself, and externally the materials are to be local random walling, with dressed angles and mullions, the roof being covered with small local rough slates, valleys to be swept, all the ridges being in stone. Internally, the woodwork to be red deal slightly oiled. The forecourt or courtyard is intended to be paved with random slate and stone slabs intermixed."

CHIPS.

The Hanwell Urban District Council have received sanction from the Local Government Board to borrow £870 and £450 for the purpose of street improvements by the widening of Boston-road and Church-road respectively.

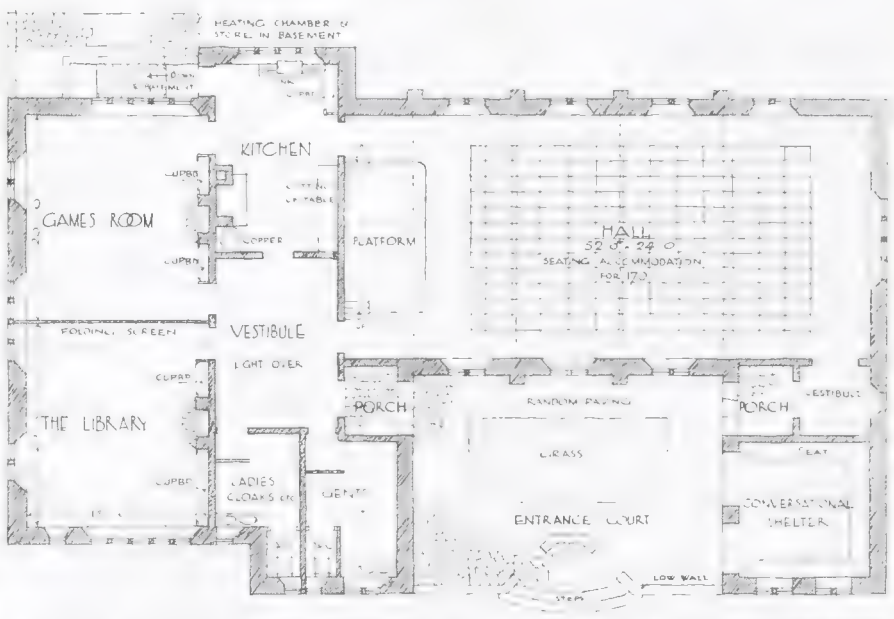
The new spire of St. Cuthbert's Church, Cotherstone, Co. Durham, is nearing completion. The spire was designed by and has been erected under the supervision of Messrs. Clark and Moscrop, architects, of Darlington. The contractor is Mr. R. Wilson, of Barnard Castle.

The Finchley Urban District Council have received the sanction of the Local Government Board to loans of £5,410 for the purchase of Brook Farm Estate, Whetstone, for purposes of public walks, pleasure-grounds, and allotments. The council propose to set aside fourteen acres for allotments.

The new Roman Catholic school at Grimethorpe, to serve the needs of that place and the adjacent villages of Brierley and Shafton, was opened on Thursday in last week. Built at a cost of over £1,000, it provides accommodation for 150 scholars. It consists of three class-rooms, which can be converted into one for assembly purposes.

Mr. Stanford, Local Government Board inspector, has held an inquiry at Carlisle into an application for sanction to borrow the sum of £8,034 for an extension of plant at the city electricity works, and £4,300 for the installation of a high-tension supply to the outer areas of the city. The inspector also inquired into the corporation's application for borrowing powers for £6,500 for the sewering of Batcherby, Durran Hill, and Harraby, three of the districts taken into the city under the recent extension order.

Major C. E. Norton, R.E., an inspector under the Local Government Board, held an inquiry on Tuesday in the council hall, Amble, with reference to the application to the Local Government Board by the Amble Rural District Council for sanction to borrow the sums of £243, £585, and £452 for works of water supply for the townships of Hauxley, Togston, and Warkworth, respectively, including the execution of the work in the townships of Birling, Buston Low, Sturton Grange, and Woodhouse.



ROYAL NATIONAL EISTEDDFOD OF WALES. A WELSH VILLAGE INSTITUTE. Prize Design by Mr. C. Owain ap Gruffydd, Architect.

The Local Government Board have sanctioned a loan of £13,830 to the town council of Tenterden for carrying out a sewerage scheme.

The tramways and electricity committee of the Leicester Corporation recommend the immediate construction of a line of tramways from the West Bridge along St. Augustine-street and King Richard's-road to Fosse-road. The estimated cost is £30,000.

Operations on the largest reinforced concrete bridge in Canada were commenced at Saskatoon last week, when Dr. Murray, president of the Saskatchewan University, turned the first sod. The bridge will be 1,600ft. long and 63ft. wide, having a 45ft. roadway. Mr. R. J. Lecky is the contractor.

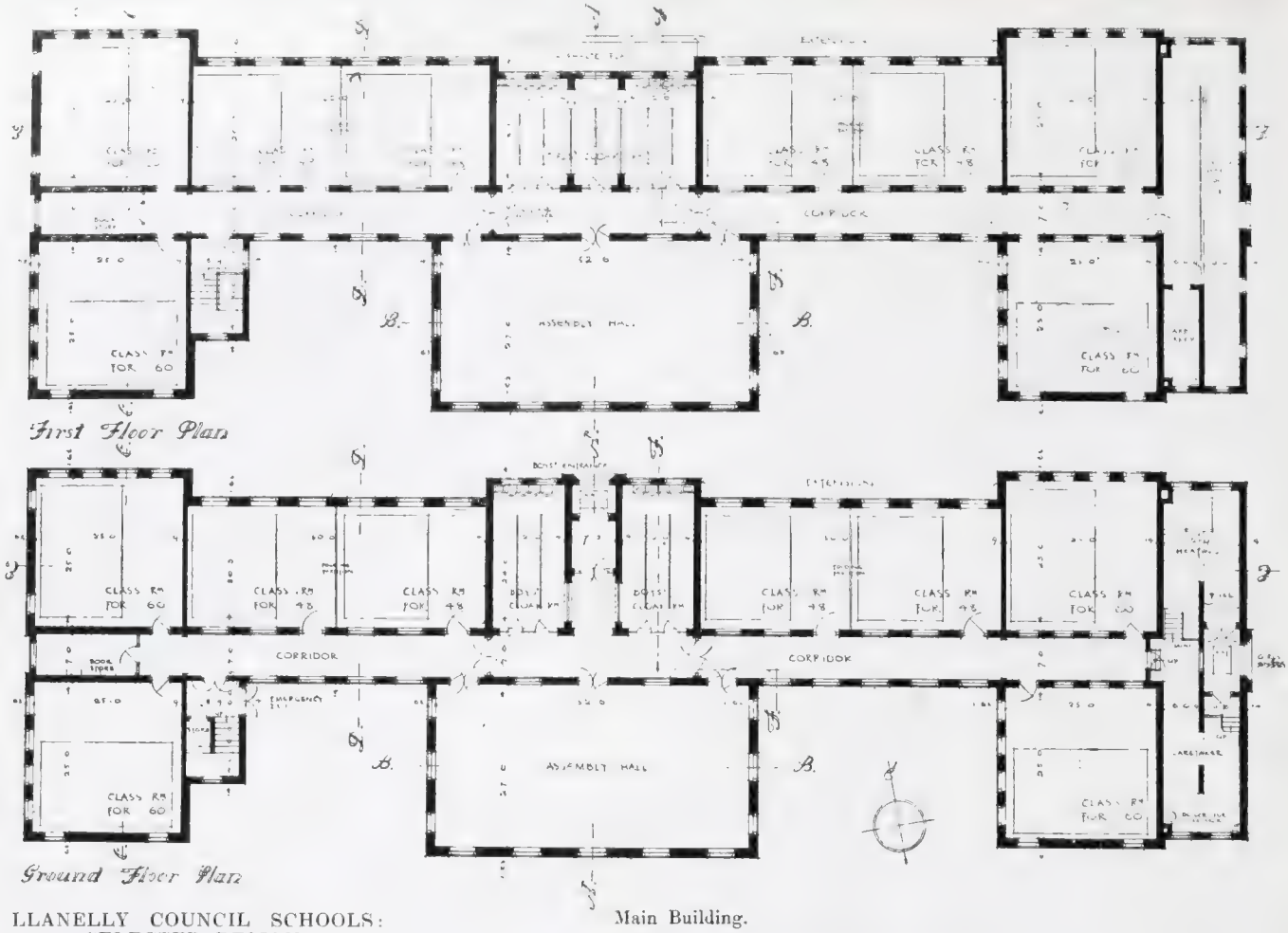
Mr. Charles Frederick Selby, of Ravensbourne, Stoke Fleming, has been appointed on the commission of the peace for Devonshire. Mr. C. F. Selby is well known in the Three Towns as a former partner in the firm of Corderoy and Selby, of Plymouth, Government quantity surveyors. Mr. Selby carried out important duties at Dartmouth in connection with the building of the Royal Naval College, and afterwards went to Stoke Fleming, near by, to reside.

Mr. Michael A. Manning, builder, Dublin, has been appointed by the South Dublin Board of Guardians clerk of works, at a commencing salary of £117, rising to £169 per annum.

At a special meeting of the technical instruction committee at Cookstown, Ireland, it has been resolved to invite competitive plans for the building of the proposed new technical school.

At the last meeting of the town council of Edinburgh, it was reported that Mr. John Bryce, architect, George-street, Edinburgh, has presented a bust of David Bryce, R.S.A., 1803-1876, to the corporation museum.

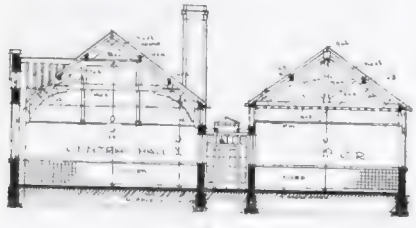
The Evesham Rural District Council have applied to the Local Government Board for sanction to borrow £86,350 for the purchase of land and the erection of cottages at Offenham near Evesham under the Housing of the Working Classes Act, 1890, and Mr. E. Leonard, an inspector of the Local Government Board, has held an inquiry as to the scheme at Offenham. The surveyor, Mr. Holloway, said it was proposed to build 26 cottages, to let with an acre of land at 4s. 6d. per week, or with a chain of land at 4s.



Main Building.

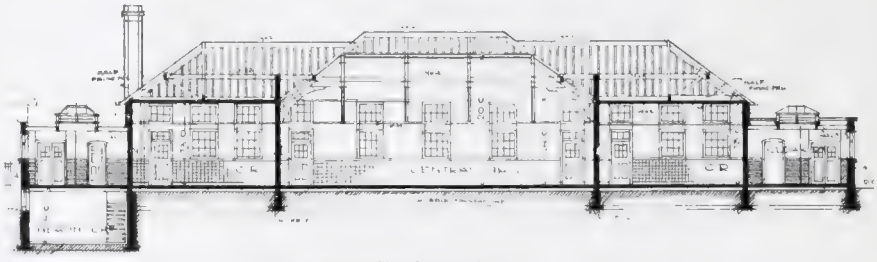
LLANELLY COUNCIL SCHOOLS: SELECTED DESIGN.

These buildings provide accommodation for 456 infants, 432 girls, and 432 boys, in two separate blocks, together with a separate block for domestic subjects. The site is in Stebonheath terrace, Llanelly. The following principles have been followed as far as possible:—Isolation of the assembly-hall; south lighting to classrooms; cross-ventilation throughout; isolation of cloakrooms for teaching section; direct access to and from classrooms to cloakrooms and entrances, and well-shaped and sunny playgrounds.. The buildings are treated in a simple and inexpensive manner throughout, and will be built with local common and facing bricks, and the roofs covered with a Welsh slate, the dressing to sills, copings, strings, and the like being a vitreous grey terracotta. The

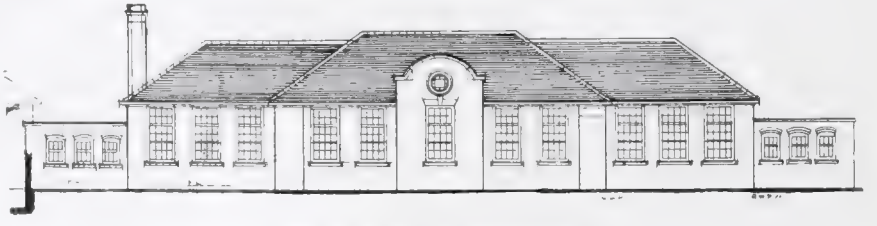


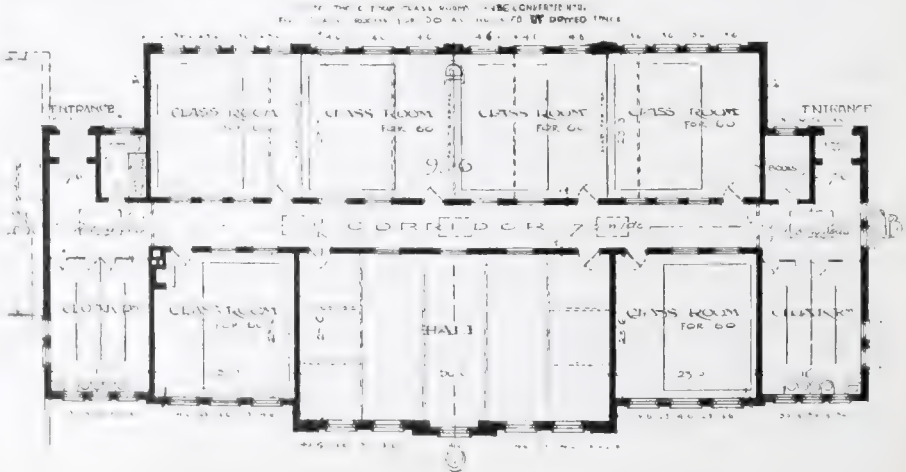
Cross Section.

classrooms on the ground floor will be laid with wood blocks, while the assembly-halls and the classrooms on the upper floor, which will be in concrete, will be laid with patent jointless flooring. The internal joiner's-work will be in pitch-pine, the dados throughout assembly-halls and classrooms being tiled. The windows throughout the teaching-rooms will have pivoted sheets above transsomes. Teachers' rooms are not provided. The amount allowed by the Conditions for the completed school buildings, including an amount for furniture, was £12 per child. Messrs. J. H. Woodhouse, F.R.I.B.A., and B. Sagar Dean, Licentiate R.I.B.A., of King street, Manchester, are the architects and their design here illustrated was chosen in the recent competition.



Longitudinal Section.

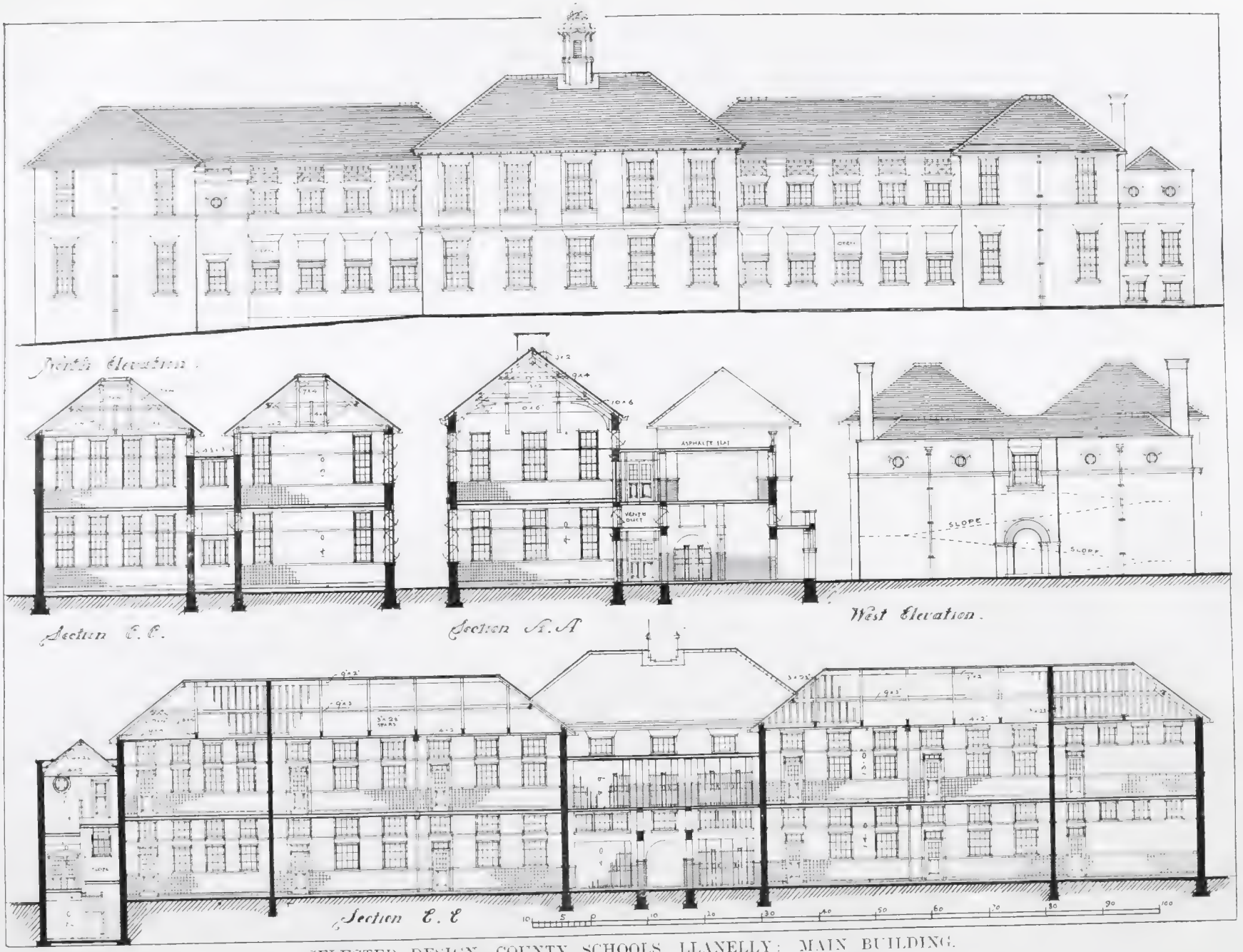




SELECTED DESIGN, INFANT SCHOOL, LLANELLY.

Messrs. J. H. Woodhouse, F.R.I.B.A., and B. Sagar Dean, Lic.R.I.B.A., Architects.

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SELECTED DESIGN, COUNTY SCHOOLS, LLANELLY: MAIN BUILDING.

Messrs. J. H. Woodhouse, F.R.I.B.A., and B. Sagar Dean, Licentiate R.I.B.A., Architects.

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CHURCH OF ST. MARY, HARROGATE: INTERIOR, LOOKING EAST.

Mr. WALTER TAPPER, F.R.I.B.A., Architect.

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Mr. Walter Tapper, F.R.I.B.A., Architect.

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NO. 5, BISHOPSGATE, E.C.—Mr. Gordon C. Hoiste, F.R.I.B.A., Architect.



FORREST LODGE, KIRKCUDBRIGHTSHIRE. Mr. G. Ramsay Thomson, Architect.

Intercommunication.

GUINEAS FOR BEST REPLIES.

We offer a prize of one guinea every week for what we deem the best reply to any query appearing in this column which we deem worth insertion.

Replies must be sent in over real name and address. No others can receive a prize. The Editor's judgment is final.

This competition is restricted to buyers of the paper, and with each reply a coupon cut from our front page must be enclosed.

Any number of replies can be sent, but a coupon of this date must accompany each.

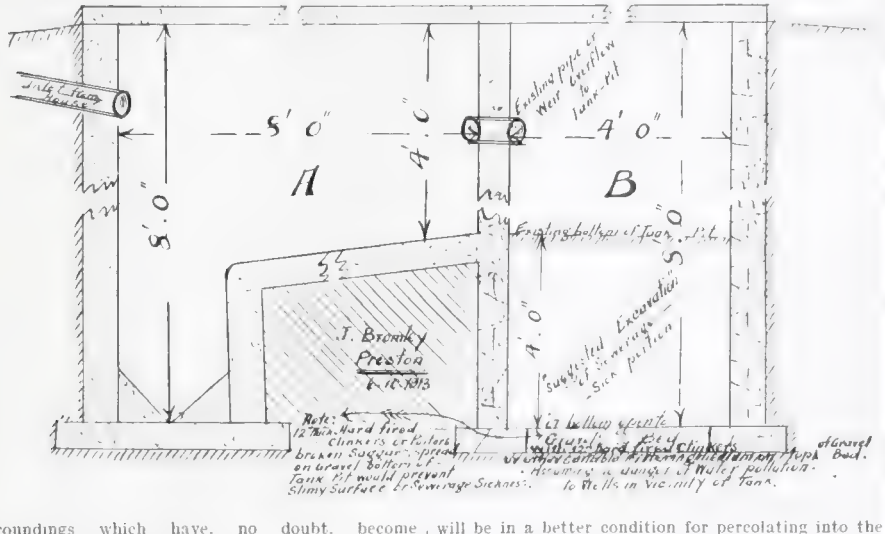
All else being equal, brief replies will stand the best chance. We emphasise this, as some correspondents ignore the fact that querists want terse facts, not long essays. Any necessary illustrations must be in line only—no tints or washes—and about twice the size they are meant to be reproduced. We are unable to avail ourselves of replies that contain illustrations unless we receive them by first post on Tuesdays.

The right to withhold the prize in the event of no reply being received worthy of it is reserved by the Editor, who also claims the right to publish any other replies he may deem useful.

We divide the guinea between Mr J. Bromley, Mr C. Hoffman, and Mr H. G. Latham.

REPLIES.

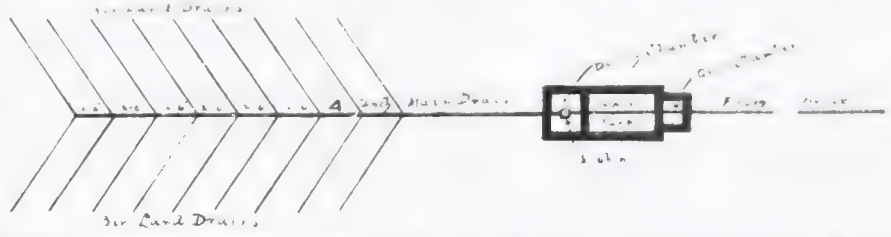
[13132.]—SEWAGE DISPOSAL.—Having had many years' experience of country house sewage systems, in my opinion, "Excalibur's" tank requires clearing out, by pumping or otherwise, according to the arrangements made on the top of tank. The fact of his septic tank and pit system having worked serenely for eleven years, and then the tank pit, after three months' clearing out, again becoming choked, conclusively proves this. To lengthen the life of this cleaning-out process, the tank at bottom (if not already so) should be formed as per longitudinal section A, and the tank-pit (the bottom and



surroundings which have, no doubt, become sewerage sick) lowered to the depth as shown at B, which, according to the past basis of operations, is already proven. With the existing size of tanks on plan, lowered as per suggested depths, with a population of 30, should give "Excalibur" complete rest from cleansing operations for a period of a quarter of a century, at least.—James Bromley, Rothwell Estate Office, Miller-arcade, Preston, Lancs.

[13132.]—SEWAGE DISPOSAL.—I know from experience that sand, gravel, and chalk subsoils are practically useless for the filtration of sewage effluent. With regard to the gravel subsoil named, it will be found that the mean natural water-level is considerably above the bottom of the pit. Therefore, the pit should be cleaned out and carefully steined with cement and puddled outside, and an overflow pipe fixed near the top, and conducted to a secondary "soak-away" pit. The septic tank has a capacity for about 20 gallons per person per day, which should be ample, providing storm-water does not enter, and that the discharge allows for periods of rest for anærobic action to take place. It must, however, be understood that should the nature of the sewage have altered within the period named by the correspondent, an analytical specialist's advice ought to be sought, as in such a case the system would have to be augmented by further chambers, or beds. My experience is that gravel subsoil water acts like the tides, and invariably drives back surface water and matter. Messrs. Tuke and Bell, Ltd., 67, Leadenhall-street, E.C., have adopted a smart scheme of "secret" filtration, absolutely void of smell should initial expenditure be no detriment.—A. H. Winterburn, M.S.A., 12, South-view, Blyth-road Worksop, Notts.

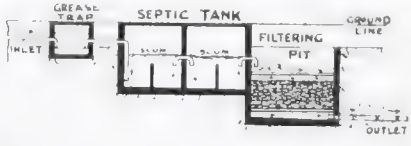
[13132.]—SEWAGE DISPOSAL.—The most effective method of rendering the effluent from the septic tank innocuous is by installing a system of sub-irrigation drains. In the upper layers of earth, bacteria are present in considerable number. It is now realised that all methods of purification of sewage are forms of bacteriological purification. This is so, whether the sewage is purified by being run over land, where the bacteria are present in the interstices of the soil, or whether it is run through especially-formed filters. When sewage is discharged into a sub-irrigation system the bacteria quickly transform it into simple and harmless effluent, and in a form that may readily be assimilated by plant life. On account of the number of bacteria which are present in the upper earth, it has been termed the "living earth," and nearly all the purification by a soil is done within the upper three feet; below this depth, little purification is effected by a soil, and a depth is soon reached where organisms do not appear to exist. The accompanying sketch depicts a simple system of sub-irrigation, arranged so as to distribute the effluent from the septic tank so that it can be absorbed by a given area of land. The drains should be kept as near the surface as practicable, and the effluent requires to be discharged so that every part of the prepared area receives its quota. For the purpose of effecting uniform distribution of the effluent, a given volume must be discharged at one time; this method prevents the overdosing of isolated parts of the area, and allows the bacteria to better perform their work. The septic tank installation receives the sewage from the drain leading from the house. The purpose of the septic tank is to liquefy as far as possible the organic solids in the sewage, in order that the latter will be in a better condition for percolating into the earth. A septic tank, when once in working order, should not be emptied; but provision should be made for removing any irreducible matter which accumulates in it. The effluent passes from the septic tank into the dosing chamber, the size of which should be 4ft. by 4ft. by 3ft. The chamber is fitted with a plenum automatic siphon for discharging its contents into the sub-irrigation drains. To the outgo of the siphon a pipe should be joined, which serves the purpose of an overflow for the chamber, and also as a ventilation-pipe for the field drains. As the septic tank is located in the immediate neighbourhood of a building, it may be advisable to dispense with the disconnecting trap on the drain, and to ventilate the installation by means of a soil- and ventilating-pipe, or other convenient ventilation. A layer of earth should be placed upon the roof of the chambers, that any escaping gases may be deodorised in passing through. A 4in. main stoneware distributing drain, with Portland cement joints, conveys the effluent from the dosing chamber to the disposal area. About every 2ft. 6in., Y branches are placed; from these run lines of 3in. land drains, which should be laid from 12in. to 18in. below the surface of the ground, if possible. The land drains should be surrounded with stones, for the purpose of preventing the entrance of earth, and to permit aeration. The fall of the main distributing drain must not be more than 1in. in 25ft., and that in connection with the land drains which branch from same not more than 1in. in 50ft. The length of land drain required in a gravelly soil is 1ft. for each gallon of effluent discharged from the dosing chamber. As the capacity of the dosing chamber is 360 gallons, which is estimated to be half the day's flow, the length of the land drains will be 720ft. When it is necessary to arrange the disposal area on a hillside, the main distributing drain cannot be laid to follow the natural surface of the ground



because at each discharge of the siphon the effluent would flow with great force direct to the end of the drain-pipes, and not through the whole soil. This difficulty can be overcome by ramping between each branch.—H. G. Latham, M.R.S.I., A.M.I.H.V.E., Certified Sanitary Inspector, Honours Diploma in Plumbing and Sanitation, City and Guilds of London Inst., Registered Plumber, Penn House, Rudall-crescent, Hampstead, N.W.

[13132.]—SEWAGE DISPOSAL.—I think, from the description given, that the trouble is not so much that the ground is water-logged, as that the sides of "soak-away" tank are clogged by the grease lodge. Clean out the tank, clearing the sides, and making sure that the joints of walling are well open. It is a good plan to remove the soil all round for a foot or so, and fill in with stones or brick rubbish, also to open one or more trenches radiating from the tank and away from the house, anyhow, to give a larger area for the effluent to get away into the gravel, where the filtration is accomplished. You say the effluent is now clear; it looks as if at some time the septic tank was not working properly. It should be properly trapped off and airtight, and should not be disturbed when working properly. I can speak from experience, having treated several tanks in this way with satisfactory results.—Practical.

[13132.]—SEWAGE DISPOSAL.—The system has become clogged, there is but little doubt, and it must also be borne in mind that the septic tank only prepares the sewage for purification. An arrangement the writer has found to answer the purpose well, and under somewhat similar circumstances, is shown by the accompanying diagram. In the first place, the grease should be removed; secondly, the



septic tank should be divided by a partition wall, and two small screens fixed intermediately; and, thirdly, the pit reconstructed and converted into a filtering chamber, with perforated distributing pipes, three feet of fine to large rubble, or other porous material, packed upon an expanded metal platform, with channel beneath leading to outlet consisting of open jointed drain-pipes. The revised system herewith illustrated will not clog, or in any way become a nuisance by giving off offensive smells.—Charles A. Longley, 52, Ivanhoe-road, Denmark Park, London.

[13132.]—SEWAGE DISPOSAL.—Querist states that a septic tank, situate in his front garden, has worked well for eight or nine years, but is now less efficient than formerly. The present population is given as 30; but the querist omits to state what was the population when first the tank was constructed. For a population of 30, the querist will see from the following calculations that the tank is much too small to fulfil modern requirements:—Capacity of tank = one day's flow of sewage = 30 persons at 30 gallons per head = 900 gallons = 900 gallons = 120 cubic feet = 144 cubic feet. Present tank capacity = 8ft. × 4ft. × 3ft. = 96ft. (cu.). It is therefore obvious there is a greater flow than formerly, either from increased population, or from some other supplementary source. Have any of the family recently taken up photography? Or does the querist allow the waste water from his garage to enter the drains? Either of these would render the tank inoperative, and the sewage would form sludge instead of being broken up by septic action. If the ground was water-logged the surroundings would show dampness. Do they? Perhaps the joints of the open masonry have become clogged, and prevent the effluent percolating the soil. Nothing definite can be stated on the information supplied, excepting that the tank is too small; all else can only be surmise, without making a personal examination. Look up BUILDING NEWS for February 24, 1911.—Frank Wilson, 225, Nottingham-street, Sheffield.

[13132.]—SEWAGE DISPOSAL.—Answering "Excalibur," it is evident that the trouble experienced arises from the septic tank, which should have been cleaned out ere this. My explanation of the present condition of the sewage system is that the size of the septic tank (8ft. by 4ft. by 3ft.) = 96cu.ft., is too small; it would not be full to the top, but holding, say, some 700 gallons. Assuming that 20 gallons per person has to be treated daily by the tank, this would give a total of 600 gallons, showing that the tank is taxed to its fullest capacity at least once under 24 hours. Therefore, I consider the efficiency of the septic tank is not adequate to properly reduce the crude sewage before it passes into the soak-away. The effluent may be clear to a certain degree; but is this so when a heavy discharge is received into the septic tank. No doubt, when

the soak-away cut by ft by ft was first constructed, and during the next few years, the overflowing sludge permeated the walls and surrounding soil but, as the latter became choked, the present trouble arose. There are two methods I would suggest for rendering the system efficient. The first is to increase the size of the septic tank to a holding capacity of at least 750 gallons, and utilise the soak-away filter in its present size and form to dispose of the effluent, which would then be perfectly harmless. This, of course, would depend upon whether the porosity is left in the soil surrounding the soak-away to permit permeation. The other method, which I illustrate with a sketch, and consider would be more efficient, is that of utilising, after cleaning out, the present septic tank without any alteration in size, cleaning out the soak-away and cementing around same, making it into a settling chamber, from which the effluent can be taken through earthenware field-pipes (as shown), laid with open joints, the liquid escaping through these and into the soil without causing any inconvenience by smell, etc. Messrs. Burn Bros., whose address appears in the "Building News Directory for Architects," specialise in this sort of work, and no doubt would be pleased to give you further information, if necessary.—C. Hollman, M.S.A., 69, Edwards-street, Wrexham, N. Wales.

[11312.]—SEWAGE DISPOSAL. Without doubt the septic tank requires to be cleaned out, the suspended matter passed on from the tank being too "heavy" for the pit to deal with, thus forming the sludge, which, on account of the liquid going to the outlets in the dry walling, has eventually closed same, and formed a watertight lining to the pit. I would recommend that the tank be cleaned out, and, if possible, be made deeper, as I consider it too shallow for its area, the pit to be rebuilt with new material, when the system will again be found to work quite efficiently. "Excalibur" should also remember that ten years is too long a time to have a tank in use without cleaning out, when he comes to think of the amount of matter such as paper, etc., which has to be discharged.—K. H. Read, Lecturer on Building Construction, Gloucester and Stroud Technical Schools.

WATER SUPPLY AND SANITARY MATTERS.

FAVERSHAM.—The sewage-disposal works have been completed. The scheme had to be embarked upon by the corporation as a result of the action of the Faversham Oyster Fishery Co. to restrain them from discharging crude sewage into the Creek. The carrying out of the scheme has occupied two and a half years and has cost £40,000. The scheme has been engineered by the borough surveyor, Mr. S. Percy Andrews.

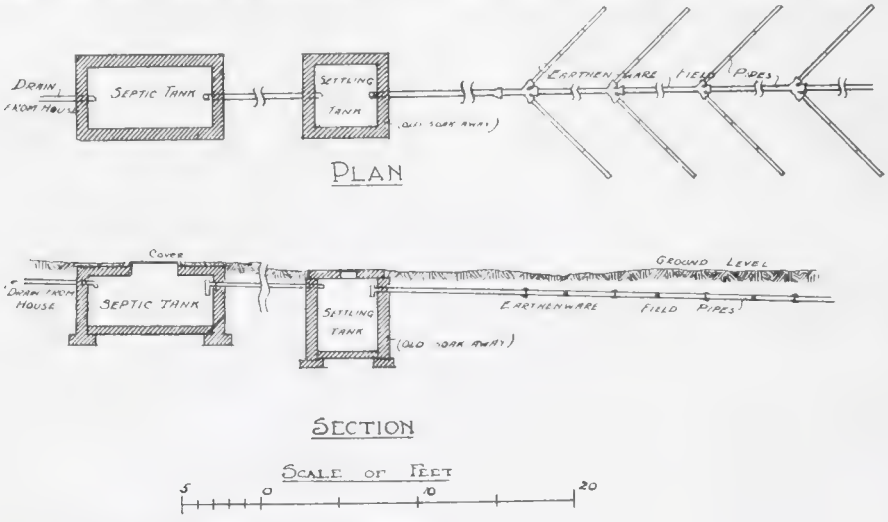
The urban district council of Melton Mowbray have adopted revised plans by Messrs. Dawson and Mansfield for the extension of the refuse destructor buildings and plant at an estimated cost of £2,000.

The steel lighthouse (1901) built on Abbotscliff, Dover, which was erected about 30 years ago by Sir Edward Watkin as a landmark to show the shore end of the Channel Tunnel works, and at present being demolished.

At the National Gas Exhibition, Shepherd's Bush, a conference was held yesterday (Thursday) on the question of "Coal Smoke Abatement in Cities." Sir W. H. Bennett delivered a presidential address dealing with the loss to health and pocket caused by the smoke nuisance. Professor Vivian B. Lewes read a paper on "The Gas Industry in Relation to Smoke Abatement," and Dr. A. Des Voeux, founder and hon. treasurer of the Coal Smoke Abatement Society, explained what the movement has done and what it proposes to do.

Our Office Table.

Lord Burghclere, the chairman of the Historical Monuments Royal Commission, states that every monument scheduled in the inventoires now in course of publication is being photographed, and, together with the "cards of record" of the investigators, may be inspected by students at the Commissioners' office at Scotland House, and later on will be removed to the Record Office in Fetter-lane. The descriptions of the monuments in the inventories, although, the chairman trusts, adequate, are naturally limited in extent for obvious reasons of space; but the fullest descriptions, together with plans and drawings of detail, are, he points out, open to the inspection of students, and form the true National Inventory of Monuments in England, which, by the terms of the reference, it is the Royal Commissioners' primary duty to make. It would be well if there were also deposited in the museum or free library of the capital town of each county copies of the records and representations of the historical monuments to be found in that county. At present the accessibility of documents stored at the Records Office is not made known to students by public announcement.



The Royal Commission on the Ancient and Historical Monuments in Wales and Monmouthshire have just published an inventory of the ancient monuments of Radnorshire. The county is not rich in prehistoric remains; but it possesses several examples of meinihirion and stone circles. The Commissioners think that the number of defensive structures inventoried, ranging from the simplest form of bank or ditch surrounding the top of a hill, to the great camp of Burga, will come as a revelation to antiquarians. The gradually accumulating weight of evidence trends towards the conclusion that these great hill fortresses were constructed not long before the advent of the Romans, and perhaps even in consequence thereof, and that some of them were almost certainly occupied during the struggle of the British tribes with the Romans. In Castell Collen, near Llandrindod Wells, the county possesses a Roman station which is at present in course of excavation. The Commissioners describe twenty-one mount castles, where the mount and its bailey are unmistakable, while there are seven or eight more with moats that lack all sign of enclosures. Much interest attaches to some of the old churches of Radnorshire, though most of them have been restored to such an extent as to have lost their local characteristics and air of extreme rudeness. The cross in Llowes Churchyard vies with the font of Old Radnor in the distinction of being the oldest Christian emblem in the county. The form of the earlier of the crosses cut upon the Llowes slab and its affinity to the early crosses of Cornwall and Ireland carry it back into the indistinct period prior to the Norman Conquest.

In a lengthy decision just made known, the Supreme Court of the State of Washington has affirmed the King County Superior Court in the suit of A. W. Gould and others against R. C. McCormick and wife, appellants. The lower tribunal awarded the architects' damages in the sum of 7,239 dollars and 1,500 dollars for attorney fees, as the result of the appellants discharging them before the new nine-story hotel they were building in Seattle was completed. The court rules that under the terms of the contract the owners had no right to discharge the architects in an arbitrary manner, and agrees with the lower court that no reasonable grounds for their discharge were shown.

The Delegates for Forestry for Oxford University have appointed Mr. Bertram B. Osmaston to be Forestry Adviser to private proprietors in the Counties of Derby, Stafford, Leicester, Warwick, Oxford, Berks, Bucks, Hants, Dorset, Surrey, Kent, and Sussex, from July 1, 1913, in succession to Mr. Sam Carr, retired. The Diploma in Forestry has been awarded to the following students, who passed the First and Second Examinations for the Diploma, and have undergone a course of practical training at approved places in England, Germany, France, and Switzerland: 1, M. M. Ali Beg, non-collegiate; 2, E. W. Carroll, B.A., Hertford College; 3, R. Dhanukoti, non-collegiate; 4, A. E. Eden, New College; 5, H. M. Gardner, B.A., Merton College; 6, G. G. King, Wadham College; 7, W. S. Shepherd, Trinity College; 8, C. E. Simmons, St. John's College; 9, H. Trotter, St. John's College.

The Fitzwilliam Museum Syndicate have just issued to the Senate of Cambridge University their first report on the Marlay bequest. The late Charles Brinsley Marlay bequeathed to the University of Cambridge his large collection of pictures and other works of art, and the sum of £80,000 to be used in housing and arranging his collections, and in providing salaries for a curator or curators. The syndicate now recommend that the financial board be authorised to negotiate with the Master and Fellows of Peterhouse for the purchase of the site adjoining the Fitzwilliam Museum on the south, and known as Grove Lodge. They recommend that superintendence of the Marlay collection shall be added to the duties of the Director of the Fitzwilliam Museum, and that his future stipend shall be at the rate of £850 per annum.

The special features of the forty-third autumn exhibition at Liverpool are the loan collections of pictures by the late Sir Laurence Alma-Tadema, and the cabinet paintings by 19th-century Dutch and French artists. The place of honour in the centre of the long wall at the Walker Art Gallery is Leighton's "Daphnephoria," lent by Sir William Lever. Among the chief landscapes are works by David Murray, Hughes-Stanton, Finlay Mackinnon, and Arnold Priestman, and the late Sir Alfred East. The last named is represented by his "Rivington Pike, Bolton," recently on view at Burlington House. Among the portraits are characteristic works by Sargent, Orpen, Lavery, Solomon, and Cadogan Cowper. Two of the pictures acquired this year by the Chantrey Trustees, by Charles Sims and J. W. West, are separated by a landscape ("Villeneuve") by Oliver Hall. The water-colour drawings comprise works by Carl Hagedon, A. R. Barker, Claude A. Shepperson, and W. R. Flint.

The workmen who have been engaged during the past six months, under the auspices of H.M. Board of Works, on the walls of the Arbroath Abbey ruins, with a view to their preservation, have just discovered in the west of the exterior wall of the south transept two recesses, with a 12in. pier between, which had been built up solid from the bottom to the height of 2ft. 6in., and surmounted by a modern brick wall, built up to the under side of stone which formed the lintel of the recesses. Both brick and stone work have been removed, and the recesses, which are in a good state of preservation, are now exposed to view. A series of arches, seven in number, which had been covered up and faced with small stones and lime, have also been revealed in the

same wall by the operations of the workmen. Hitherto these arches were not known to exist. The west wall of the south aisle has been treated similarly to that of the south transept, and now presents an appearance uniform with the old surrounding work. The east side of the south transept also contains seven arches, similar to those found on the west side, in a fine state of preservation. The men will continue operations for another week. The work will be carried on year by year until the whole of the masonry of the abbey has been cleaned and pointed.

Dr. R. W. C. Pierce, medical officer of health, has reported to the Guildford Rural District Council on a weather-board cottage recently erected by Mr. J. St. Loe Strachey on Merrow Common, near Guildford. He commends the precautions taken against damp by the laying of the floor-boards on the ground floor in pitch on cement concrete, and states that without doubt well-constructed weather-boarding will effectually keep out the wet, and walls constructed on the plan of this cottage are likely to remain much drier than walls made of cheap and porous brick. The defects, such as the width of window-sills and ventilation of the larder, are not intrinsic. While the wooden cottage can, apart from those defects, be passed as satisfactory from a health point of view, he does not recommend the general adoption of this type of cottage in rural districts. A more artistic and substantial structure should be aimed at, even at an increased cost. The difficulty, caused by the disparity between the high cost of construction and the low wages of the workers, should not be bridged over by the erection of unsatisfactory dwellings which in a few years time it may be necessary to supersede.

"Agricultural Drafting," by Charles B. Howe, B.E. (London: Chapman and Hall, Ltd., Henrietta-street, W.C., 5s. 6d.) will be found useful by all students of agricultural engineering and surveying. It is not a cast-iron scheme of study, and therefore—especially under the guidance of a judicious teacher—will be found to cover the needs and variations of local conditions, and more completely so with the aid of the supplementary loose leaf sheets which can be had of the publishers.

The 12th-century Yorkshire village church of Thorpton-le-Street was reopened last week after restoration and internal decoration.

Messrs. Perry and Fowler, architects, Vancouver, have been commissioned to prepare plans for the proposed Dominion drill-hall, to be erected in Grandview, Vancouver. The building will be of fireproof construction, costing about 200,000 dollars.

The statue erected in Kelvingrove Park, Glasgow, to commemorate the life and scientific achievements of Lord Kelvin, was unveiled on Wednesday by the Right Hon. Augustine Birrell, Lord Rector of Glasgow University. The statue, which is the work of Mr. A. M. Shannan, A.R.S.A., is of bronze, and stands on a pedestal of granite; it depicts the subject in his University robes, holding in one hand a pencil, and in the other a notebook.

In the Faculty of Science at Birmingham University, Professor Frankland succeeds as Dean Professor S. M. Dixon, who has been appointed Professor of Civil Engineering at the Imperial College of Science and Technology, London. Dr. F. C. Lee will succeed to the chair vacated by Professor Dixon. Dr. Lee was for 11 years lecturer in engineering at the Imperial College, and for the last two years has been an inspector of technical schools under the Board of Education.

A Local Government Board inquiry was held at Middlesbrough this week by Major C. E. Norton, R.E., for sanction by the corporation to the borrowing of £3,575 for wood-paving works required. The plans and proposals were explained, and evidence in support of the application given by Mr. S. E. Burgess, M.Inst.C.E., borough engineer. At the conclusion of this inquiry, an appeal by frontage-owners against apportionment charges for private street improvement works was also heard by Major Norton. In this case also, evidence by the borough engineer was given in support of the works as carried out. The inspector, in due course, will make his report to the Board.

MEETINGS FOR THE ENSUING WEEK.

FRIDAY.—To-day: Glasgow Architectural Craftsmen's Society.—"City Churches," by Alexander Gordon, F.S.A. Scot.

TUESDAY.—Institution of Heating and Mining Engineers.—Annual Meeting in the Botanical Museum, University College, Gower-street, W.C.—"Temperature Gradients and the Heat Loss Factor," by George Chesser.—"Accelerated Circulation," by Alfred E. Wheeler. 7 p.m.

THURSDAY.—Society of Architects.—"Church Plate," by Christopher A. Markham, F.S.A. 28, Bedford-square, W.C. 8 p.m.—University College, Gower-street.—"The Work of the English Architects of the 18th Century and of the Neo-Classic School of the 19th Century," by A. E. Richardson. 6 p.m.

FRIDAY, Oct. 17.—Junior Institution of Engineers.—"Education."—South Kensington Refectories," by George Lovell. 20, Victoria-street, S.W.

Royal Society of Architects of Wales.—Provincial Sessional Meeting, at the Town Hall, Newcastle-on-Tyne. Discussion on "Housing Problems in a Northern Industrial Town," to be opened by Dr. S. J. Clegg, 7.30 p.m.

At St. Peter's Church, Plymouth, on Sunday, two memorials, a stained-glass window and a mural painting, were dedicated.

The Leyton Urban District Council are applying to the Local Government Board for sanction to a loan of £5,000 for the building and site of a new fire-station at Harrow Green.

Mr. T. W. Darby, until recently sub-agent for the Dorset County Council, has been appointed agent for the East Suffolk County Council and to the Felix Cobbold Trust Estate.

The new secondary school for boys, in The Crescent, Croydon, will be opened by the Mayor on Wednesday evening next. The architect is Mr. H. Carter Pegg, F.R.I.B.A., of Croydon.

A Local Government Board inquiry has been held at Middlesbrough into an application of the corporation for sanction to borrow £2,640 for the erection of a divisional police-station in Dacre-street, Market-place. Mr. S. E. Burgess, the borough engineer, prepared the plans.

At Tuesday's meeting of the Belfast Harbour Board, the tender of Messrs. K. L. Kalis, Wzoon, and Co., was accepted at £44,264, for carrying out important dredging operations in the harbour. The works include the extension of the deep-water fitting-out wharf to accommodate new ships of the Olympic class for the White Star line.

The Corporation of London have decided to consult Mr. J. P. Gilson, Keeper of Manuscripts and Egerton Librarian at the British Museum, and Sir H. C. Maxwell-Lyte, Deputy Keeper of the Records, upon the appointment of a Records Clerk to the Corporation in succession to Dr. Reginald Sharpe, who is retiring. There are about forty applicants for the position.

In the Town Hall, Manchester, on Tuesday, a Local Government Board inquiry was held by Mr. Thomas Adams into the application by the Manchester Corporation to prepare a town-planning scheme for North Manchester. No opposition was offered by the Property Owners' Association, and the application was supported by the Chadderton Urban District Council.

At Tuesday's meeting of Stafford Town Council the gas committee were authorised to make an application to the Local Government Board for power to borrow a sum not exceeding £50,000 for the purposes of the gasworks. Power was also given to the waterworks committee to make application for a loan of £10,000 for the waterworks, it having been decided to extend the mains to Doxey and Colwich.

Mr. Frederick James Barnes, of Weymouth, stone merchant, chairman of the Southern Seas Fisheries Committee, and a leading member of the Dorset County Council, a marine biologist of some distinction, and the principal private quarry-owner at Portland, from whose quarries most of the stone for the refacing of Buckingham Palace is being produced and worked, and who died intestate on July 14, left estate valued at £15,274 gross, with net personalty nil.

Mr. H. R. Hooper, an inspector from the Local Government Board, held an inquiry at the Council House, Walsall, on Tuesday, respecting an application by the town council for sanction to a loan of £4,840 for the provision of additional plant and buildings at the borough electricity generating-station, and for approval to the appropriation for the purposes of the electricity undertaking of additional land forming part of the Wolverhampton-street sanitary depot.

Trade News.

WAGES MOVEMENTS.

LONDON.—Mr. Benjamin Francis-Williams, K.C., who was arbitrator in the recent dispute between the London painters and the masters, issued his award last Tuesday. The principal features are:—Working hours in the summer to be 50 for 35 weeks, and 44 hours for 17 weeks of winter. Rate of wages to be 9½d. to 10d. per hour, this representing a penny advance in each case. Overtime until 8 p.m. to be paid at time and a quarter, from 8 p.m. to 10 p.m. time and a half; after 10 double time. From 12 noon on Saturdays until 4 o'clock time and a half; after 4 double time. Sundays and Christmas Day double time. Men in night gangs to be paid 2d. per hour over ordinary day rates, shifts not to exceed nine hours without overtime rate. From Saturday midnight to Sunday midnight double time. Provision for country expenses to be at the rate of 6s. 6d. per week. Time worked to be two hours in excess of London time. The London district to be 12 miles radius from Charing Cross. The rules came into operation on Monday, and may be terminated or altered after six months' notice on either side.

CLAY WORKERS IN EAST CORNWALL.—The strike of Cornish clay workers, which lasted ten weeks, has come to an end. For the last week or two the position of the men has been weakening, owing to defections, and on Sunday the strikers unanimously agreed to go back to work on the old terms. The employers have decided to reopen the clay pits on Tuesday next; but as many of the works are flooded it will be impossible to reinstate all the men at once. It is estimated that during the strike the men have lost between £60,000 and £70,000 in wages.

HINTS TO EMIGRANTS.—The Emigrants' Information Office, in its October circular of advice, states that in Canada there is no demand for mechanics, and a great many, especially in the building trades in the West, are out of work. In South Australia a large amount of money is being spent on railways and other public works. There is no demand in the building trades, and many men in all branches (except masons) are out of work. In Western Australia competent mechanics in the building trades can generally get work. At the Cape there is a demand for a few skilled carpenters and upholsterers. At Durban a few first-class carpenters, cabinet-makers, French-polishers, and painters have been wanted.

LIVERPOOL.—The arbitration inquiry into the dispute between the operative bricklayers and plasterers of Liverpool, which opened on Friday at the offices of the Master Builders' Association, was concluded on Saturday evening, before Alderman T. Smith, of Leicester, arbitrator appointed by the Board of Trade. The arbitrator reserved his decision. The operative bricklayers resumed work on Monday morning, on the understanding that no rough concrete blocks for partition work be fixed pending the decision of the arbitrator. The ten weeks' dispute has cost the Manchester Unity of Bricklayers and the Operative Bricklayers' Society about £5,000 in dispute pay. That the crisis in the building trade is still critical is shown by the fact that ballot-papers have been issued to Liverpool lodges of the Operative Stonemasons' Society and lodges in other parts of the kingdom as to whether the society shall or shall not withdraw from the National Board of Conciliation. Mr. Griff Jones, a Liverpool delegate of the society, who some time ago was appointed one of the principal organisers of the union, has issued a protest in favour of the Conciliation Board, and against the strike policy. The Conciliation Boards, he declares, are a success.

Mr. John Williams has resigned his positions as surveyor and sanitary inspector to the Llangollen Rural District Council.

Mr. G. E. Beaumont has resigned his positions as sanitary surveyor and engineer to the Wortley Rural District Council.

The urban district council of Felixstowe have adopted a scheme for the improvement of the Hamilton Cliffs by the provision of upper and lower terraces, a spa-room with terraced roof, and a sea-water bath-house, at a cost of about £4,000. Mr. E. C. Frere is the architect.

The building contract for the King Edward Memorial wing in connection with the Royal Victoria Hospital, Belfast, has been taken by Messrs. McLaughlin and Harvey, Ltd., Castleton Building Works, Belfast. The architects are Messrs. Young and Mackenzie, Scottish Provident Buildings, Donegall-square West, Belfast.

LATEST PRICES.

IRON.

Steel Joists, Belgian and German (ex steamer, London)	per ton	£6	2	6	to	£6	5	0
Steel Joists, English		7	10	0	,,	7	12	6
Wrought-Iron Girder Plates		7	0	0	,,	7	5	0
Steel Girder Plates		7	2	6	,,	8	2	6
Bar Iron, good Staffs		6	5	0	,,	8	10	0
Do., Lowmoor, Flat, Round, or Square		20	0	0	,,	0	0	0
Do., Welsh		5	15	0	,,	5	17	0
Boiler Plates, Iron—								
South Staffs		8	0	0	,,	8	15	0
Best Snedshill		9	0	0	,,	9	10	0

Angles 10s., Tees 20s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £8 15s to £9.
Ditto galvanised, £14 to £15 10s. per ton.

Galvanised Corrugated Sheet Iron—

	No. 18 to 20.	No. 22 to 24
6ft. to 8ft. long, inclusive gauge	Per ton. £13 0 0	Per ton. ... £13 10 0
Best ditto	13 0 0	... 14 0 0

Wire Nails (Points de Paris)—

3 to 7	8	9	10	11	12	13	14	15	B.W.G.
8/3	8 9	9/3	9/9	10/3	11/-	11/9	12/6	13/6	per cwt.

		Per ton.				Per ton.			
Cast-Iron Columns		£7	10	0	to	£9	0	0	
Cast-Iron Stanchions		7	10	0	,,	9	0	0	
Rolled-Iron Fencing Wire		8	5	0	,,	8	10	0	
Rolled-Steel Fencing Wire		7	5	0	,,	7	10	0	
,, ,,	Galvanised	8	15	0	,,	9	5	0	
Cast-Iron Sash Weights		5	0	0	,,	5	5	0	
Cut Floor Brads		9	15	0	,,		—		
Corrugated Iron, 24 gauge		16	0	0	,,		—		
Galvanised Wire Strand, 7 ply, 14 B.W.G.		14	5	0	,,		—		

B.B. Drawn Telegraph Wire, Galvanised—

0 to 8	9	10	11	12	B.W.G.
£10 10s.	£10 15s.	£11 0s.	£11 5s.	£11 15s.	per ton.

Cast-Iron Socket Pipes—

3in. diameter		£6	2	6	to	£6	7	0
4in. to 6in.		6	0	0	,,	6	5	0
7in. to 24in. (all sizes)		5	7	6	,,	6	0	0

[Coated with composition, 5s. 0d. per ton extra, turned and bored joints, 5s. 0d. per ton extra.]

Pig Iron—		Per ton.						
Cold Blast, Lilleshall		110s.	0d.	to	117s.	6d.		
Hot Blast, ditto		70s.	0d.	,,	75s.	0d.		
Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—								
Gas-Tubes		75	p.c.					
Water-Tubes		72½	,,					
Steam-Tubes		67½	,,					
Galvanised Gas-Tubes		65	,,					
Galvanised Water-Tubes		62½	,,					
Galvanised Steam-Tubes		57½	,,					

OTHER METALS.

Spelter, Silesian	Per ton	£21	0	0	to	£21	5	0
Lead Water Pipe, Town		24	10	0	,,		—	
,, ,, ,, Country		25	5	0	,,		—	
Lead Barrel Pipe, Town		25	10	0	,,		—	
,, ,, ,, Country		26	5	0	,,		—	
Lead Pipe, Tinned inside, Town		26	10	0	,,		—	
,, ,, ,, ,, Country		27	5	0	,,		—	
Lead Pipe, Tinned inside and outside Town		29	0	0	,,		—	
,, ,, ,, ,, Country		29	15	0	,,		—	
Composition Gas-Pipe, Town		27	10	0	,,		—	
,, ,, Country		28	5	0	,,		—	
Lead Soil-pipe (up to 4½in.) Town		27	10	0	,,		—	
,, ,, ,, Country		28	5	0	,,		—	
[Over 4½in. £1 per ton extra.]								
Lead Shot, in 28lb. bags		24	15	0	,,		—	
Copper Sheets, sheathing & rods		91	0	0	,,	91	10	0
Copper, British Cake and Ingot		79	0	0	,,	79	10	0
Tin, English Ingots		187	0	0	,,	187	10	0
Do., Bars		188	0	0	,,	188	10	0
Pig Lead, in 1cwt. pigs (Town)		21	10	0	,,		—	
Sheet Lead, Town		24	0	0	,,		—	
,, ,, Country		24	15	0	,,		—	
Genuine White Lead		30	15	0	,,		—	
Refined Red Lead		25	0	0	,,		—	
Sheet Zinc		29	0	0	,,		—	
Old Lead, against account		19	0	0	,,		—	
Tin	per cwt.	10	10	0	,,		—	
Cut nails (per cwt. basis, ordinary brand		0	11	6	,,		—	

TIMBER.

CONSTRUCTIONAL.

Yellow Pine Deals, Quebec, per standard:—	1st quality	£38	0	0	to	£45	0	0
,, ,, ,,	2nd ,,	26	0	0	,,	32	0	0
,, ,, ,,	3rd ,,	16	0	0	,,	18	10	0
Spruce Deals: St. Johns		10	0	0	,,	11	10	0
,, ,, Miramichi		9	10	0	,,	10	10	0
,, Boards: Swag		11	0	0	,,	12	0	0
Red Deals: Archangel	1st quality	21	0	0	,,	24	0	0
,, ,, ,,	2nd ,,	16	0	0	,,	19	0	0
,, ,, ,,	3rd ,,	12	0	0	,,	14	0	0
,, ,, St. Petersburg—								
,, ,, ,,	1st quality	16	10	0	,,	18	0	0
,, ,, ,,	2nd ,,	14	10	0	,,	15	10	0
,, ,, Wyburg & Uleaborg		12	10	0	,,	15	0	0
Gefle, Gothenburg, and Stockholm		12	10	0	,,	17	0	0
White Deals: Crown		14	0	0	,,	15	10	0
,, ,, Seconds		11	10	0	,,	13	0	0
Flooring: White and Planed—								
1st and 2nd quality mixed		10	15	0	,,	11	15	0
1st, 2nd, & 3rd quality mixed		10	5	0	,,	11	0	0
Red Planed, 1st quality		14	10	0	,,	17	0	0
Pitch Pine: Prime Deals and Boards		18	0	0	,,	33	0	0
Lignum Vitæ	Per ton	7	0	0	,,	14	0	0

		Per cubic foot.						
Yellow Pine Logs (waney board)		0	5	0	,,	0	5	6
Pitch Pine Logs		0	2	0	,,	0	2	6
Birch: Quebec Logs		0	2	3	,,	0	3	0
Oak: Austrian Wainscot		0	7	0	,,	0	8	0
Mahogany: Gaboon		0	2	0	,,	0	2	3

FURNITURE AND HARDWOODS.

Teak: Burmese, per load, 50ft.		£20	0	0	to	£25	0	0
Teak: Java, per load, 50ft.		16	0	0	,,	21	0	0
		Per cubic foot.						
Oak Planks: U.S.A., imported		0	1	9	to	0	2	6
,, Boards ,, ,,	Prm.	0	3	0	,,	0	3	6
,, ,, ,, ,,	Mdm.	0	2	6	,,	0	2	9
Sequoia (Californian Redwood)		0	2	4	,,	0	3	6
Birch: Quebec logs		0	2	3	,,	0	2	9
,, ,, sawn planks		0	1	3	,,	0	2	0
Oak: Austrian Wainscot		0	7	0	,,	0	8	0
Walnut: Prime boards and planks		0	6	0	,,	0	6	6
Walnut: Mdm. ,, ,,		0	3	6	,,	0	4	6
Greenheart: Hewn logs		0	3	3	,,	0	4	0
Cedar: Cigar box		0	4	9	,,	0	5	6
Satin Walnut: Imp. sawn boards, prime		0	2	4	,,	0	2	9
Orham: Imp. sawn boards, prime		0	2	0	,,	0	2	3
Mahogany: St. Domingo, Cuba, and Honduras		0	6	0	,,	0	9	0
,, African, Assinee, &c.		0	5	0	,,	0	6	6
,, Lagos and Benin		0	4	6	,,	0	6	0
,, Sekondi and Cape Lopez		0	3	0	,,	0	4	0
,, Gaboon		0	2	0	,,	0	2	3
Satinwood: West Indian		0	10	0	,,	0	14	0
Rosewood	Per ton	8	0	0	,,	12	0	0
Lignum Vitæ	,,	7	0	0	,,	14	0	0

STONE.*

Red Mansfield, in blocks	per foot cube	£0	2	4
Darley Dale, ditto	,,	0	2	3
Red Corsehill, ditto	,,	0	2	9
Closeburn Red Freestone, ditto	,,	0	2	0
Ancaster, ditto	,,	0	1	10
Greenshill, ditto	,,	0	1	1
Chilmark, ditto (in truck at Nine Elms)	,,	0	1	10½
Hard York, ditto	,,	0	2	0
Ditto ditto 6in. sawn both sides, landings, random sizes	per foot sup.	0	2	8
Ditto ditto 3in. slab sawn two sides, random sizes	,,		1	3

* All F.O.R. London.

Bath Stone, delivered on road waggons, Paddington Depot	per foot cube	0	1	7½
Ditto, ditto, Nine Elms Depot	,,	0	1	9½
Beer Stone, delivered on rail at Seaton Station	,,	0	1	0
Ditto, delivered at Nine Elms Station	,,	0	1	6

Portland Stone, in random blocks of 20ft. average:—

	Brown Whit Bed.	White Base Bed
	Per foot cube.	
Delivered on road waggons at Paddington Depot, Nine Elms Depot, or Pimlico Wharf	... £0 2 3	... £0 2 4½

SLATES.

	in.	in.	£	s.	d.	per 1,000 of 1,200 at r.stn
Blue Portmadoc	20	× 10	12	12	6	
,, ,,	16	× 8	6	12	6	,, ,,
Blue Bangor	20	× 10	13	2	6	,, ,,
,, ,,	20	× 12	13	17	6	,, ,,
First quality	20	× 10	13	0	0	,, ,,
,, ,,	20	× 12	13	15	0	,, ,,
,, ,,	16	× 8	7	5	0	,, ,,
Eureka unfading green	20	× 10	15	17	6	,, ,,
,, ,,	20	× 12	18	7	6	,, ,,
,, ,,	18	× 10	13	5	0	,, ,,
,, ,,	16	× 8	10	5	0	,, ,,
Permanent green	20	× 10	11	12	6	,, ,,
,, ,,	18	× 10	9	12	6	,, ,,
,, ,,	16	× 8	6	12	6	,, ,,

BRICKS.

(All prices net.)

First Hard Stocks	£1	15	0	per 1,000 alongside, in
Second Hard Stocks	1	11	0	,, ,, river.
Mild Stocks	1	9	0	,, ,, ,,
Picked Stocks for Facings	2	5	0	,, livered at rly. stn.
Flettons	1	10	0	,, ,, ,,
Pressed Wire Cuts	1	18	0	,, ,, ,,
Red Wire Cuts	1	14	0	,, ,, ,,
Best Fareham Red	3	12	0	,, ,,
Best Red Pressed Ruabon Facing	5	0	0	,, ,, ,,
Best Blue Pressed Staffordshire	3	15	0	,, ,, ,,
Ditto Bullnose	4	0	0	,, ,, ,,
Best Stourbridge Firebricks	3	14	0	,, ,, ,,
2½in. Best Red Accrington Plastic Facing Bricks	4	10	6	,, Net, delivered in full truck loads in London.

Accrington Best Red Plastic Facing per 1,000 Bricks ... £2 10 0

3½" ditto Second Best Plastic ditto	2	2	6
Ditto Ordinary Second Bricks	1	11	3
Ditto Plastic Engineering Bricks	1	17	6
Sewer Arch Brick not more than 3½" in thickest part	2	0	0
3½" Chimney Bricks fit for outside work	2	6	0
3½" ditto ditto through and through	2	0	0
3½" Beaded, Ovolo and Bevel Jambs; Octagons; 2½" and ½" radius Bullnoses; Stock patterns	3	7	6
Accrington Air Bricks, 9" × 2 course deep, each	0	0	6
Ditto ditto 9" × 1 course	0	0	3

Accrington Camber Arches:—

3 course deep, 4½" soffit, per foot opening						0	1	3
4	ditto	4½"	ditto	ditto	ditto	0	1	8
5	ditto	4½"	ditto	ditto	ditto	0	2	1
6	ditto	4½"	ditto	ditto	ditto	0	2	6
3	ditto	9"	ditto	ditto	ditto	0	2	1
4	ditto	9"	ditto	ditto	ditto	0	2	11
5	ditto	9"	ditto	ditto	ditto	0	3	9
6	ditto	9"	ditto	ditto	ditto	0	4	6

Net free on rail or free on boat at works.

GLAZED BRICKS.

HARD GLAZES, (PER 1,000.)

Salt Glazed. Best.	Buff, Cream, Seconds.	Other & Bronze.	Best. Colours.	Second Colours.
Stretchers—				
£12 7 6	£10 17 6	£13 17 6	£17 17 6	£12 7 6
Headers—				
11 17 6	10 7 6	13 7 6	17 7 6	11 17 6
Quoins, Bullnose, and 4½in. Flats—				
15 17 6	14 17 6	17 17 6	21 7 6	15 17 6
Double Stretchers—				
17 17 6	16 7 6	20 17 6	24 7 6	17 17 6
Double Headers—				
14 17 6	13 7 6	17 17 6	21 7 6	14 17 6
One side and two ends, square—				
18 17 6	17 7 6	21 17 6	26 7 6	18 17 6
Two sides and one end, square—				
19 17 6	18 7 6	22 17 6	26 17 6	19 17 6
Splays and Squints—				
17 7 6	15 17 6	21 17 6	24 17 6	17 7 6

Plinth and Hollow Bricks. Stretchers and Headers—
5d. each 4d. each 6d. each 6d. each 5d. each
Double Bullnose, Round Ends, Bullnose Stops—
5d. each 4d. each 6d. each 6d. each 5d. each
Rounded Internal Angles—
4d. each 3d. each 5d. each 5d. each 4d. each

MOULDED BRICKS.

Stretchers and Headers—
8d. each 8d. each 8d. each 8d. each 8d. each
Internal and External Angles—
1/2 each 1/2 each 1/2 each 1/2 each 1/2 each
Cill Bullnose, Stretchers and Headers—
5d. each 4d. each 6d. each 6d. each 5d. each

Majolica or Soft Glazed Stretchers and Headers	Per 1,000 £22 17 6
,, ,, Quoins and Bullnose	27 17 6
Compass bricks, circular and arch bricks of single radius £6 per 1,000 over above list for their respective kinds and colours	Not exceeding 9in. by 4½in by 2½in.
Camber arch bricks, any kind or colour, 1s. 2d. each	

Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.

* These prices are carriage paid in full truck loads to London Stations.

	s.	d.	
Thames Sand	7	6	per yard, delivered
Pit Sand	7	0	,, ,,
Thames Ballast	6	0	,, ,,

	s.	d.			Per ton,
Best Portland Cement	36	0	to	41	0 delivered
Ground Blue Lias Lime	21	0	per ton delivered.		

Exclusive of charge for sacks.

	s.	d.		s.	d.	Per yard,
Grey Stone Lime	13	6	to	14	0	delivered
Stourbridge Fireclay in sacks	27s.	0d.	per ton at railway station.			

TILES.

	s.	d.	Dlvrd. at
Plain red roofing tiles	42	0	per 1000 ry. stn.
Hip and Valley tiles	3	7	per doz. ,, ,,
Broseley tiles	50	0	per 1000 ,, ,,
Ornamental tiles	52	6	,, ,, ,,
Hip and Valley tiles	4	0	per doz. ,, ,,
Ruabon red, brown, or brindled	57	6	per 1000 ,, ,,
do. (Edwards)	60	0	,, ,, ,,
Ornamental do.	4	0	per doz. ,, ,,
Hip tiles	3	0	,, ,, ,,
Valley tiles			
Selected "Perfecta" roofing tiles:—Plain tiles (Peake's)	46	0	per 1000 ,, ,,
Ornamental do.	48	6	,, ,, ,,
Hip tiles	3	10½	per doz. ,, ,,
Valley tiles	3	4½	,, ,, ,,
"Rosemary" brand plain tiles	48	0	per 1000 ,, ,,
Ornamental tiles	50	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	8	,, ,, ,,
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 ,, ,,
Hand-made sand-faced	45	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	6	,, ,, ,,
Hartshill" brand plain tiles, sand-faced	50	0	per 1000 ,, ,,
Pressed	47	6	,, ,, ,,
Ornamental do.	50	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
alley tiles	3	6	,, ,,

OILS.

Rapeseed, English pale,	per tun	£28	15	0	to	£29	5	0
Do., brown	,, ...	26	15	0	,,	27	5	0
Cottonseed, refined	,, ...	29	0	0	,,	30	0	0
Olive, Spanish	,, ...	39	10	0	,,	40	0	0
Seal, pale	,, ...	21	0	0	,,	21	10	0
Cocoanut, Cochin	,, ...	46	0	0	,,	46	10	0
Do., Ceylon	,, ...	42	10	0	,,	43	0	0
Do., Mauritius	,, ...	42	10	0	,,	43	0	0
Palm, Lagos	,, ...	32	5	0	,,	33	5	0
Do. Nut Kernel	,, ...	35	0	0	,,	35	10	0
Oleine	,, ...	17	5	0	,,	19	5	0
Sperm	,, ...	30	0	0	,,	31	0	0
Lubricating U.S.	per gal,	0	7	0	,,	0	8	0
Petroleum refined	,, ...	0	0	6¾	,,	0	0	6¾
Tar, Stockholm	per barrel	1	6	0	,,	1	10	0
Do., Archangel	,, ...	0	19	6	,,	1	0	0
Linseed Oil	per gal.	0	2	3½	,,		—	
Baltic Oil	,, ...	0	2	6	,,		—	
Turpentine	,, ...	0	2	7½	,,		—	
Putty (Genuine Linseed Oil)	per cwt.	0	9	0	,,		—	
Pure Linseed Oil "Stority" Brand	,,	0	10	0	,,		—	

GLASS (IN CRATES).

English Sheet Glass:	15oz.	21oz.	26oz. 32oz.
Fourths	2d. ...	3d. ...	3½d. ... 4½d.
Thirds	2½d. ...	3½d. ...	4½d. ... 5½d.
Fluted Sheet	2½d. ...	3½d. ...	6½d. ... 7d.
Hartley's English Rolled Plate:	¼in.	3/16in.	⅜in.
	2½d. ...	2½d. ...	3d.
Figured Rolled and Repoussine	White.	Tinted.	
	3½d. ...	5d.	

VARNISHES, &c.	Per gallon.
Fine Pale Oak Varnish	£0 8 0
Pale Copal Oak	0 10 0
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of churches	0 14 0
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flatting Varnish	0 18 9
White Copal Enamel	1 4 0
Extra Pale Paper	0 12 9
Best Japan Gold Size	0 10 9
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 0

TRADE NOTES.

Under the direction of Mr P N Brown, architect, Holmfirth, Boyle's latest patent "air-pump" ventilator has been applied to the Free Methodist Church, Wooldale.

On the flat roof for the new infirmary, Bristol, the powder Pudlo, which makes cement waterproof, has been specified. This powder included in the final rendering obviates the necessity of any other material being used on the top of concrete to make a roof watertight.

The Sturtevant Engineering Co., Ltd., of 147, Queen Victoria-street, have acquired the business of Messrs. Galsworthy, Otovacum, Ltd. The new design of vertical turbine cleaner, as made by Messrs. Sturtevant, is a considerable advance on the old type, many improvements being embodied, securing larger volumetric capacity per H.P., and consequently more rapid cleaning.

PILKINGTON & CO.

(Established 1838.)

DEPTFORD WHARF,
190 & 192, CREEK ROAD, DEPTFORD, S.E.

Registered Trade Mark,

POLONCEAU ASPHALTE

Patent Asphalte and Felt Roofing

ACID-RESISTING ASPHALTE.
WHITE SILICA PAVING.

Seyssel Asphalte direct from the Mines.

Telephone Nos.: New Cross 1102 (2 Lines).

FOR
Olivers'
Seasoned
Hardwoods,

APPLY TO—
WM. OLIVER & SONS, Ltd.,
120, Bunhill Row, London, E.C.

TENDERS.

. Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

Barnstaple.—For work at the laundry, for the laundry:—

Coles and Woodman	£372 2 0
Karslake	359 0 0
Sillifant	359 0 0
Harris	352 10 0
Hill	341 0 0
Carter and Co.	337 10 0
Garland (accepted)	269 0 0

(Architect's estimate, £263 7s. 6d.)

Battle.—For installation of the electric light at the workhouse, for the guardians —

Safety Light Co. Ltd.	£511 0 0
Messrs. Russell	445 0 0
Page and Miles	438 0 0
Squirrel and Co.	374 0 0
Bruce and Co	365 0 0
Newbald and Co.	329 0 0
French, J. L.	315 0 0

Referred to a committee, with power to accept.

Belfast.—For extending the deep-water fitting-out wharf and other dredging operations, for the harbour board:—

Kalis, K. L., Wzoon & Co.	£44,264 0 0

(Accepted.)

Bideford.—For the supply of 1,600 tons of broken granite for road material, for the urban district council —

Baker and Sons (accepted) 8s. 4d. per ton.

Bristol.—For steel and general constructional work and additions to and modifications of the general sanitary arrangements at the headquarters of the Bristol, West of England, and South Wales Operatives Society. Mr. T. J. Moss-Flower, A.M.Inst.C.E., Carlton Chambers, Bristol, and 28, Victoria-street, Westminster, S.W. —

Gluyas, T. C., Bristol.*

* Tender accepted on basis of so much per cent. profit on net cost.

Bromley.—For the erection of a new police station at Bromley. Mr. J. Dixon Butler, F.R.I.B.A., surveyor to the Metropolitan Police district, New Scotland Yard, S.W. architect. Quantities by Messrs Thurgood Son, and Chidgey, 8, Adelphi-terrace, Strand, W.C. —

Knight	£12,999 0 0
Wiltshire and Son	12,900 0 0
Mitchell and Son	12,850 0 0
Arnaud and Son	12,832 0 0
Crossley and Son	12,750 0 0
Lawrence and Son	12,425 0 0
Graham and Sons	12,390 0 0
Kent, H.	12,163 0 0
Duthoit, F. P.	12,063 0 0
Fairhead and Son	11,962 0 0
Thomas and Edge	11,888 0 0
Adamson and Sons	11,875 0 0
Prestige and Co.	11,822 0 0
Grover and Son	11,674 0 0
Smith and Sons	11,625 0 0

Dunstable.—For the construction of a storm-water conduit, comprising about 1,100 yards of 15in., 12in., and 9in. stoneware pipe conduit, for the corporation:—

Catley, A. T., Lloyd's-square	£1,039 0 0
Wright, W., Chesham	894 5 0
Trentham, G. P., Birmingham	884 0 0
Halsey, W. and Sons, Edgware	874 7 10
Powdrill, G., and Sons, Luton	857 17 3
Jukes and Co, Tipton	776 19 11
Wood, G. S., Princes-street, Dunstable (accepted)	769 15 0

(Surveyor's estimate, £758 16s. 8d.)

Earsdon.—For providing and laying about 725 lineal yards of 18in. earthenware pipe sewer at Earsdon, for the Earsdon Urban District Council. Mr. J. R. McMillen, Council Offices, Shiremoor, surveyor —

Young, M. D., Whitley Bay	£828 14 0
Edgar, E., Gosforth	766 14 0
Wood, J. & R., Brandon, Durham	711 10 0
Usher, J., and Co., Newcastle	568 10 3
Armstrong, G., Whitley Bay	530 15 0
Henderson, J., Gosforth	524 14 11
Thompson, J., Gosforth	496 18 9
Robson, W., Heaton (accepted)	482 19 0

Englefield Green.—For heating by hot water the infant school, for the managers of the Englefield Green schools —

Wellman Bros., Windsor	£ 95 0 0
Wembley Heating Co., Wembley	173 10 0
Herring and Son, Chertsey	162 0 0
Evans, S. W., Bagshot	133 18 0
Watkin, W., and Son, Wood Green	111 8 0

Kennington-road, S.E. — For alterations in connection with additional kitchen accommodation at their infirmary, Brook-street, for the Lambeth Board of Guardians:—

Lavington, Ltd., 1, Berners-st., W. (10 weeks)	£208 4 6
Nunn, L. E., Crompton-street, W. (5 weeks)	208 0 0
Castle Bros., Borough, S.E. (10 weeks)	191 0 0
Wall, E., Alice Works, Summers-town, S.W. (7 weeks)*	185 0 0

* Accepted. Surveyor's estimate, £127.

Leighton Buzzard.—For additions to St. Barnabas' Church, Linslade, Leighton Buzzard, Bucks. Mr. Geo. H. Fellowes Prynne, F.R.I.B.A., architect. Quantities by R. Henry Hale, F.S.I., 6, Queen Anne's Gate, S.W. —

Goddard and Sons, Dorking	£1,596 0 0
Dawson, H. P., Leighton Buzzard	1,492 15 3
Dickens, W. J., Ealing	1,418 0 0
Honour, J., and Sons, Tring	1,394 0 0
Bowman, A. W., Bournemouth	1,373 10 0
Webster and Cannon, Aylesbury	1,318 0 0
Yirrell, T., Linslade	1,298 0 0
Schooley and Sons, Finsbury	1,154 0 0
Frankline, Ltd., Deddington*	1,137 10 0

* Accepted.

Little Heath, Herts.—For the construction of certain roads at Little Heath and North Mymms, for the St. Albans Rural District Council:—

Catley, A. T., Lloyd-square	£2,597 0 0
Denman, R. W., North Finchley	2,411 17 6
Farrow, H., Brixton	2,337 15 11
Inns and Co., Stevenage	2,313 16 3
Trentham, G. P., Ltd., B'ham	2,268 6 3
Thompson, A., North Finchley	2,247 4 7
Adams, T., Wood Green	2,216 11 6
Judge, W., and Son, Watford	2,160 6 2
Bell, G., & Sons, Ltd., Tottenham	2,154 13 8
Worboys, S., Potter's Bar	2,149 19 7
Johnson, S., Son, & Marsh, Strand	2,135 11 7
Williams, H., St. Albans	2,052 14 4
Batts, E. J., Enfield (accepted)	1,909 0 7

Liversedge.—For repairs to the Hightown Council school playground, for the Education Committee:—

Kershaw, Keighley (accepted)	£166 0 0

Llwynypia. — For repairs and renovation of the library and institute, Llwynypia, for the Llwynypia Workmen's Library and Institute Committee. Mr. R. S. Griffiths, M.S.A., Tonypandy, architect:—

Lewis, E. B., Pontypridd	£249 10 0
Allen and Fletcher, Penarth	237 17 9
Cole, W., Trealaw	210 0 0
Harrison, F. A., Llwynypia	206 0 0
Cohen, Pentre	188 5 0
Thomas, C. and G., 23, Eleanor-street, Tonypandy (accepted)	185 10 0
Absalom and Lovell, Cardiff	170 0 0

Middlesbrough.—For the foundations of the new road from Seaton Carew to Port Clarence, and the construction of bridges in connection therewith, for the Tees Conservancy Commissioners. Accepted tenders:—

Road-Making —

Moffitt, J., and Co., Manchester	£38 276 5 9

Bridges —

Head, Wrightson and Co., Thornaby on Tees	£16,780 0 0

Paisley.—For the restoration of the choir and tower, at the Abbey Church. Accepted tenders:—

Masonry —

Taylor, W. and J., Glasgow	£37,692 12 5

Plumbing —

Forsyth, A., and Son, Paisley	1,634 9 10

Wright work:—

Wylie and Lochhead, Ltd., Glasgow	758 7 10

Glazier work —

Meikle, William, and Son, Glasgow	349 6 1

Penshaw. — For rebuilding the railway station, recently destroyed by fire, for the North Eastern Railway Co. Mr. William Bell, of York, architect —

Fenwick, Stephen & Co., Northumberland-road, Newcastle-on-Tyne (accepted.)

Petworth.—For erection of 12 workmen's cottages in the Station-road, Petworth, for the Petworth Rural District Council:—

Boxall, J., Petworth	£2,520 0 0
Murrell Bros., Horsham	2,510 0 0
Baker, H., and Son, Crawley	2,484 0 0
Sandall and Son, Worthing	2,450 0 0
Peskett, H., and Co., Crawley	2,390 0 0
Lindfield and Son, Horsham	2,299 0 0
Cooper, H., Petworth	2,290 8 0
Adams, P., Liphook	2,286 8 0
Joyes, W., Billinghurst (accepted)	1,990 10 0
Hobbs Bros., Havant	1,984 0 0

Pontypridd.—For erection of a mortuary and post-mortem room at Mill Field. Mr. W. E. Lowe, Municipal Buildings, Pontypridd:—

Evans, E. R., and Bros.	£738 13 11
Jones, E.	734 15 0
Julian, A.	722 7 8
Williams and James	700 0 0
Evans, W. H., Cardiff (accepted)	655 0 0

Pwllheli.—For rebuilding Salem Chapel, Pwllheli, recently destroyed by fire:—

Jones, Evan, Carnarvon (accepted), £3,200.

Sedgefield.—For extensions at Isolation Hospital. Mr. J. Stones, Union Offices, Sedgefield, surveyor:—

Earnshaw, A. H., Leadenhall, Darlington (accepted)	£515 10 0

Snodland.—For the construction of tanks and a roadway at Snodland drainage works for the Malling Rural District Council:—

Davison, J. A.	£351 0 0
Brattle and Sons	345 10 0
Langridge, R.	337 0 0
Wilford and Sons	330 0 0
Pearce, G., and Sons, Maidstone*	328 0 0

* Accepted.

Southampton. — For the supply, delivery, and erection at the electricity works, on foundations provided by the corporation, of one boiler, superheater, and mechanical stoker, in accordance with specification and conditions prepared by the borough electrical engineer —

Babcock & Wilcox, Ltd. (accepted) £1,681 0 0

St. Andrew's, N.B.—For reconstructing the harbour gates. Messrs. Stevenson and Co., Edinburgh, engineers:—

Adams and Co., Glasgow (accepted).

Stoke-on-Trent.—For electric working and fittings at the Central Schools of Science and Technology, Victoria-road, for the Stoke-on-Trent Education Committee:—

Barnett & Sons, Stoke (accepted)	£794 0 0

Welwyn.—For laying 400 yards of 6in. sewer in School-lane, Welwyn, for the Welwyn Rural District Council. Mr. T. E. Moore, surveyor:—

French, W., Hitchin	£205 0 0
Ray, J., Letchworth	171 9 5
Jackson, W., Forest Gate	170 19 3
Thompson, A., North Finchley, N.	166 13 7
Catley, A. T., Lloyds-square, W.C.	168 0 0
Potter, G., Hackey, N.E.	164 0 0
Darby, W., Knebworth	160 0 0
Newton, F., Hitchin	149 0 0
Trentham, G. P., Ltd., Victoria-square, Birmingham (accepted)	139 10 0

Surveyor's estimate, £162.

West Bridgford. — For erection of a motor 'bus garage, for the Urban District Council:—

Pillatt, G. A.	£1,880 0 0
Pickard Bros.	1,806 0 0
Goodchild, A.	1,749 0 0
Barry, R. A.	1,675 6 0
Dennett and Ingle	1,660 0 0
Rolley, J., and Son	1,650 0 0
Taylor and Brittle	1,650 0 0
Bosworth and Lowe	1,620 0 0
Bow, T.	1,590 0 0
Gilbert and Hall	1,589 0 0
Wainer, G. W.	1,585 0 0
Betts, J. A. (accepted)	1,575 10 0

All of Nottingham.

West Bridgford.—For paving footpaths and forming the carriageway of Central-avenue, West Bridgford, for the urban district council:—

Bower Bros., West Bridgford	£131 0 0
Raynor, A. and C., West Bridgford	124 16 6
Somerfield, E., West Bridgford*	113 19 8

* Accepted.

LIST OF COMPETITIONS OPEN.

Oct. 31	Houses and Planning, York	£100, £50, £25	F. W. Spurr, City Engineer, Guildhall, York.
Nov. 1	Royal Palace, Sofia, Bulgaria		Section d'Architecture au Ministere des Travaux Publics, Sofia.
,, 1	Law Courts, Sofia, Bulgaria		Section d'Architecture au Ministere des Travaux Publics, Sofia.
,, 18	Destructor, Schaerbeek-lez-Bruxelles		Service de l'Ingenieur, 30, Rue de la Ruche, Brussels.
,, 29	Band Pavilion, West Cliff, Folkestone (limit of cost £20,000). (Edwin T. Hall, F.R.I.B.A., 34, Bedford-square, W.C., Assessor)		A. F. Kidson, Town Clerk, Folkestone.
Dec. 29	New Offices for Board of Trade, &c., Whitehall Gardens, S.W. [R. Blomfield, M.A. (Oxon), A.R.A., P.R.I.B.A. J. Belcher, R.A., and Sir Aston Webb, C.V.O., C.B., R.A., Assessors] Sketch Designs, ten will be Selected, with £300 Honorarium each		The Secretary, H.M. Office of Works, Storey's Gate, S.W.
1914. Jan. 2	Manchester Royal Exchange, Additional New Buildings and Alterations. Open to all architects in U.K. Not more than 12 architects of repute have been specially invited; each of whom will receive one hundred guineas. The three selected architects will receive one hundred guineas each. Author of design placed first will be appointed. (J. S. Gibson, F.R.I.B.A., Assessor)		Rich. J. Allen, Master, Royal Exchange, Manchester.
,, 2	Departmental and Courts Buildings, Ottawa (T. E. Collcutt, J. H. G. Russell, and J. O. Marchand, Assessors). Double Competition, five unsuccessful competitors in second to receive 3,000dols. each		R. C. Desrochers, Department of Public Works, Ottawa, Ont.
Feb. 9'15	Savings Bank, Verona (Five Assessors	£1,200, £600	The Savings Bank, 1, Via Garibaldi, Verona.

LIST OF TENDERS OPEN.

BUILDINGS.

Oct. 10	First Portion of St. Luke's Church, Darlington		Clark and Moscrop, FF.R.I.B.A., Feethams, Darlington.
,, 11	House, Garage, and Offices, Carbis Bay, Cornwall		Grylls, Hill, and Hill, Cross-street, Helston.
,, 11	Secondary School, Falmouth	Cornwall Education Committee	S. Hill, Archt., Green-lane, Redruth.
,, 11	Shelter in Park, Selby	Urban District Council	B. Gray, A.M.I.C.E., Council Offices, Selby.
,, 11	C.M. Schoolroom, Additions to, Gatehouse		Rev. D. Lloyd Jones, Gatehouse, near Bangor.
,, 11	School, Duke-street, Chorley	Corporation	Shaw and Vowles, Archts., 35, St. James's-street, Burnley.
,, 13	Public Baths, Govanhill, Glasgow	Corporation	J. Lindsay, Town Clerk, City Chambers, Glasgow.
,, 13	Electricity Supply Station, Store-shed at, Edinburgh	Corporation	J. A Williamson, A.R.I.B.A., Public Works Office, Edinburgh.
,, 13	Restoring the Eglise Saint-Jean-Baptiste, Tongres	Gouvernement Provincial	M. Gouverneur de Limbourg, Hasselt, Belgium.
,, 13	Workhouse Laundry Block and Mortuary, Faringdon	Guardians	H. Glynn Warne, London-street, Faringdon, Berks.
,, 13	Test House, Foundations, Aircraft Factory, S.Farnborough	Secretary of State for War	The Director of Army Contracts, War Oce, S.W.
,, 13	Infectious Diseases Hospital, Thorpe, Easington	Rural District Council	H. T. D. Hedley, Archt., 40, Frederick-street, Sunderland.
,, 13	Workhouse, Chopping Shed at, Newcastle-on-Tyne	Guardians	G. Walker, Clerk, 127, Pilgrim-street, Newcastle-on-Tyne.
,, 13	House and Buildings, Additions to, North Kyme Fen	Kesteven County Council	Jesse Clare, County Archt., Sleaford.
,, 14	District Engineer's Offices, Darlington	North-Eastern Railway Co.	W. Bell, Archt., York.
,, 14	School, Lowbourne, Melksham	Wilts County Council	J. G. Powell, County Sur., Trowbridge.
,, 14	School, Extensions to, Dean Bank	Durham County Council	W. Rushworth, Archt., Shire Hall, Durham.
,, 14	Headquarters, Plympton	Devon Territorial Force Association	F. A. Clark, Archt., 83, Old Town-street, Plymouth.
,, 14	Offices, &c., at Sewage Disposal Works, Crewe	Town Council	G. Eaton-Shore, Boro' Sur., Earle-street, Crewe.
,, 14	Fire Station, Navigation Grounds, Mountain Ash	Urban District Council	W. G. Thomas, Sur., Town Hall, Mountain Ash.
,, 15	Boys' School, Estaimpuis	Hainaut Provincial Government	M. Clerbaux, Archt., Boulevard des Narviens, Tournai.
,, 15	Bandstand, Clacton-on-Sea	Urban District Council	Daniel Bowe, Sur., Town Hall Buildings, Clacton-on-Sea.
,, 15	Pair of Houses, Horseforth		D. Rhodes, Newlay-lane, Horseforth.

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October 17, 1913. Volume CV.—No. 3067.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House, Strand, W.C.

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National Silver Medal Design for a Painted Frieze "Lustrecrine Labour." by Mr. George Noble.

St. John's Church, Woking. View and plan. Messrs. Tubbs, Messer, and Poulter, Architects.

"Oaklands." Caerleon, Monmouthshire. View and plan. Mr. Oswald P. Milne, F.R.I.B.A., Architect.

County Council Schools, Ashington Hirst, Northumberland. Views and plans. Mr. G. Topham Forrest, Licentiate R.I.B.A., Architect.

Business Premises, Oxford-street, W. Messrs. Metcalf and Greig, Architects.

Mothers' Hospital, Lower Clapton-road: Plan of Maternity Ward Blocks. Mr. Alex. Gordon, F.S.I., Architect.

Brick Construction.

BRICK CONSTRUCTION.

Any architect who has had an extensive provincial practice must, on looking over his sketchbooks, be struck with the fact that certain modes of construction are peculiar to some localities, and these modes are themselves practically dependent on the materials used. This influence of material on form was probably not strong enough at any time to evolve what is known as an architectural style; but that material influences style to a great extent cannot be gainsaid. In counties like

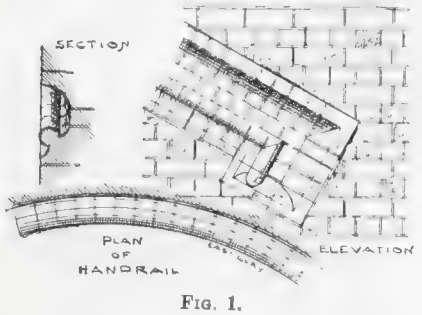


FIG. 1.

Yorks and Gloucester, for example, a totally different class of domestic work was developed from that found in the timber counties of Hereford and Gloucester. Clays suitable for brick- and tile-making have given us the half-timber, weather-tiled cottages of Kent and Surrey, as well as the important brick buildings of Essex, where brick tracery is even found in many church windows. But to go no farther from London than the Langdon Hills, a Late 15th-Century church, now abandoned, may be seen with brick tracery in the three-light east window. Nearer to London, and close to Barking—at Eastbury—will be found the handrail sketched in Fig. 1, and a most ingenious piece of brickwork it is, meriting the closest examination. The towers standing in the courtyard of this building were carried up beyond the roofs, illustrated in the BUILDING NEWS, November 23, 1906. They contained circular staircases, and this handrail was worked round the walls in the solid. It will be noticed that none of the constituent parts of the work are bigger than an ordinary brick, and the roll which takes the hand is flush with the wall-face, being set in a deep hollow. The whole building is most interesting, illustrating as it does methods of construction peculiar to the brickwork of Elizabethan times; for here the window-sills, jambs, transomes, mullions, and heads are of bricks the usual size, whilst in many other mansions of about the same date, oak frames with sills, mullions, and transomes are common. Where clay and oak were found, both were combined in building; but where oak was scarcer, brick was then extensively used for windows, with lead lights and wrought-iron casements, the wood frames being dispensed with. It is hard to say when combinations of rolled steel and concrete will fall in line with Eastbury and similar buildings which we admire so much—perhaps never; but we may hope that the day will come when architects will think in steel and concrete instead of in small stones and in bricks, and devise some way of dealing with our new materials rather than in burying them out of sight.

Professor Owen, or any skilled naturalist, could from a fossil bone construct the whole animal from which that bone was taken. So can the architect, from a stringcourse or an architrave, reconstruct the building to which these belonged; and the same holds good of any detail from such a building as Eastbury: a moulded jamb-brick gives a key to the whole structure. To one accustomed to brick buildings, in towns where Flemish bond and English bond are used nowadays without discrimination, it is a pleasant change to mark how persistent English bond is in all old buildings; indeed, it may be called a telltale bond, for we have noticed buttresses to old buildings, of Flemish bond, and these were by this means found to be comparatively modern additions. Brick bond is, therefore, of great value in fixing a date before or after which certain work must have been executed. As a matter of constructive detail, it is of importance to notice that at Eastbury the window transomes and heads are built with moulded bricks on edge, and these are supported by iron bars let into the under side of the bricks, which are not noticed unless they are specially sought for. The brickwork here is well worth study, for there is no imitation of stone-construction anywhere: it is all carried up with such bricks as might be moulded and burnt in the locality. Crow-stepped gables are not so common south of the Tweed as they are on the other side of it. Scotch Baronial castles are usually finished in that way, the material being wrought stone; but sometimes crow-steps are built with brick, and we illustrate some as found at Hatfield, near Leominster, in Herefordshire, in Fig. 2. Here it will be seen that the steps and their weatherings are all cut from ordinary bricks—a mode of construction that would be considered anything but permanent; yet the gables were in good condition, though the constituent pieces were bedded in ordinary mortar. Here the bricks are 9½in. by 4½in. by 2¼in.; in the old church on the Langdon Hills, five courses rise exactly 12in.; but five courses at Hatfield rise nearly 15in.

It may, however, be taken for granted that the old bricks were thinner than modern bricks, the former being seldom more than 2½in. thick, whilst the latter are usually 3in., unless specially made thinner. In

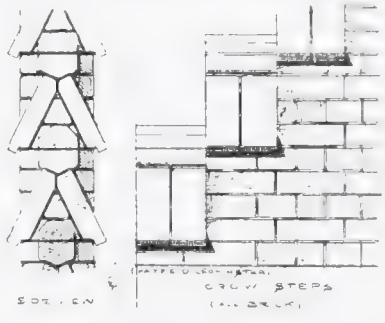


FIG. 2.

passing, it may be said that the thickness of a brick has nothing to do with the stability of the work; but thin bricks are supposed to look better than thick ones. If, however, the width of a brick is not exactly one-half its length, less the thickness of a mortar joint, then good work cannot be done with it. How the material selected may influence the style of building in any locality can be judged from the appearance of those streets and squares lying north of Oxford-street and as far west as Edgware-road, where the well-known London "stock" has been used for facing. The London stock is no longer made in London, all the brickfields having been covered with houses. It differed from other bricks in that the fuel necessary for burning it was contained in the brick itself. Islington was a celebrated place at one time for the manufacture of London stocks. It took 170 yards of the mild earth found here to make 100,000 bricks, the value of the earth being about 2s. 6d. per thousand. A moulder made 40,000 bricks in a week, for which he was paid £8. It took eight chaldrons of breeze mixed with 100,000 bricks to burn them. Coal and wood to start the fire cost about 10s. extra, making the total cost of the bricks 25s. per thousand. A chaldron is an old-fashioned measure of capacity containing about 36 bushels. If the London stock does not make a very bright-looking

front, it makes a practically indestructible one, for we never heard of a decayed brick being found in one of them. We have often wondered how true in size these bricks are, considering the varying nature of the clays from which they were made; but an old brickmaker at Canonbury let us into the secret. He said there were different-sized moulds made to suit the clays, which were classed as "mild clay,"

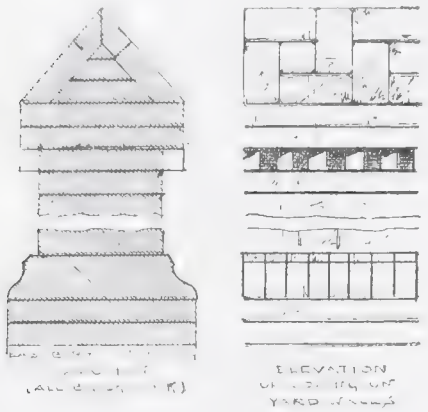


Fig. 3.

"strong clay," and "very strong clay." The moulds for these varied—$\frac{3}{8}$in. in length, 1in. in width, the thickness remaining the same in all. By Act of Parliament, the maximum size of the mould was not to exceed 10in. in length, 5in. in width, and 3in. in thickness; and as there was a duty of 5s. per thousand on bricks in 1823, reduced to 3s. 9d. in 1835, allowing one-tenth for waste, the makers naturally made the bricks as large as the Act allowed, and in this way the present thickness of a brick (3in.) became fixed. The size of plain roof-tiles (10½in. by 6in.) was also fixed in a similar manner, for they were liable to duty, too. The old London brickmakers had some quaint technical terms of their own which it may be

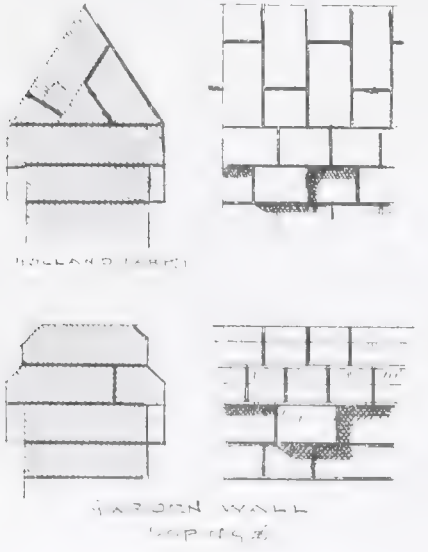


Fig. 4.

of interest to rescue from oblivion. "Skintling," for instance, meant moving bricks in the kiln and so arranging them as to allow heat through currents of air. "Crouding" was running the bricks from the hack to the kiln and setting them in it. "Burn-overs" were imperfectly burnt bricks which were [illegible] and "stripping" was taking off the casings of the kiln and stacking the bricks.

In clay districts bricks are made to do duty for much that in other places would be of stone. Copings are so liable to be destroyed by rain and frost that it would seem imperative they should be of stone, so as to have as few joints as possible; but this is not so, and all over the clay countries copings flat and saddle-backed may be seen. In the latter case the bricks are cut to the slope required, and, though set in ordinary mortar, they appear to make an efficient wall-covering. Fig. 3 is an example of the latter coping from Eastbury an old one. Fig. 4 is more recent, but the same kind of thing, from Kensington, whilst the example below is modern, and also constructionally good.

Some fine old copings may be seen in the country around Upminster, in Essex, and Uxbridge, in Middlesex. The forms are pleasing, and such as the bricks would suggest, the design being in no way forced. In our notebooks we find stonework constantly jostling brickwork; and here, after leaving the London district, we find ourselves on the borders of Wales with what we shall call a "squinch." This is, as the reader will see, an expedient for changing a square tower to an octagon. "Squinch" and "sconce" are supposed to mean the same thing, according to Willson's Glossary of Technical Terms used in Gothic Architecture, and "sconce" is there defined to mean "an arched buttress at the corner to strengthen a spire." But our sketch illustrates nothing of this kind, so that the statement of its being a "squinch" must be taken with all reserve. Our sketch shows a very common-sense arrangement of corbelling with an arch spanning the whole, so that at the upper level an octagonal base is arrived at to carry a spire. The two segmental covering segments of the arch exercise an outward thrust on the walls; but the latter are so thick, as a rule, and the materials used are so rigid, that the construction, though apparently faulty here, is found in practice never to fail. The stonework is shown to be ashlar on the drawing; but in reality the cut stonework is restricted to the corbels and the arch, the rest being rubble-work, so that in this respect the sketch must be taken as being more or less diagrammatic. Fig. 6 is a three-light tracery window in stone from Salop, and it is given here for comparison with a three-light window in brickwork, which will be illustrated in our next article. Those early windows do not lend themselves to be carried out in brick with such facility as the later windows do, with straight upright bars instead of circles in the window-heads; and tracery worked in brick is, to a stonemason, a thing almost incomprehensible. When we say that tracery has been worked in brick, we do not mean in blocks specially cast for the purpose: we refer to windows where the jambs, mullions, and tracery such as it is, are built up with ordinary bricks. The tracery of every window must be drawn full size, so as to lay down the joints on it, and in this way define what are known as the "face moulds," two of which are shown in the sketch. These and the "joint mould" make up all the templates

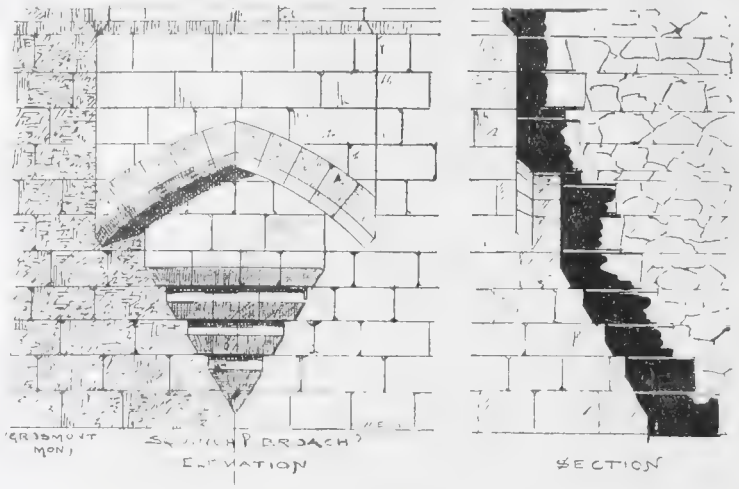


Fig. 5.

or patterns the mason will require. It will be seen that the joints in any curved bar of the tracery always radiate from the centre of the curve, and if that joint strikes another curve of a different radius then the joint-line must be diverted from the centre of the new curve. Such joints are shown just above the springing in the sketch. When there are "eyes" or "pockets" in the tracery, it is usual to open them by flattening the curves a little, or there would be no glass in these small compartments in many cases. Face-moulds for one-half the windows need only be made; for these, reversed, will give the other side. It is not an easy matter to fit the three circles into the heads of the pointed arches. A pupil could not get

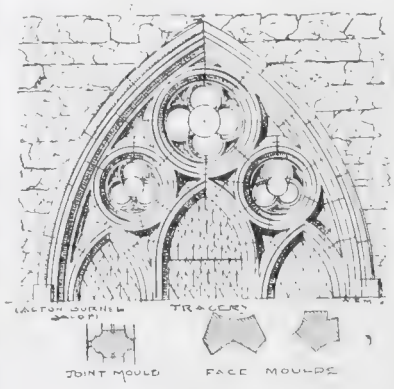


Fig. 6.

a better example for copying to a large scale and making the necessary face and joint moulds.

THE STUDY OF RENAISSANCE ORNAMENT.

By H. Davis Richter.*

Before passing to an analytical survey of the English Renaissance styles of ornament, it will, perhaps, be well for us to determine exactly what we mean by the word "ornament." I think we may take it that ornament is something absolutely necessary to the complete happiness of man. This may at first sight seem over-asserting the importance of the subject; but on closer examina-

* A lecture given at the L.C.C. Camberwell School of Arts, Oct. 6, 1913. Copyright reserved by the author.

tion we shall find that wherever man has existed ornament is to be found. In fact, it is sometimes historically of the utmost value as recording the habits of what would otherwise be prehistoric times. I think ornament must originally have been the outcome of gladness. Man found the world good to live in, and he recorded his impressions of the things he loved. Thus we have rude carvings, or scratchings, on bones illustrating the delight of the chase, bird and tree forms, etc. If in this world we were simply given life, without forms to satisfy the eye, I feel that we should not have the desire given us to ornament our useful articles; but, on the other hand, we are given a beautiful world, with an ever-changing sky, lovely flowers and trees to look upon, and thousands of things that are not absolutely necessary for life; and in like manner we have that gift within us that makes us desire to ornament our useful objects, and to make them things of beauty as well as of use. Consider for one moment a world all of one colour; a never-changing leaden sky; a flat, barren landscape without a tree or flower. Should we then have the desire for ornament? I think not; but the world is far otherwise, and it is given to man, in his gladness for such a sumptuous fare, to respond. As designers, I must say to you, Let that response be with all your heart; make it as worthy as you can of the gifts given; do not degrade your work to the "stock pattern" type; but let it be expressive of the best that is in you.

Remember that all true ornament is the natural outcome of the material, put there because the designer felt it must be so. It is not something applied as an afterthought, or to make the article cost more. Such work is not ornament at all, but an outrage on art; it is merely commercialism. Style in ornament may be regarded as the embodied character and history of a people, more or less perfect in proportion to their technical attainments; or, to put it in the words of Owen Jones, in speaking of architecture, "It is the natural expression of the *wants*, the *faculties*, and the *sentiments* of the age in which it is created." I should like you to make a note of this, as by it you may, to some extent, determine true style or bad work. Thus a style should be expressive of the age, and generally is so: otherwise it becomes merely an affectation. Depend upon it, Solomon's Temple was as expressive of the period as a gorgeous Louis XV. state apartment is typical of the luxury of the period, or a lofty Gothic cathedral of the religious aspirations of that time. At the present day, we are surrounded with examples of all styles—Egyptian, Arabian, Chinese, Indian, etc. Yet for us to imitate or reproduce any one of these styles would be merely affectation on our part, and not expressive of our nature or present-day mode of life. Naturally, with the ever-increasing intercourse of the nations, a mingling of style is likely to come to pass; but if it is a true style, expressive of the mingled people and of modern thought, it will not be an abject copy of any one style, but a fusion of several. From the same reason, all attempts to revive Gothic architecture as a national style have resulted in failure. The spirit of that age is dead. Gothic architecture is no longer the outcome of the thought of the day. The Church has lost that absorbing command on the thought of man. We must be thankful for the wonderful outcome of the Gothic period; but to produce modern buildings in this style would be as incongruous to us, as a nation, as a luxurious Eastern palace is unsuitable for the home of a recluse or a scholar.

From the end of the 14th century we have returned to Classic tastes in literature; this in turn influenced the arts of architecture and ornament throughout Europe, and it is to this period that we shall have to confine our attention during this course. To study other styles would be interesting and extremely useful to the designer; but to do so would take several courses of lectures. We shall this evening endeavour to gain an impression of the chief factors influencing the growth of the English Renaissance style from the beginning of the 16th to the middle of the 18th century, covering a period of three hundred years, rich in the evolution of our present-day artistic outlook, ranging from the majestic grandeur and impressive mass of the Elizabethan and Jacobean mansions, with their sturdy furnishings, full of virile superabundance of strength, often coarse and ill considered in detail—surely the expression of a people confident in themselves, self-reliant, and a little boastful of their strength and might, and not over-refined in their mode of expression. Turning from this to the end of our period, we find a marked difference in the dainty and dandified Adams style, eminently elegant, stilted in its phraseology, with an air of borrowed artificiality in the ornament, laid upon a true construction basis. Take, for an instance, the painted ornament of the day on well-designed or beautiful cabinetwork, consisting of so-called Arcadian and pastoral scenes, depicting shepherds and shepherdesses in Court dress, tending very artificial and playful sheep, and surrounded by wreaths of roses. The very application of paint in this manner is a debased and artificial expression; thick, sticky oil paint is essentially a medium for big and broad treatment, with a technique of its own, showing the method of building up and brushwork employed by the artist. In the example under consideration the whole body of paint is destroyed by papering off and French polishing over, to give an unbroken surface to the panel. Such treatment is suitable for staining, but not for painting. In the character of this ornament and the method of expression employed we may see the reflex of a people masking their true nature under an affectation of elegance and refinement which is by no means to be found under the surface of this corrupt and immoral period, when only vices that were discovered mattered.

The English styles have been, from time to time, greatly influenced by the arts of other countries. In saying this I do not wish to convey the impression that we have no national art; on the contrary, each style we shall study is essentially English: though it may be inspired by others it is never a copyism. The rendering is English. Thus, as we proceed, we shall find the Italian carvers working in England during the reign of Henry VIII., grafted their ornament upon a purely English Gothic foundation; the ornament they introduced rightly belongs to a slightly earlier period of Italian, and it is more to be associated with the terracotta relief medallions, etc., used by Luca della Robbia (1400-1482) and Andrea della Robbia (1435-1525). This may be attributed to the influence of Pietro Torrigiano, who executed one of the most important pieces of work of the period—the tombs of Henry VII. in Westminster Abbey (1512-1518)—in marble and bronze was also a worker in terracotta. This period of English work is very similar to the French style of Louis XII. and early Francis the First, but is not traceable to them. At the death of Henry VIII. we find the Italian influence dying out, and for a short period the English work reverts to the Gothic and Tudor style; but with the Elizabethan and Jacobean periods 1558 to 1620 English Renaissance art becomes firmly established; but influenced by Dutch, Belgian, and German artists. The first portion of this work, executed by Dutch and German craftsmen, is necessarily similar to their style; the later work, during the reign of James I., is executed by Englishmen, and becomes more national in character. Continuing the development, the work of the Charles I. and Commonwealth periods becomes more Classical, and is entirely influenced by Italian models, rendered by the masterly hand of an Englishman, Inigo Jones (1573-1651). This phase is, in turn, succeeded by the work of Wren (1632-1723), from the reign of Charles II. (1660) to that of Anne in 1714, during which period the constructive work retains the Italian influence, while the ornament adverts slightly to the earlier French work of the Louis XIII. period. This is, no doubt, traceable to the French Court feeling introduced by Charles II. and to Wren's studies in France.

With the Early Georgian period the architectural basis becomes still more formally Classic in its proportions, while in furniture, small ornaments, hangings, etc., an extravagantly over-decorated period prevailed of French Rococo and Chinese style, rendered by Thomas Chippendale and his followers. The later styles owe more to Grecian ornament, and to the painted decorations at Pompeii and to French rendering of this period. Thus we find in the Adams style purely Classic detail, with ornamental plaques of china, consisting of [illegible] relief-work being white and the groundwork blue. The surrounding ornament is composed of honeysuckle and anthemion, together with the Greek key, used in much the same way as in Louis XVI. work. With the English rendering of the French Empire style there is still greater insistence on severe and simple Classic forms.

THE LIGHTING OF SCHOOLS.

A conference of educationists was held on Saturday at the National Gas Exhibition at Shepherd's Bush, the object being the discussion of the heating, lighting, and ventilation of schools. Sir George W. Kekewich, who presided, observed that very little regard was paid, whether in elementary or secondary schools, to proper lighting or sanitary arrangements. It was absolutely impossible to educate a child in an ill-ventilated, improperly heated, or badly lighted school. With regard to ventilation, he maintained that in every school the window-heads should be taken up to the ceiling. The reason this was not generally done was because such windows did not look pretty, and thus sanitation and comfort were sacrificed to appearance.

Professor Silvanus P. Thompson read a paper on "Some Considerations on the Brightnesses of Lights." In a school the important point was to ascertain whether sufficient illumination was afforded at the places where the scholars read and wrote, and where the teacher wrote on the blackboard. During the last two years the Illuminating Engineering Society had had valuable reports prepared for it by three special committees. One of these reported on school lighting, and recommended that for ordinary work in reading and writing the minimum illumination at any desk should not be less than two candle feet, some members of the committee favouring a minimum of 2½ candle-feet. For special work, such as drawing, stitching, and the like, the minimum recommended was 4ft.-candles. For blackboard illumination two candle-feet was admitted to be sufficient only for small classrooms where the students were within 20ft. The lamps for lighting the blackboard should be screened from the eyes to prevent glare. The committee laid some stress on the use in general of shades or globes which diffused the apparent brightness of the source over a considerable area, so as to reduce the glare caused by lights that were too concentrated. The committee favoured the use of indirect lighting, in which the rays of the lamps were intercepted and thrown upon ceiling or walls only, so that a soft diffused light alone reached the eye. The disadvantage of this method was that it was almost shadowless. For reading and writing this was good, but the visibility of solid objects and raised surfaces greatly depended on the presence of shadows, and for such a direct illumination was preferable. The good lighting of a room depended not only on the disposition of the lights and on their proper shielding, but on the nature of the wall surface on which the light fell. Few people knew how much light was wasted and thrown away. A whitewashed wall absorbed from 30 to 40 per cent.; an ordinary yellow or buff wallpaper usually wasted 50 to 60 per cent.; the deep scarlet and crimson wallpapers now fashionable for dining-rooms wasted from 70 to 75 per cent. For economy in artificial lighting, and for comfort in the daylight lighting of large rooms, the ceilings should be invariably white, and the walls, if not white, should be of the palest tints.

A paper by Mr. Leon Gaster, hon. secretary of the Illuminating Engineering Society,

[illegible] read in his absence by Mr. Dow. In the matter of schools, he said, it was known that small type and involved diagrams were doubtless the cause of much eye trouble among young children. Much of the cheap literature read by children was printed execrably on very poor paper, with resultant damage to the eyes of children, who were apt to read them more or less effectively in corners where they would not be interfered with, but where illumination was usually poor. The scheme of medical inspection of school children should include a study of the lighting conditions.

ROAD BOARD GRANTS TO HIGHWAY AUTHORITIES.

During July, August, and September, 1913, the Road Board have made advances amounting to £340,667 from the Road Improvement Fund to county councils and other highway authorities as follows:—

Road crust improvements	£291,531
Road widenings and improvement of curves and corners	15,348
Road diversions	5,593
Reconstruction and improvement of bridges	5,775
Construction of new roads and bridges	22,420

The total grants up to September 30, 1913, are as follows:

Road crust improvements	£1,362,261
Road widenings and improvement of curves and corners	133,847
Road diversions	33,928
Reconstruction and improvement of bridges	59,337
Construction of new roads and bridges	83,498

During the same period advances by way of loan have also been arranged to the sum of £126,467, making the total sum arranged to be advanced on loan up to September 30 £356,110. In addition, further advances amounting to £1,593,806 have been indicated to highway authorities towards works of road construction and improvement.

The total amount paid into the Road Improvement Fund from the constitution of the board up to September 30 amounted to £3,930,606, and the total advances made and promised up to September 30 to £3,622,787, leaving a balance now available for grants and loans of £307,819.

CHANGES IN WAGES AND HOURS OF LABOUR IN THE BUILDING TRADES.

According to a Board of Trade Report published on Tuesday (Cd. 7080. 1½d.), after a long period, commencing about the year 1902, during which wages in the building trades had shown little movement either up or down, there was a marked upward tendency in 1912. All the changes recorded in this group of trades during 1912 were increases, and they amounted in the aggregate to £8,360 per week on the wages of 95,653 workpeople. In 1911, 16,891 workpeople received a net increase of £1,609 per week, and in 1910, 4,970 received £377 per week. The proportion of the total number employed in the building trades whose wages were changed in 1912, so far as ascertained, was about 10.6 per cent. as compared with proportions varying from 0.3 to 5.0 per cent. in the years 1902 to 1911.

Employment in the building trades is described as "fair on the whole" in 1912, the percentage of trade union carpenters and plumbers unemployed being the lowest since 1902. That, unfortunately, as we have before pointed out, is a very unreliable basis of calculation.

The principal increases during the year affected 1,350 painters at Newcastle, Sunderland, and other north-east coast towns; 2,111 bricklayers, masons, carpenters and joiners, slaters, plasterers, and labourers at Hull; 1,000 carpenters and joiners at Leeds; 5,850 bricklayers, carpenters and joiners, plumbers, and woodcutting machinists in Manchester and district; 5,930 bricklayers, slaters, painters, labourers, etc., at Birmingham; 2,855 bricklayers, masons, carpenters and joiners, plumbers, plasterers, painters, labourers, etc., at Bristol; 1,323 bricklayers, carpenters and joiners, plumbers, plasterers, and labourers at Coventry; 1,048 bricklayers, masons, carpenters, plumbers, plasterers, painters, and labourers at Northampton; 3,500 masons and 20,000 carpenters and joiners in London; 2,700 bricklayers, masons, carpenters and joiners, plumbers, plasterers, painters, and labourers at Cardiff; 1,490 bricklayers, masons, carpenters and joiners, plasterers, and labourers at Newport, Mon.; 1,140 masons, carpenters and joiners, and slaters at Aberdeen; 1,040 bricklayers, masons, joiners, slaters, and painters at Dundee; 3,225 masons, carpenters and joiners, and painters at Edinburgh and Leith; and 6,490 joiners, slaters, plumbers, and painters in Glasgow and district; all of whom received an increase of ½d. per hour. In addition, 1,100 carpenters and joiners in Sunderland and district, 1,000 labourers at Bradford and Shipley, and 1,600 labourers at Dublin received ¼d. per hour; 2,000 painters at Liverpool received ¾d. per hour, and labourers numbering 2,000 at Liverpool and 2,500 in Manchester and district had their wages increased in both cases to 6d. or 6½d. per hour.

The extent to which each of the occupations included in this group was affected is shown in the following table:—

Occupations.	Net Increases.		Net Decreases		Total.	
	Work-people affected	Total weekly amount	Work-people affected.	Total weekly amount.	Work-people affected.	Net Increase per week in wages.
	No.	£	No.	£	No.	
Bricklayers.	6,597	375			6,597	375
Masons ...	6,708	592			6,708	592
Carpenters & joiners	43,321	3,649			43,321	3,649
Slaters . .	989	97			989	97
Plumbers ...	4,692	449			4,692	449
Plasterers ...	2,185	215			2,185	215
Painters & decorators	14,609	1,448			14,609	1,448
Labourers ..	15,643	1,450			15,643	1,450
Others	899	85			899	85
Total	95,653	8,360			95,653	8,360

The changes affecting carpenters and joiners accounted for 45 per cent. of the total number affected, and for 44 per cent. of the total weekly increase.

CHANGES IN HOURS OF LABOUR.

In 1912, 47,288 workpeople in the building trades had their hours changed, as compared with 6,150 in 1911 and 12,918 in 1910. Of these, 46,403 had reductions amounting to 37,890 hours per week, and 885 had their hours increased by 384 per week. The net result of all the changes was thus a reduction of 37,506 hours per week, as compared with one of 3,658 in 1911 and 4,209 in 1910.

The principal reductions were those affecting 2,100 bricklayers and 3,000 carpenters and joiners at Manchester, 2,000 painters at Liverpool, 8,250 bricklayers, masons, carpenters and joiners, wood-cutting machinists, plasterers, plumbers, painters, and labourers at Birmingham, and 3,500 masons and 20,000 carpenters and joiners in London.

MODERN TECHNICAL DRAWING.*

This is a useful handbook describing in detail the preparation of working drawings, with special attention to oblique and circle-on-circle work; orthographic, isometric and oblique projections, practical perspective, and freehand drawing, and "setting out."

Nearly 300 examples are illustrated, and these should enable any beginner to prepare a working drawing in a workmanlike fashion, and not in the slipshod style too common in architects' and builders' offices.

The chapter on lettering included deserves study, and we heartily wish all would confine themselves to the few alternative examples Mr. Ellis gives, and we should not break our hearts if they neglected Nos. 2, 6, and 7. The fantastic fashion in which some draughtsmen will write-in titles, etc., is as ridiculous as it is often perplexing.

* Modern Technical Drawing. By George Ellis. London: B. T. Batsford. 5s.

AN AMERICAN CATHEDRAL NAVE.

Mr. Ralph Adams Cram, who was recently elected as consulting architect of the new Episcopal Cathedral of St. John the Divine, which has long been in course of erection on Mornington Heights, New York, has just given a description of the proposed new nave, for the hastening of which work Mr. Cram personally subscribed a thousand dollars.

The cathedral was designed by Messrs. G. L. Heins and C. G. La Farge, of New York, and its erection was begun in 1892, and after some delay the first section—consisting of the choir, with circular-ended ambulatory and a chevet of chapels beyond, together with the crossing temporarily roofed in above the capitals of the four great piers—was opened in May, 1911. This section exhibits intentional asymmetries of dimensions and plan, there being purposeful variations in the sizes of the arches, the height of the piers and their capitals, and the spring of the piers, while the choir arcades are not parallel, but slightly converge towards the east. The architects' original design for the cathedral was illustrated from a model and a perspective drawing in our issue of December 14, 1906, and photographs of the work in progress, taken by Mr. Harry Hems, in the same number, and of the Belmont Chapel in that for December 28, 1906. An earlier photograph of the choir at the time was published in the Building News for January 23, 1903.

Mr. Cram says: "Here we have already a new idea of a cathedral—that is, it is not the normal cruciform plan with its congested crossing and central tower, and its forest of columns, dividing the whole space into nave, transepts, and choir, with its subsidiary and multiplied aisles. It is rather, so far as it has gone and so far as it promises for the future, a series of great squares of varying sizes. It is a people's cathedral, not a monastic church; it is not primarily conceived for magnificent ceremonies and long and splendid processions; but it is for the people in their common worship, with great open spaces from which all can see and in which all can hear. This general idea, already well fixed, must be carried out here in the continuation of the work. We could not retain what we have, stop where we are, and then add a narrow 300ft. nave like that of Canterbury or Amiens or Wells. Instead, St. John's must be in principle a continuation of the type already laid down. We must get our great square spaces, our solid piers of supporting masonry, and our simple combinations of masses and of light and shade. That is an inspiring thought—the working out of an entirely new plan that shall do no violence to the principles of Gothic art; and, frankly, I think this new plan will be developed, though I may be prejudiced. Now, the nave, on this plan, consists of a series of these great squares, 50ft. across, working out towards the west, and separated by great piers, some 18ft. square, pierced laterally by ambulatory openings. Then the sides of these squares are subdivided each by a single shaft, a clustered column that rises from the pavement to the springing of the vault, a sheer hundred feet in height, and without lateral buttressing or supports. These sequent squares will be buttressed by solid masonry, roofed by sexpartite vaulting, and with the clustered shafts, 6ft. in diameter and 100ft. high, taking the cross ribs of the high vault.

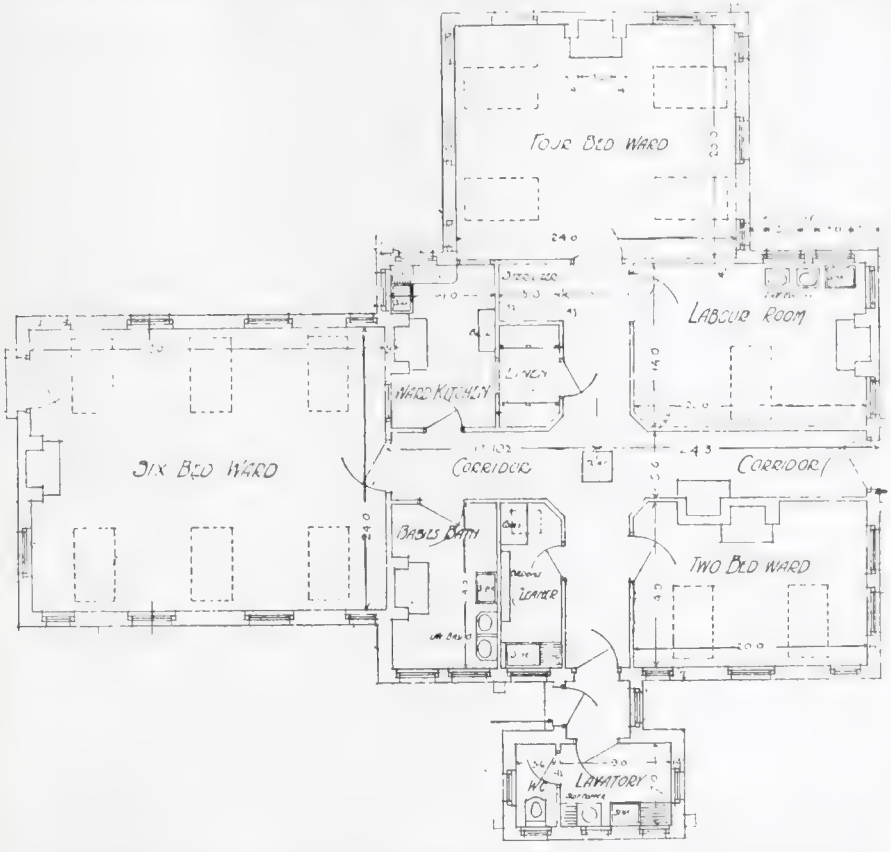
"As you come into the nave from the west you will see at first only this great range of alternating piers and shafts, with all the play of light and shade, rising high into the air and then curving into their ribbed vaults 150ft. above the pavement. No windows will be visible except the central window over the high altar, with its flame-clothed figure of Our Lord in Glory.

"But as you come down toward the east each of the side bays will open out, disclosing one window after another, all filled, I hope, with glass like that of Bourges or Chartres. And at last, as you stand under the great crossing with its colossal domical vault, 100ft. in span and 250ft. to the apex, the transepts will open out right and left,

200ft. broad, and at either end an enormous rose, like that of Notre Dame, and turning you will see the third rose at the farthest west. That is, after all, the final thing, the classic thing—the three roses at the end of the cross."

MOTHERS' HOSPITAL, LOWER CLAPTON ROAD: PLAN OF MATERNITY WARD BLOCKS.

The Duchess of Argyll will open the new buildings of the Salvation Army Mothers' Hospital to-morrow, the 18th inst. We gave some particulars of the scheme as executed in the BUILDING NEWS of October 3, and we now give a copy of the plans of the wards which form the unit of the general arrangement, these wards being identical in plan, and are connected by an open corridor, each block being complete in itself. There are to be six of these buildings, besides an isolation block to the rear, and the administration blocks, erected near the front buildings, where there is a good laundry. Four of these bungalow blocks, out of the half-dozen just mentioned, have already been completed. Their external treatment architecturally is plain and merely utilitarian. Dr. Donald Mackintosh, of the Western Infirmary, Glasgow, advised upon the details of the planning of their arrangements. The architect is Mr. Alex. Gordon, F.S.I., of Queen Victoria-street, E.C., the builder being Mr. Coxhead, of Leytonstone, and Messrs. Dolby and Williamson consulting engineers for that part of the undertaking. The frontage extends to 250ft. and the site covers 2¾ acres, with its axis east-west.



MOTHERS' HOSPITAL, LOWER CLAPTON ROAD: PLAN OF MATERNITY WARD BLOCKS.—Mr. ALEX. GORDON, F.S.I., Architect.

THE LONDON COUNTY COUNCIL.

At the meeting on Tuesday last of the London County Council, it was decided, after considerable discussion, to make a contribution of one-half, not exceeding £77,500, of the net cost of the widening of St. Martin's-le-Grand and Gresham-street, at the site of the Old General Post Office, and of Cheapside at Sweeting's Corner. The improvements result from the demolition of the old Post Office, and will be carried out by the City Corporation. St. Martin's-le-Grand, which at present varies in width, for this 500ft. frontage to be dealt with, from 54ft. 2in. to 62ft. 9in., will, after the alterations have been effected, have a uniform width of 80ft. It is also proposed to increase to a uniform width of 50ft. the portion of Gresham-street adjoining the site, the width of which at present varies from 24ft. 3in. to 32ft. 4in. At Sweeting's corner Cheapside will be widened to 95ft.

The Education Committee reported that in connection with the Vallance-road site, Whitechapel, on which school buildings are about to be erected, a hoarding has been constructed for the Council by Messrs. Higgs and Hill, Ltd., the contractors, but having regard to the provisions of section 3 of the Education (Administrative Provisions) Act, 1911, and to the fact that the hoarding is required for the purpose of erecting a school according to plans approved by the Board of Education, no application was made to the Stepney Borough Council for a license under the Metropolis Management Act. The borough council subsequently issued summonses against the contractors in respect of their failure to apply for a license, and the Education Committee endeavoured to arrive at an amicable settlement of the question, offering without prejudice to give notice, and take out a license in respect of hoardings on the public way round school sites in the borough of Stepney, provided the borough council waived the payment of fees. The borough council did not see its way to agree to this course, and on the hearing of the summonses the magistrate decided that the hoarding required the borough council's license, and could not be said to be any part of the building to be erected, and stated that he did not feel disposed to give such a decision as would upset the practice of many years' standing. Notice has been served upon the magistrate, and he has expressed his willingness to state a case for the opinion of the High Court. The decision raises an important question of principle, and the committee recommended that the notice given to the magistrate to state a case for the opinion of the High Court should be proceeded with.

On the recommendation of the same committee the seal of the Council was affixed to a deed of assignment by W. Johnson and Co., Ltd., of their contract for remodelling the Randall-place L.C.C. School, Greenwich, to W. Lawrence and Son.

It was reported that the total of the accepted tender of Messrs. Holliday and Greenwood for the erection of the Maudsley Hospital had been agreed after examination by the quantity surveyors to be £43,526, instead of £43,295, as reported on July 8 last, and the contract is being entered into on the basis of the revised total. It has been arranged that Messrs. C. John Mann and Son, the quantity surveyors for the Maudsley Hospital, shall measure variations and make up the accounts in connection with the erection of the building at the rate of 1¾ per cent. for additions and 1¼ per cent. for omissions. Mr. J. B. Johns has been appointed clerk of works for the erection of the hospital at a salary of four guineas a week.

For the provision of new and enlarged workshops at Colney Hatch Asylum, a special vote of £1,585 was passed, and also about £300 for the enlargement of the front lodge at this asylum.

The Fire Brigade Committee recommended that the fire station at Camden Town, which was built in 1885 at a cost of £7,300, and has not since undergone structural alteration, be reconstructed as soon as possible at an estimated outlay of £7,500.

The Improvements Committee recommended that settlements, amounting to £44,044 11s., of claims in connection with the Ball's Pond-road, Bromley-road, Southgate-road, and Green-lanes, New North-road, Canonbury-road, and St. Paul's road, London-road to Park-road, High-street, Wandsworth, High-road, Kilburn, Cressy-road and Agincourt-road, Dorset-street and Southgate-road, Borough High-street and Westminster Bridge-road improvements, be referred to the Finance Committee with a view to payment.

The Housing Committee reported that they had considered clause 8 of the Housing of the Working Classes Act, 1913, which was withdrawn after having passed second reading in the House of Commons. The clause purposed to give powers to the London County Council to exercise under agreement with any metropolitan borough council of any of the powers of such borough council under Part II. of the Housing Act of 1890. The powers referred to were those relating to closing and demolition orders and the removal of obstructive buildings. The committee are strongly of opinion that the vigorous enforcement of the provisions of Part II. of the Act of 1890, as extended by the Act of 1909, relative to closing and demolition orders and the removal of obstructive buildings, would do much to ameliorate the evils existing in many unhealthy areas and groups of insanitary houses, which are, unfortunately, far too numerous to permit, on account of the excessive cost, of their being dealt with in a complete and comprehensive manner by means of improvement or reconstruction schemes. They therefore recommend that steps be taken to consider at the meeting of the Council on Thursday, the 28th inst., a proposal that it shall take measures for promoting in the session of Parliament of 1914 legislation relative to closing and demolition orders and obstructive buildings. At the same meeting the Council will consider a further proposal to take the measures for promoting in the session of Parliament of 1914, legislation with a view to powers being obtained to enable part of the cost of acquiring insanitary property for the purposes of a new school site to be charged against the Dwelling House Improvement Fund and to enable a metropolitan borough council to contribute towards the cost should it deem it desirable to do so. The Housing Committee also ported that the work comprised in the contracts entered into for the erection of 98 cottages on the Tower Gardens section, and five shops along the Lordship-lane frontage, White Hart-lane estate, has been completed. The cottages contain accommodation for 665

persons, and altogether accommodation for 6,835 persons in 875 cottages has now been provided on the estate. The first contract for building work on the western section of the Old Oak estate, Hammersmith, has also been completed. The contract comprised the erection of 103 cottages and 26 cottage flats, containing accommodation for 810 persons, and two shops. The work under other contracts for the erection of cottages is approaching completion, and altogether accommodation for 1,563 persons in 232 cottages has now been provided on this estate.

The Housing Committee further reported on the policy to be pursued with regard to the very large displacement of persons of the working class involved in the acquisition of property over which compulsory powers of purchase for purposes of the education service were obtained last session. So far as can be ascertained at present, the number of persons who will be displaced in various parts of the country amounts to upwards of 6,500, of whom about 3,000 are resident in the four eastern metropolitan boroughs of Poplar, Stepney, Bethnal Green, and Shoreditch. The committee are averse from recommending the erection of any further dwellings in the central and thickly-built-over parts of London. The Council should rather, in their opinion, meet the requirements of the situation created by this extensive demolition by the provision of cottage dwellings in the suburbs. Having regard for the somewhat controversial nature of the proposal to provide the new accommodation at a distance from the area of displacement, they think it would be well, in the first instance, if a deputation of members of the Council were to wait upon the President of the Local Government Board in order to lay before him the Council's views upon the subject. The committee suggest developments in connection with the remainder of the Council's White Hart Estate at Tottenham. A scheme for the development of the southern portion has been prepared which provides for the erection of working-class dwellings on 62 acres and for the sale or lease of 43 acres for better-class houses, the remaining 19½ acres being devoted to public buildings, open spaces, etc. The estimated expenditure is £448,500. The committee state that they regard with favour a suggestion to develop the remainder of the estate by allowing larger plots for the working-class houses, which could then be let at somewhat higher rents. The land would then be more rapidly developed and made rent-producing, and that less capital expenditure would be required.

This recommendation gave rise to an animated discussion. The reference of the recommendation back was moved by Mr. Hobson, who urged that a number of people could not be displaced without causing inconvenience in the whole neighbourhood. He asked if housing on the White Hart-lane Estate could possibly meet a deficiency of accommodation in Poplar? The amendment was seconded by Mr. Phillimore. Mr. Sebag Montefiore, supporting the recommendation, urged that people should be encouraged in every way to leave the congested districts for the suburbs. Mr. P. A. Harris expressed the opinion that too much latitude was already given by the Local Government Board in this matter. Mr. Cyril Jackson urged the desirability of learning the policy of the Local Government Board on the question. Mr. Bernard Holland, the Chairman of the Committee, admitted that there was a good deal to the argument that many of the people who would be turned out could not go to live in the suburbs. They could not go to Mr. Burns with a definite scheme; they wished to know whether, under the special circumstances, he could take the facts into special consideration. The amendment was defeated on a division by 63 to 11, and the recommendation was approved.

A secondary school for girls is being built at Hereford, near the recently-completed secondary boys' school. The latter building cost £10,500, and the contract for the girls' school has been taken by Messrs. Bowers and Co., of Hereford, at £9,341 10s.

THE COTTAGE PROBLEM.*

The object of this paper is not to put the writer forward as a supreme authority on how cottages should be built or what accommodation they should afford, nor as the possessor of some occult knowledge concerning the erection of cheap cottages. Many have claimed these distinctions, however. My object is to elicit the experience of those who have been associated with the building of labourers' cottages in various parts of the country for years past, and, living in their midst, must know the requirements of the farm labourer. The question of how to house the farm labourer at a reasonable cost has reached an acute stage. The country is being drained of the best part of its rural working population from two causes, low wages and want of proper and sufficient dwellings. With the former we have nothing to do; but we are interested in the latter in having erected many new cottages or reinstated many old ones. Books have been written, plans have been published, and meetings have been held, all with the one object of attempting to solve the enigma of how to build labourers' cottages that can be let at an economic rent. The only persons, apparently, who have nothing to say in the matter, but who sit on the fence quietly waiting developments, or migrate to the large towns already overcrowded, or emigrate to the Colonies, are the labourers themselves. I am not going to exploit the feasibility of the £100 cottage; this has been done by many during the last fifty years, but only the exploiters seemed to have solved the problem, and then only in their minds—not in practice. I tried building pairs of cottages half a century since, the plans of which gained a £50 prize, for cottages to cost £200 a pair; but whether built of brick, stone, or concrete the result was always the same—nearly £350. Readers of, and listeners to, the exponent of the cheap cottage are often misled by the bare statement that a good cottage can be built, or has been built, for £100, or some other fabulous sum, and what I have just stated is a fair example of the result when attempts are made in that direction.

GOVERNMENT LOANS.

The Local Government Board intend, it is said, to loan money for the erection of cottages only on condition that they measure 10,000 cubic feet, and this is usually what good cottages, built in pairs or otherwise, large landowners provide, but exclusive of outbuildings. In this case the £100 cottage will be entirely out of the running. It has already given way to £150, and this promises to follow in the same direction, and £200 take its place as a minimum, if building materials continue to increase in cost. I am afraid that Mr. Leo Strachey's laudable wish that means may still be found to provide a good country labourer's cottage for £100 will not be realised for many years to come, if ever. By 10,000 cubic feet I am assuming that external measurements is meant, the height taken from top of foundations to floor level at 2ft. and thence to half-way between wall plate to ridge, and that the height of rooms in all cases is 8ft. from floor to ceiling. I believe the Departmental Committee of the Board of Agriculture, in their report on Small Holdings, took for the purpose of comparison 2ft. as the height from floor level to top of concrete foundation; but I submit that if the concrete is made with cement 1ft. is sufficient—at any rate, this has been my practice generally. The rule to arrive at cubical capacity by taking half the height of the roof is, of course, incorrect, but is a recognised custom, and is a simple process in calculating and comparing measurements, roofs not always being of the same pitch.

CONFLICTING OPINIONS AS TO COST.

Much that has been read in the papers concerning the cost of cottages is of a conflicting nature, sometimes amusing, and generally misleading. These statements produce an infinite amount of mischief; they lead landowners to believe that their own architects or clerks of works are incompetent, so far as economical construction is concerned, to build cottages at the same price as others are able to. Mr. Runciman stated in the House of Commons that he had seen a five-room-and-bathroom cottage near York the total cost of building which was £89. A large landowner showed his surveyor the published plan and particulars of the cost, and asked for an explanation. The latter commenced by pointing out that the whole of the carting was put down at £1 4s. The owner required no further information. Mr. Runciman at a later date said in the House of Commons that "a good cottage could be built for £150, and that he was not talking through his hat." Assuming this is practicable, some kind of outbuilding in addition is absolutely necessary, and drains (if any), land, fencing, footways, and water-supply are all items to be taken into account when an economic rent is the object in view. The Departmental Committee of the Board of Agriculture came to the conclusion, after examining a large number of witnesses, that £150 was the minimum cost of a labourer's cottage, and one of the Committee has since stated that during their tour of inspection they found that in some cases the builders declined to build more for the same price, in others the builders became bankrupt, and in others builders obtained gravel or sand near the site free which elsewhere would cost five shillings a cubic yard, but for which they allowed nothing in their estimates, and these cottages, therefore, could not be taken as examples of cost. It is sometimes said that certain cottages have cost so much to build by contract. This statement may be correct, but it does not follow that it was the cost to the builder, which is another matter. Some small builders who are not adepts at quantity taking and estimating for new buildings arrive at the value in curious ways. On one occasion I asked a small builder who was not addicted to close calculations how he came to submit an absurd tender for some cottages, and his reply was that his brother knew a man who had built some very similar for the same money! Statements of cost must always be taken "cum grano salis," unless there is an absolute certainty and a proof of their correctness. On one occasion I was told the low cost of certain cottages, and was offered the prime cost statement of expenditure. I found therein slate and other materials absent, and was told after that the cause for this had been inquired into, and that they came from another job, where they were not wanted, and having been already paid for, could not be charged again. The owner was unaware of this. Mr. Clare Sewell Read, a large landowner and at one time M.P., wrote to the "Field" that he had erected a large covered yard, the dimensions of which he gave, at an absurdly low cost, and I was asked if I could build a similar one at the same price. I could not but write Mr. Read, asking if he would kindly supply me with some details of the cost. He replied that, unfortunately, when writing the letter he was unaware that his steward had not charged for the timber which was cut down on his own estate, nor the carting which was done by the estate horses.

CUBING THE CONTENTS.

The custom to calculate the approximate cost of buildings at so much per foot cube is at its best only a speculative method, and may be described as scientific guesswork. The cost of cottages only a few miles apart may be widely different. Some may be near a brickfield, quarry, limekiln, sandpit, and railway station—an unusual combination, I admit; others may be distant from either, and this makes all the difference. The weight of bricks, lime, and sand for a pair of cottages approximates alone to 100 tons, and stone to more. This shows what an important factor in cost haulage means, an item which, when cheap cottages are under discussion, is often altogether ignored. The result is that the cost cannot be standardised; it is a question of locality. For cottages of an unpretentious character 4d. per cubic foot seems to be the recognised estimate, and if we take the Board of Agriculture's view of the minimum amount of capacity which the Local Government Board may insist on in the case

* A paper read before the Society of Estate Clerks of Works, by THOMAS POTTER.

of loans 10,000 cubic feet the cost would be £353 a pair, to which has to be added the cost of the land, drains (if any), and fences and water-supply, so that possibly a total expenditure of £400 would be near the mark.

ACCOMMODATION.

There is no great divergence of opinion as to the accommodation a labourer's cottage should afford, although more seems to be considered necessary in the North than in the South of England—not in the number of rooms, but in their area. In the South, the living-room—or kitchen, as it is called in the North—averages 14ft. by 12ft., including chimney-breasts, or 160 to 170 superficial feet; the scullery 12ft. by 10ft., larder 7ft. by 6ft., and lobby or passage sufficient only to allow for the doors leading therefrom—about 6ft. by 4ft. The scullery may be considered too large; but it is the wife's workshop, and although a smaller one is sometimes advocated, to compel the family to occupy the living-room for meals, and not make it a parlour, it may happen that the family is a small one, and the wife prefers to keep the living-room tidy for her husband after he has finished his day's work, and on Sundays. It seems a little unreasonable that tenants should not be allowed to make what use they like of their rooms, if with a view to their own comfort and convenience. If, however, the scullery has to be used as a wash-house as well, and to contain a copper and a bath, 12ft. by 10ft. is none too large; and three bedrooms are a necessity, occupying together the same area as the ground floor. To obtain this amount of space, if the outside walls were 11in. hollow brick, a pair of cottages would require to measure 36ft. by 24ft. approximately, and, taking the mean height—if all rooms were 8ft. from floor to ceiling—from 2ft. below ground floor to half the height of the roof, at 23ft. we should get 9,936 cubic feet each cottage. If, however, the copper, the bath, coals, e.c., and many other etceteras are to be found room for and taken out of the scullery and larder area, a good cottage otherwise is spoiled.

AN INDEPENDENT OUTBUILDING,

either attached to, but not opening into, it, or some distance therefrom, is the most valuable asset to a cottage. It should form the wash-house, and contain the washing-boiler and bath, and provide room for the wheelbarrow, perambulator, garden tools, washing-tubs, winter potatoes, paraffin-can, pig-meal (if a pig is kept), and other things which otherwise have to be kept in the scullery, the larder, and under the stairs, while the bath will be packed to its full. If only on hygienic grounds, most of these things are better away from where food is prepared, and people live a great part of their time, and entirely separate from the cottage itself. The outbuilding should comprise also a fuel-house to hold a ton of coals and an e.c. or privy at the extreme end, altogether forming a building about 16ft. by 9ft. out to out, and costing (at, say, 3d. a cube foot) about £20, or, with fittings, including boiler and bath, £24—equal to a rental of about 6d. per week. Unlike a town where coals can be purchased by the hundredweight, the cottager has usually to buy his by the ton. It is often the practice for his employer to haul them free when his waggons return empty from taking corn to market or to the railway-station. We know, of course, that cottages in towns do not contain the accommodation described; but the conditions are altogether different. Food, fuel, and other necessaries can be purchased near at hand. In villages remote from towns it is otherwise, and, owing to the high price of land in most towns, cottage accommodation and the outlay on the buildings have to be restricted to compensate for its cost, and even then, with a rental of 4s. to 5s. a week, return but a small interest on the outlay. The agricultural labourer, with his present wages, is unable to pay more than half that amount.

PLAN.

It is more economical to build cottages in pairs than singly, and still more so to build them in blocks; but there are objections to the latter in country places, and in a general way pairs are more often adopted. A square plan, all sides being equal, is the best for a single cottage—it reduces the amount of external walling and internal wall-plastering to a minimum—but is not so well adapted for a pair of cottages as an oblong or parallelogram. The latter admits of better internal arrangements, and lessens the span of the roof. Where the frontage is equivalent to four, and the depth to three or thereabouts—that is, if the frontage measures, say, 36ft., and the depth 24ft., approximately—we get the best result.

As an instance of how deviating from a square plan affects the amount of external walling, 36ft. by 24ft. takes about 12½ per cent. more than a square plan with a similar area, and 52ft. by 16½ft. 20 per cent. more, although the same area. Many of the cottages erected by owners of large estates who possess the means and inclination to make cost a secondary consideration must not be taken into account when dealing with the cheap cottage problem. I know an agricultural village where the cottages are built in pairs, each cottage having hot- and cold-water supplies, bathroom, and a quarter of an acre of garden. The cost per pair of cottages and fences was £800, and the rent is 1s. a week. On the other hand, there are many owners, not millionaires, who possess only a life-interest in their estates, but who recognise the necessity of properly housing the labourer—the cheap cottage, were it obtainable, being the only remedy. I knew one who said: "My predecessors saved their money, and did not improve their estates. I must either build a limited number of cottages with some pretensions to appearance, or a larger number containing similar accommodation, but with no regard to appearance." He chose the latter. He was probably of the same opinion as Lord Brassey with regard to ironclads, who once said, in reply to a remark that they were specimens of ugliness, that "the beauty of a thing consisted in its best adaptation to the purpose in view." Many old, picturesque cottages are only so by reason of the walls being covered with evergreens or flowering plants, which, if stripped, would disclose only rough, plain walls, with stone-mullion windows and lead casements. The latter will never form an item in cheap cottage construction, and so Nature must be left to do its best, in the way of appearance, to new ones as it has done in the past to old ones.

SUPPLYING QUANTITIES.

It is not a big job to take out the quantities for a cottage or a pair of cottages, and, with a knowledge of the price of materials, the cost within 5 per cent. can be assured. It is desirable, if only for the sake of the brick merchant and timber merchant, that the quantities should be supplied to the builder. If built by contract, it is his own fault entirely then if he prices them below prime cost. I do not agree with the remark I once heard that it is not advisable to supply inexperienced small builders with the quantities, as in framing their own estimates they miss things, and in this way send in low tenders. This is accountable, I suppose, in a measure, for many builders' bankruptcies in country districts.

INTERNAL ARRANGEMENT.

Local customs vary in different parts of the country, and a suitable internal arrangement of cottages in some parts is not considered as suitable in others. At the Letchworth Show there were plans of from thirty to forty cottages erected on landed estates in different parts of the country, many of which showed clever arrangements for economy in construction and good planning; but either the building in which they were placed was in an obscure position or the exhibitors were the obscure factor; I don't know which, for they obtained but slight recognition.

FOUNDATIONS.

The first cost in building cottages is the foundations, and here a considerable saving may be sometimes effected in this way; a layer of concrete over the entire area is always considered necessary, to prevent damp ground air from rising, and is often compulsory. If the loose earth or natural soil, which is sure to contain some form of plant growth, is removed for a few inches in depth and dry, coarse rubble is deposited in its place and rammed, and 4in. or 5in. of cement concrete (1—5) is laid thereon and well beaten, and, if the subsoil is not of the best, a few ½in. reinforcing rods embedded therein, no better foundation is necessary. The concrete must be of a softish character—coke breeze, boiler ashes, or crushed soft brick debris, for instance. This is not a new idea, but has been practised for many years, and is called a raft foundation. If even the raft subsides somewhat, it does so uniformly, and no cracks in walls or partitions result. The raft foundation provides a base to which floor-boards can be nailed for living-rooms, and granolithic paving for the remaining portions. This method makes a floor that is vermin-proof, fireproof, and rot-proof, and surely that is better than an expensive wood-joisted floor on sleeper walls, which is neither. But linoleum must not be laid on floors of this kind—it will quickly cause dry-rot in the boards. The concrete must be dry before the boards are nailed thereto, and, as a rule, there is ample time for this while the building is in progress. The Departmental Committee say a layer of bituminous material between boards and concrete is necessary. It may be so where the subsoil is a bog, but I have never known a case where it has been necessary, nor have I ever had a failure, so far as I know, and I believe I was the first to adopt the system, twenty-five years since. I have heard of failures, and on inquiry found that the concrete had only been laid a week or two, instead of the necessary month or two.

WALLS.

Walls form the largest and costliest factor in cottage building, and is the one about which much disputation has taken place. Many kinds, other than those we are familiar with, have been suggested or patented within the last thirty years, and which consist chiefly of wood framing to which concrete or composition slabs are fixed; but they appear to have dropped out of use almost entirely; they offer no special advantages either in cost or otherwise. I built some cottages at one time of light steel standards, to which small iron bars were attached and expanded steel lathing fixed thereto on both sides and plastered. There was not much difference in cost between those walls and ordinary 9in. brick walls—about 10 per cent. less—but the weight was only 10 per cent. of brick walling and the walls were always dry. The difficulty was, and is, that a man used to fixing metal lathing is required, and for remote districts this is a disadvantage. Possibly something of this character could be developed worth consideration and experimenting with. So far as I know, the only materials for walls in common use now are bricks, concrete, stone, and timber. No one would think of using galvanised iron, and the saving in cost would be but little.

MEASURING WALLS.

In connection with the measuring of and estimating for cottage walls it would be much simpler—more especially for comparisons of cost—to adopt the superficial yard as the standard, instead of the complicated calculations necessary with the standard rod, cubic yard and other local forms. Brick walls 9in. thick—or 11in. with a 2in. cavity—take 100 bricks per superficial yard, and if they can be delivered at, say, 30s. per thousand, lime 12s. per cubic yard, sand 4s. per yard, and labour and scaffolding costs 65s. per standard rod, the prime cost works out at about 5s. 2d. per superficial yard.

STONE WALLS.

The cost of stone walls is more difficult to get at; the stone may be hard to work or the reverse, carriage may be a large item, or it may be obtainable near at hand. It rarely works out at the cost of brickwork. Owing to the unavoidable thickness of stone walls, the cubic capacity of a building is increased to obtain the necessary inside accommodation. If they are 17in. thick there is a loss of 6in. compared with 11in. brick walls, and

which, at 4d. per foot cube, amounts to 1s. 6d. per superficial yard of walling.

CONCRETE WALLS.

Concrete for walls of cottages is not so popular as it was thought at one time it would become, and for various reasons, whether built with cast blocks or monolithic. The latter is where the material is poured into moulds or frames of a temporary nature made of wood. Both block and monolithic walls are easier of construction and cost less where there are fewer breaks and a lesser number of doors and windows than cottages require—as, for instance, farm buildings and others of a similar class. All window- and door-frames have to be built in, and with cottages these openings lessen the measureable area of the walls considerably, but increase the labour. It is not unusual in an estimate to include all openings in the superficial area of the walls, to compensate for the trouble and cost of fixing window- and door-frames. This applies to both block and monolithic construction, and as a result comparisons of cost are often in favour of brick or stone. The cost of the timber and fixing and striking of wood forms for monolithic walls is considerable, and this can only be lessened if a number of similar or dissimilar buildings are required in the same neighbourhood, so that they may be used over and over again. Practically, it does not pay to build a pair of cottages with concrete walls without there are others to follow or some other buildings to erect near at hand, and a capable and trustworthy carpenter foreman, who must be always on the job, is available. Concrete construction must be made a business of if it is to be satisfactory in every way. It has its advantages, however. Seven inches thick is ample for cottage walls, which are dry internally, and of enormous strength, so much so that it often costs less to build a concrete wall than to remove it. Two to three days for a labourer to cut a doorway through a 9in. wall, with steel chisels and hammer, is about the average, in my experience. Other advantages are that materials are to be found in almost any neighbourhood, even where this seems to be very unlikely. I built a pair of two-story cottages more than twenty years since—for want of anything else available—with concrete made of soft chalk dug on the site and with concrete bedroom floors. They are perfectly dry, and always have been.

WOOD WALLS.

Wood framing weatherboarded on the outside and lathed and plastered on the inside has been advocated for cottage walls. Foreign timber is becoming worse and worse in character and higher in price, and some of the commoner qualities possess the elements of dry-rot when imported—in fact, dry-rot is becoming an epidemic, and once it attacks wood in a building there is no telling to what extent it will spread. Walls of this kind require a brick or concrete base above the natural ground. Built with sound wood of good quality, the cost at the present time would be about 3s. to 3s. 6d. per superficial yard, and the brick or concrete base to add. Then there is the cost of periodical painting or tarring, inside lathing, which a brick or concrete wall does not require, danger from fire and dry-rot, extra cost of insurance, the difficulty of selling or obtaining loans on mortgage, and providing a harbour for rats, mice, and other pests. Roughly, the superficial area of the walls of a pair of cottages is 240 yards, and if the difference in first cost between brick or concrete walls and wood walls is 1s. 6d. a yard, the total saving in first cost would be 240 by 1s. 6d. = £18, or £9 a cottage; but the probability is it would be on an average considerably less. So far as my experience goes there are no materials known at present for agricultural labourers' cottage walls, all points considered, more suitable than bricks or concrete. Bricks are never likely to cost much less than at present, and any cheapening in walls points to the adaptation of concrete in some form or other, and this might result if the subject matter was thoroughly gone into in a systematic way and at some cost. At present the high price of cement is against the use of concrete; but as it is far and away greater than its cost this will ultimately, no doubt, find its own level.

PARTITIONS.

Inside partitions of cottages should, if possible, be solid. All hollow places in cottages should be avoided: one never knows what may find its way there. The only exception is hollow-brick walls externally. Concrete slabs 2½in. thick, for the ground floor, are of ample strength to carry the wood floors over, and 2in. do very well for the upper floors. They should be made of coke breeze, if procurable, owing to its lightness, and to which door-jambs and other woodwork can be nailed, without building in wood bricks or using wood plugs. The prime cost is about 1s. 6d. to 2s. a superficial yard for making, and 3d. to 4d. for fixing, which compares favourably with half-brick walls, which cost 2s. 9d. to 3s. 6d. a yard, and, in addition, there is a saving in space. They are easily made in wood moulds, and can be finished smooth enough to render plastering unnecessary where economy must be practised. Wood-stud partitions lathed and plastered are the worst features in a cottage: they are easily damaged, dangerous in case of fire, and afford a retreat for domestic pests.

ROOF-COVERINGS.

For roof-coverings, slates and tiles hold their own, as a rule. There are tiles made of patented materials, and many kinds of sheet coverings; but unless there is evidence of at least twenty years' wear and tear free of maintenance cost, it is doubtful whether any great saving can be effected. Unlike huge buildings with large roof areas, the area of a cottage roof is insufficient to practise methods which may be good enough in many cases, but risky. Cost of maintenance is an important feature in labourers' cottages, which have to be let other than at an economic rent.

CONCRETE ROOF.

Flat concrete roofs have been suggested and tried for years past, and if they could be relied on indefinitely to keep out water without being asphalted, roofs of this character would cost less than wood and slate or tiles. There is ample testimony that they have remained sound for several years; on the other hand, they have failed in most cases, and eventually had to be asphalted. Asphalte firms have much experience in this direction, and the cause is this: concrete, like all other building materials, expands and contracts with change of temperature, and this is estimated to be an eighth of an inch in every 30ft. for a variation of 50deg. of temperature. But this can be controlled to a great extent by inserting some form of reinforcement therein, which, being less exposed to climatic changes, is not affected so readily, and this prevents, in a degree, the effects of temperature changes on the concrete. But temperature changes are controlled in another way—by superimposing heavy loads on the concrete. To illustrate my meaning, concrete walls of buildings seldom give evidence of change of temperature by reason of the heavy load of floors and roofs which they support, and if they do, it is usually near the top, where the load is least. This is proved in the case of enclosure and other walls of moderate height carrying no load. Temperature cracks invariably commence at the top, and die away before reaching the bottom, owing to being controlled by the weight of the upper portion. The cause of this puzzled me for a long time. Concrete roofs, not being loaded, or only to a small extent, are practically slabs of concrete uncontrolled by any—or but little—superincumbent load, and, in addition, are more exposed to climatic changes than walls. Reinforcement saves the roof from cracks resulting from temperature changes for some time; but eventually, the constant stress having a weakening influence, cracks ensue—perhaps not for some years—and nothing will ever prevent these cracks from opening and closing with climatic changes. Evidence given before the Departmental Committee was to this effect, and the remedy stated was to tar and sand the roofs—a common practice, but which lasts only a limited time. Cracks in flat slabs of a similar character—such as in footpaths, paving, etc.—are to be seen everywhere. If there is one thing that is needed in a cottage, it is being watertight, and no liberties should be taken in this direction with the roof.

SKIRTINGS.

Skirtings in cottages should be of cement. Wood wants painting, cement does not. Wood is apt to get dry-rot, and mice easily bore through it. The only objection I ever heard to cement skirting is that it is liable to get damaged and come away from the walls. This is not my experience. But wood or cement angle-fillets about 1½in. square, and chamfered, do equally as well as skirtings, the only object of which is to protect the plastering from damage by chair- and table-legs. This is another small economy. Where cement-slab partitions are used—which are practically undamageable—both skirtings and fillets can be discarded, provided they are not plastered.

DOORS.

What are known as 6ft. 6in. by 2ft. 6in. by 1½in. square-panel doors are the best for internal purposes; they are less subject to warp, twist, and shrink than ledge doors, and cost but little, if any, more.

CUPBOARDS.

A hanging cupboard, in an angle, in each bedroom is an advantage.

DRESSER.

A small dresser with drawers and shelves over, a dwarf cupboard (if means permit), and a fall-down table against the window in the living-room are all well worth their small cost. The fall-down table is extremely useful for many purposes, and affords the house wife, when employed thereat, an opportunity of seeing the bright side of things through the window.

SHELVING.

Sufficient shelving is necessary in the scullery and larder, and a peg-rail with school board hooks in the lobby, and also in the scullery. If these are not provided, the doors will be utilised by driving nails therein for hanging coats and cloaks thereto.

LARDER.

In planning, the larder door should not be in the scullery or living-room—which is almost invariably the case—but in the lobby. Soft foods, such as butter and cheese and milk, rapidly absorb impure gases generated where food is cooked, perhaps washing is performed, and the rooms are occupied for hours at a time by the family with all doors closed. A towel-roller on the back door and blind-rollers or curtain-rods to the windows are essentials.

WINDOWS.

Windows may be the ordinary sash or casements. My experience, in occupying at various times cottages with windows of each kind, is that casements are more draughty, more difficult for keeping out drifting rains, and more readily damaged; and children are apt to sustain injury through the casements, when open and left unfastened, being blown to by a sudden gust, when their hands are resting on the sills. At Braintree, lately, the council built some cottages with casement windows, and, being unable to let them, sought the cause from various women who were wanting cottages, and was told that one reason was, they did not like casements. A lady, some time since, spent some months in inspecting the cottages and ascertaining the views of the tenants in connection therewith in numerous villages in the eastern counties, and invariably she was told they preferred sashes.

SINK.

A sink in the scullery should be fixed on iron brackets. If supported by brick piers, corners and angles are the result; these hold dirt and dust, and between the piers is a convenient hidden place for the slop-pail, house-flannels, scrubbing-brushes, etc. Iron brackets expose these to view, and a better place is, as a result, found elsewhere. Canadian latches are suitable for all inside doors. Cement jambs and frieze and wood mantel to the living-room, and cast-iron grate

and mantel in one piece for bedrooms, of the cheapest description, as they are rarely used except in cases of sickness; and for this reason fireplaces are only necessary in two bedrooms—another economy.

VENTILATION.

The plea that fireplaces are wanted for ventilation is negatived, in my experience, by finding bags of straw pushed up the flues to prevent down-draught. So with ventilation, whether in walls or ceilings. I never saw one yet but which was covered with paper.

CHIMNEY.

If one chimney-stack is arranged to serve all the fireplaces of a pair of cottages, brickwork is saved, and the chimneys are less liable to smoke than if in outside walls.

DRAINS.

Drainage is entirely a matter of circumstance. Probably the best arrangement is for a large bucket to be placed outside and under the sink outlet-pipe, to be emptied over the garden when full. Hidden drains to a labourer's cottage, except there is a main sewer, are always a trouble and a nuisance; but rural by-laws have to be considered.

WATER-SUPPLY, ETC.

Water-supply is a local consideration, and whether a privy or an e.c., is still very much a matter of opinion as it always has been.

BUNGALOW.

The bungalow form of cottage is finding a good deal of favour in some parts, and possesses many advantages over the two-story cottage. It costs no more, usually somewhat less. To the housewife its advantages are that there are no stairs to scrub and for children to fall down, and as, according to Dr. Vivian Poore, the labour of raising the body vertically is twenty times that of walking on the level, each time she goes upstairs she has expended as much strength as would be necessary in a straight walk of 180ft. There being no wood-joisted floors and no wood partitions, there is less danger from fire and dry-rot. A gruesome feature of a two-story cottage, with its narrow stairs and winding treads, perhaps both at top and bottom, is the difficulty of getting a coffin down from a bedroom, in some cases almost a revolting spectacle to those who may be looking on. There are many other advantages, and I speak from a twenty-years' experience in living in a concrete bungalow. Whether Mr. Runciman's scheme for the Government not only to supply plans for cottages, but to become builders' merchants and supply the materials, will be a success is open to criticism. According to Mr. Chiozza Money, M.P., builders' merchants and manufacturers make a profit of 30 to 40 per cent. on the materials they supply—news which will cause some of that class to open their eyes. As a matter of fact, the principal materials—bricks, stone, tiles, sand, and lime—are local products, and to those who can pay prompt cash are obtainable at prices which leave but a moderate profit, and which are, as a rule, purchased direct from the manufacturers, without the middleman's profits. How the Government can supply them for less, establishment expenses included, if the business is to be run on commercial lines, seems somewhat of a puzzle. The windows, doors, and other joinery and the ironmongery seem to be about the only things in which a profit could be made by buying wholesale. The joinery of a pair of cottages, including ironmongery, costs about £38, and washing boilers, baths, ranges, bedroom grates and mantels, e.c. fittings, sinks, etc., £20, together £29, per cottage, and at present cutting prices it is doubtful whether the Government could compete in cost with merchants who deal in those classes of goods, when carriage and establishment expenses, as with every other business, are taken into consideration. Foreign timber merchants say that their business is cut so fine now, owing to competition, that prices are at the lowest. It is not probable that it would answer the Government's purpose to import timber and establish timber depots in various parts of the country only for the purpose of supplying it for cottages and small holdings, and if from one depot the carriage to remote parts of the country would probably make it cost more than timber importers can supply it at, with no middleman's profit to deal with, and with in many cases very much less carriage to pay.

The time allotted for this paper and the discussion thereon only allows sufficient for skimming the subject, otherwise there are many points in connection with labourers' cottages which might be profitably dealt with.

CONDEMNED DWELLINGS

CAN THEY BE USED AS WAREHOUSES?

Mr. W. H. Collin, an inspector for the Local Government Board, conducted the inquiry at Burnley on Tuesday into an appeal lodged by Mr. John Fielding Lancaster, architect, against an order of the Burnley Corporation for the demolition of six dwellings in Engine-court. The same official conducted a public inquiry last year, when the then owners of the property appealed against a closing order by the corporation. The Local Government Board then confirmed the closing order. Later Mr. Lancaster purchased the six small dwellings.

Mr. Southern, solicitor for the appellant, said Mr. Lancaster last May submitted a plan for the conversion of the property into warehouse room, for which there was a considerable demand; but the improvement committee of the corporation disapproved it on the ground that it showed an intention to build over a highway. Mr. Lancaster was quite willing to give an undertaking that the property would not be let for human habitation. Having paid £200 for the cottages, in entire ignorance that although there was a closing order against the property there was any chance of a demolition order being made, and having since spent an extra £100 towards preparing the block for warehouses, it would be hard on him to lose all his money.

Evidence was called on behalf of the appellant that there was no necessity for the property to be pulled down and rebuilt, and that it was not a nuisance or dangerous to the public health.

The town clerk argued that the step the corporation had taken in issuing a demolition order was obligatory upon them, and said they should not be called upon to bear the costs of the appeal, even though the Local Government Board were prepared to vary or revoke the order, which he did not think it had the power to do.

The inquiry lasted five hours. The Inspector intimated that he would view the property and report to the Local Government Board.

The salary of Mr. R. Blanchard, surveyor to the Cannock Urban District Council, has been increased to £260 per annum.

The partnership hitherto existing between T. Bower and E. H. Edleston, carrying on business as architects at Nantwich, Cheshire, under the style of Bower and Edleston, has been dissolved.

The Dover memorial to the Right Hon. George Wyndham, who represented the town in Parliament for nearly twenty-five years, is to take the form of a portrait to be placed in the Maison Dieu Hall. The picture is to be painted by Mr. Harold Speed.

The Northwich Urban District Council has confirmed the housing committee's recommendation to apply to the Local Government Board for sanction of a loan of £8,500 for the erection of forty-eight houses suitable for workers. The houses will be let at 4s. 6d. weekly.

The committee of the City Corporation who are considering the question of the Cloth Fair improvement have decided not to recommend it in its entirety, and propose that the matter be referred to the sanitary committee, in order that certain houses may be dealt with under the powers given to medical officers of health. The object of the reference to the committee, therefore, which was primarily to close Back-passage and Back-court and certain other narrow alleys which are alleged to be insanitary, will not have been accomplished. The committee were considering a clearance of a large area around the Church of St. Bartholomew's-the-Great, a straightening of Cloth Fair, and the rebuilding of the area under the Town Planning Act. The cost was estimated at £200,000.

OBITUARY

By the death on Wednesday of Mr. Ernest Augustus Runtz, F.R.I.B.A., F.S.I., of 64, Victoria-street, S.W., a well-known and very capable architect has passed away, after an illness of about [illegible] years' duration, following upon a serious operation. Mr. Runtz was the sixth son of the late Mr. J. J. Runtz, of Stoke Newington, and younger brother of Sir John Runtz. For some years he was a junior partner in the firm of Walker and Runtz, of Moorgate-street, surveyors and estate agents, and afterwards joined Mr. G. L. Ford, F.R.I.B.A., in partnership. He designed a number of important buildings in London, including the Norwich Union Assurance Co.'s offices at the corner of Piccadilly and St. James's-street; the Anglo-American Oil Co.'s premises in Birdcage-walk; and the Baptist Church (St. Giles's Christian Mission) in Wild-street, Kingsway. He was one of the selected competitors in the final, and abortive, competition promoted by the London County Council for the buildings to be erected under the Strand improvement scheme, and produced, it will be recalled, an otiose and dignified design, which attracted much attention. Of late years Mr. Runtz was best known as a planner and designer of theatres. The Gaiety Theatre at the corner of Aldwych and the Strand was designed by Mr. Runtz in conjunction with the late Mr. Norman Shaw, R.A.; another of his works was the Crown Theatre in Peckham-road, and he also carried out the redecoration of the Adelphi Theatre in the Strand, and many other London and provincial theatres. He had been a Fellow of the Surveyors' Institution since February, 1889, and of the Royal Institute of British Architects since 1908. He leaves a widow and family.

We regret to announce the death of Mr. Joseph Corbett, borough engineer of Salford, which occurred on Thursday night in last week in his 72nd year. Mr. Corbett, who lived at High Legh, Whaley Bridge, was born at Pendleton in May, 1842. He was educated at the Society of Friends' School, Penketh, Warrington, and the Stand Grammar School, and afterwards entered the engineering profession, becoming a member of the firm of Corbett and Raby, and later of that of E. Corbett and Sons, sanitary engineers. In August, 1887, he was elected a member of the town council of Salford, and sat for five years. In 1892 he was appointed borough engineer in succession to Mr. Arthur Jacob, and he held the office until his death.

We are also sorry to learn that Mr. Ambrose Heal, of Norver Hill, Pinner, who since 1907 has been the chairman of Messrs. Heal and Son, Ltd., the well-known furnishers of Tottenham Court-road, died suddenly on Friday at the Lochiel Arms Hotel, Banavie, near Fort William. Mr. Heal, who was 66 years of age, and leaves a widow and family, was the great-grandson of John Harris Heal, who removed from 33, Rathbone-place, Oxford-street, to 203, Tottenham Court-road. He was the author of the interesting illustrated description (reviewed in our columns on the 26th ult., p. 429) of the old Farmhouse in the firm's delivery yard, which is now unavoidably being demolished to allow of the extension and reconstruction of the premises. Since the transformation of the firm half-a-dozen years since into a limited liability company, Mr. Heal's sons, Mr. Ambrose and Mr. Ralph Heal, have been managing directors. The funeral took place at Pinner Cemetery on Wednesday afternoon.

Mr. A. W. Krauss, contractor, of Bristol, died at Rio de Janeiro on Tuesday. Mr. Krauss was returning to his hotel from a visit to the Minister of Public Works when an accident to the motor-car in which he was driving caused his death. Mr. Krauss was born at Bristol in 1873, and at an early age became a member of his father's firm, Krauss and Son, which carried out many important contracts for works in various parts of England and Wales. Mr. Krauss had carried out many large railway and other engineering contracts in Mexico, Argentina, Brazil, and Uruguay. For several years past he has

been the managing director of the South American Railway Construction Company, which is carrying out for the Brazilian Government the construction of 1,000 miles of new railways in the north of Brazil. Mr. Krauss leaves a widow.

CHIPS.

A new county school at Tottenham High Cross, built by the Middlesex County Council and the urban district council of Tottenham, at a cost of £21,547, has been formally opened.

A presentation took place the other day at the works of Messrs. Hunter and Smallpage, Limited, Goodramgate, York, on the occasion of Mr. William J. Pound, their cabinet works manager and foreman, leaving York to take up his residence in Sheffield. The presentation took the form of a gold watch.

The water supply of Oswestry has been for a considerable period causing the town council anxiety, and with the intention of improving the existing state of things it had been decided to lay a new main by the side of the old one for a considerable distance. At Monday's meeting of the council, it was agreed to accept a tender for cast-iron pipes, at a cost of £808, and a tender for laying the pipes at a cost of £429.

Mr. R. W. Hiam, chief draughtsman, has been appointed to be engineering assistant, Engineering Department, Federated Malay States Railways, in addition to his present duties. Mr. K. C. Caldicott has been promoted to the post of district engineer, Grade III., Federated Malay States Railway. Mr. Guy Cyril Bedington has been appointed assistant engineer, Public Works Department, Federated Malay States Railway, and has assumed duty.

New staiths are being constructed by the North Eastern Railway Company at West Dunston, about a mile and a half to the west of the older staiths, at Dunston, and on the south bank of the river, opposite Paradise. They extend for some 600yds. along the river front, and provide three places for the shipment of coal. Each will take the largest class of vessels. The shipping places will be furnished with two gravity spouts and one conveyor each. Adjoining these will be formed a tidal basin, 30ft. in depth and 20 acres in area. The contract for the staiths is being carried out by Messrs. Mitchell Bros., Glasgow.

At a meeting held in Bristol on Monday of the council of the Bristol and Gloucestershire Archæological Society, a report of a committee was presented, through Mr. Francis Weare, of excavations which have been made at Druid Stoke, by permission of Mr. Featherstone Witty, for the purposes of examining a cromlech there. Mr. Weare reported at length on the results of the excavations, and it was decided, on the recommendation of the committee, not to take any steps to restore the cromlech to its former position, as there appeared to be some uncertainty as to what that position was. It was stated that an old cobble path had been discovered which was used by pack-horses in going to and from the Passage.

It is feared that the rebuilding of Rowley Regis Parish Church, which was recently destroyed by fire, will have to be postponed, owing to the danger of mining subsidences. The building committee have called in Mr. J. Bailey, a well-known mining engineer in the Black Country, who has intimated that it will be advisable to defer the erection of the church until there is a complete settlement of the ground underneath the site. He is supported in this view by Mr. H. S. Pitt, of the firm of Messrs. H. S. Pitt and Co. Including the insurance money, amounting to £4,450, there is already in the bank £4,874, over £60 more than the accepted tender for erecting the church fabric as it was before the fire, together with the seating and heating.

Works of renewal are about to be carried out on the Forth Bridge, which was designed more than thirty years ago. It has been decided at once to proceed with a trial section, to be followed by a reconstruction from end to end of the bridge. The operations will include the relaying from end to end of part of the floor and the troughs carrying the inner rails in both up and down lines. It is estimated that it will involve 2,500 tons of structural steel for the renewal of troughs and floor from end to end of the bridge. The directors have arranged for the carrying out of the work by the original builders, Sir William Arrol and Company, Ltd., Glasgow, and Messrs. Baker and Hurtzig will be the engineers for the work in association with the engineer-in-chief of the North British Railway Company, Mr. W. A. Fraser.

Building Intelligence.

DUNDEE.—The new engineering laboratories of the University of St. Andrews, at the University College, Dundee, were opened by Sir Alexander B. W. Kennedy, LL.D., F.R.S., on Tuesday. In 1909-10 plans for the new building were prepared by the architects, Messrs. Sir Rowand Anderson and Paul, in conjunction with Professor Gibson. The building, which has been erected at a cost, including equipment, of about £16,000, forms an L-shaped block. The main building, forming the north side of a quadrangle, is of two stories in height, treated in a Domestic phase of Classical design and roofed with a steeply-pitched roof of grey slate. This contains the lecture rooms, drawing offices, library, private rooms, and hydraulic laboratory, with two rooms set apart for a possible future architectural department. The central tower, 80ft. high, accommodates the fan and machinery for the forced ventilation of the building, and also contains a storage tank of 10,000 gallons capacity. In the east wing are the heat engine laboratory and boiler-house, the strength-of-materials laboratory, the cement-testing room, and workshop.

DURHAM.—The old Blue Coat Schools were formally reopened on Thursday last, the 9th inst., by the Marchioness of Londonderry, after remodelling by H. T. Gradon, A.R.I.B.A., of Durham, at a cost of about £4,000, including a row of shops to the street front. Messrs. Jackson and Sons, of Newcastle-on-Tyne, were the contractors. They now give accommodation for 294 boys and 294 girls. The old infants' school is now abolished, and accommodation for infants is arranged for elsewhere.

EDINBURGH. A beginning has just been made with the erection of the south-west tower of St. Mary's Episcopal Cathedral, designed by the late Sir Gilbert Scott, and built between the years 1874 and 1879. Mr. Charles Gilbert Scott, grandson of the original architect, is superintending the present works. The contract price is £5,000, and it is hoped that the spire will be completed in a year. The towers on both sides of the west doorway were constructed up to a height of 62ft. when the cathedral was built. The first stage of the new work will be the belfry, on each side of which there will be a receding double-light open window, with shafts surmounted by a triple arcading. A gable over the buttresses of the tower, and octagon pinnacles at the angles bring the building up to the level of the base of the spire, which, starting from here, rises to a total height of 202ft. -including the 62ft. of the tower formerly erected. About half-way up there is a two-light window on each face; at a higher stage a one-light window, and atop is a vane. Angle rolls run up the whole height of the spire, which horizontally at five different stages is ornamented with a lozenge mould. The central tower and spire of the cathedral is 303ft. in height. Mr. R. M. Searle is the clerk of works.

HEMEL HEMPSTEAD.—At the monthly meeting of the town council of Hemel Hempstead, the sanitary committee reported: "It will be remembered that in February last the council accepted the competitive designs submitted by Messrs. Franklin and Deacon, of Luton, for cottages to be erected in Wood lane, for the housing of the working classes. The committee felt that additions to the accepted plans might be made with advantage, including the provision of baths and the erection of houses of more than one type. Tenders were invited, and on being received it was found that the cost of the building, as then suggested, would be prohibitive—the lowest tender being equal to a cost of £230 per house. It was eventually decided to provide for the erection of 26 houses of the original type. The accommodation provided by the scheme now submitted will consist of a living-room, kitchen, scullery, and three bedrooms. The committee recommend the acceptance of the tender submitted by Mr. Higgs, Northampton, amounting to £1,682, being equal to about £180 per house." It was decided to apply to the Local Government Board for permission to obtain a loan for building the cottages.

IPSWICH.—The new engineering works of the Consolidated Diesel Engine Manufacturers, Ltd., situated on a twenty-acre plot between the Hadleigh and the G.E.R. Yarmouth branch railway at Ipswich, are now completed, and about 300 hands will be employed. Next the Hadleigh road are the offices, a two-storied building having on the ground floor the clerks' room, mail-room, two dining-rooms, and a kitchen, and on the first floor the drawing-rooms, private offices, strong-room, and conference-hall. The works portion include the two foundries, drying ovens, smithy, machine shop, fettling shop, and fitting shop, a separate two-storied building occupied as pattern shop, and pattern stores. The water tower stores 10,000 gallons, and is supplied from an artesian well on the site. As nearly all the workmen live on the opposite or town side of the Gipping, negotiations are in progress for permission to erect a bridge over the river. The works were laid out by Mr. Borner.

MOLD.—The work of restoring the parish church of Mold, in progress for three years, has been completed, and the church was reopened last week. The cost of the work has been £8,000. It has included the releading and refixing of the stained glass in the window in the south aisle near the main entrance. The glass, which is mainly heraldic, dates from the end of the 16th century, and indicates who were the chief benefactors. Emblems and crests of the Derby and Stanley family are plentiful in this window. The porch facing the main entrance has been overhauled, the old folding-doors of deal being removed, and doors of oak substituted. The western tower, which was added to the 15th-century church in 1734, formed the subject of a sketch by Mr. Edward Cratney, of Willington-on-Tyne, published in the BUILDING NEWS for April 12, 1907.

TAMWORTH. — The Countess Ferrers opened on Wednesday week the new buildings of the Tamworth Girls' High School recently erected by the Staffordshire County Council. The school occupies a site in Upper Gungate, commanding a fine view of Hopwas Wood and the neighbouring country. The main building, which provides accommodation for 121 pupils, consists of a single story, and is laid out in the form of the letter E, the assembly-hall occupying the centre. This hall, which is 40ft. by 25ft., has been fitted with apparatus so as to also serve as a gymnasium. There are, besides, five classrooms, a laboratory for teaching chemistry and physics, a combined cookery and dining-room, a cloakroom and lavatory for pupils, also private rooms and lavatories for the staff. Premises for a caretaker have been provided. The buildings are in the Renaissance style, consisting of brickwork relieved by stone dressings, and surmounted by a roof of tiles. The scheme was designed and carried out under the direction of Mr. J. Hutchings, architect to the Staffordshire County Education Committee.

WINCHESTER. The improvements to the interior of Winchester College Chapel, with the exception of a rearrangement of the electric lighting, are almost completed. The walls have been panelled in oak to the height of 13ft., and the whole is crowned with a cornice of carved work. Each panel contains a shield, and those on the south side the arms, badges, or monograms of past wardens are commemorated. The gallery, which was erected at the west end of the chapel a few years ago to provide extra accommodation, has now been completed by the insertion in the four vacant niches of bronze figures of famous Wykehamists who reached episcopal rank. These figures have been executed by Lady Scott, the widow of the Antarctic explorer. Mr. W. D. Caröe, F.S.A., is the architect.

The Birkenhead Corporation have decided to erect a small-pox hospital at Thingwall, at an estimated cost for buildings of £8,000.

Currente Calamo.

Mr. Lloyd George at Bedford on Saturday last contrived to say as little as any man could have said about the intended policy of the Government. He dealt entirely with generalities, and, therefore, easily spoke at large without fear of any criticism of his proposals seriatim. His chief concern seemed the pressing need of the Government for some scheme which shall divert the mind of the country from Marconi scandals and Insurance Act anomalies and the Home Rule block. That may succeed; we do not think it will. If it does, we hope Mr. Lloyd George will not blunder again. The pressing need of the agricultural industries seems to us free trade in land and the removal of the stupid encumbrances of law and custom. If Mr. Lloyd George is going to help the agriculturist as he "helped" the builder by doubling taxes on his chief raw material, we shall not aid agriculture much, or the millions who depend on it for their livelihood.

The only practical point made by Mr. Lloyd George in his great oration of over two hours at Bedford was as to the last Patents Act. In this statute, which was passed when he was at the Board of Trade (where many people think he should and could have remained with much advantage to the country), a section is criticised under which the foreign owner of a British patent must, within a certain time, adequately manufacture the article patented in Great Britain or lose his patent. As this had long been the law in every other European country and in the United States, it was a very easy thing to do, and, of course, the Lords passed it with approval. Such a provision is obviously their protection, as angry Radical faddists have often said. But the clause has done a great deal of good by compelling many German and American patentees especially to manufacture in Great Britain, and this good is growing. It has brought wages to some thousands of English workers. It has also employed architects, surveyors, contractors, builders, etc., who were chosen to build the factories and workshops required, and helped landowners and the rest who sold the ground for these manufacturing purposes.

But it was merely a platform trick to try and compare the monopoly given by a patent to what the Chancellor calls the monopoly of land ownership, for there is no analogy whatever. No one disputes that the land might and should be better used, and labourers better paid and housed. Most of us have been saying so for years. Everyone knows that Free Trade, while good for the majority, was bad for the farmers. To raise agricultural wages would be to lower the numbers at work. To have Land Courts to settle fair rents would be to increase those rents, which now only pay some 2 per cent. on the capital value of the land farmed. The Conservative Housing Bill would have done great good, and brought business to all concerned in the building trades, but it was killed by the Cabinet. The land question is really a matter of economics and finance, of which the Chancellor has plainly proved he knows nothing. For the rest, his speech, delivered through a muzzle, was Limehouse watered down by order, and, as someone has written, much of it was "spite without the sparkle" of former efforts. It has gone out already as a damp squib, and we still await the coming of some statesman who shall treat the land laws economically, and not merely as a subject on which to slang the landlords and sportsmen in order to catch doubtful votes.

The Report (Vol. I., Rural) of the Land Inquiry Committee was published on Tuesday. It covers 300 octavo pages. It insists on the need for improved housing in country districts, maintaining that at least 120,000 new cottages are now needed. It recommends public loans at a minimum rate of interest, and for long periods, and declares that every labourer should have a small piece of land, and that the security of tenure and fair rents should be given small holders by the establishment of a Land Court. "Drastic remedies" in regard to the game laws are, it is stated, called for, and complete security of tenure subject to certain safeguards, is advocated for tenant farmers. State-aided purchase is discussed and adversely reported upon. It is suggested that Land Courts should be established in England and Wales to fix rents and compensation, and to supervise compulsory purchase by public bodies.

Not a word is said about the real reason at the present time for the lack of fit houses and cottages for the people. For that, as we have insisted time and again, Mr. Lloyd George is himself in great part responsible. As Mr. J. Stanwell Birkett, of 4, Arundel-street, Strand, points out in a letter in the *Times* of Wednesday last, at the present time the rise in the cost of building is a far greater difficulty than the cost of the land. Some of Mr. Birkett's facts we have before given. They are worth repeating. A return dealing with the increased cost of school buildings in the country, and quoted in a report of the Lancashire Education Committee, gives the average increase in the cost of building materials during the last two years. The figures show an increase ranging from 14 per cent. for common bricks to 60 per cent. for cast-iron goods, and that the average advance all round is no less than 25 per cent. Two years ago a five-roomed cottage could be built for £200, of which 53 per cent, or £106, represented the cost of the materials; these materials now cost £132 10s., an increase of £26 10s. In a garden city twelve of such cottages would be placed on an acre of land (gross), so that the increase in cost per acre from this cause alone is no less than £318. Under present by-laws forty of such cottages can be placed on an acre, when the increased cost per acre from the same cause amounts to £1,060. In other words, if a landowner now gave his land free the house would cost more than if two years ago he had sold the land at £300 an acre to a garden city company, or at £1,000 an acre to the ordinary speculative builder. What legislation can give us the houses and cottages we all know are wanted, in the face of figures like these?

We congratulate the City of Birmingham on having stopped the Postmaster-General from spoiling all the suburban districts in which he insisted on sticking up his telegraph and telephone poles. The test case was tried last Wednesday and Thursday week before the Birmingham Stipendiary Magistrate, Lord Ilkeston. The Post Office wanted to erect 19 poles in various suburban districts, but the corporation most properly declined to consent, on the ground that property owners have complained of the disfigurement and the depreciation of property caused by the presence of the standards. It was suggested that the wires should be placed underground, but the Postmaster-General, of course, refused to adopt that course, and under the Telegraphs Act a test case was referred to the stipendiary magistrate for decision. After two days' hearing the case was settled by consent, an undertaking being given on behalf of the Postmaster-General to lay underground wires in five cases where overhead wires were likely to detract from the amenities of the districts concerned. We hope every authority concerned will follow Birmingham's example and stand up squarely to the Postmaster-General in regard to this matter. It will take a good many years yet, we suppose, to convince our rulers that the chief duty of the Post Office is not to grind millions into the Treasury yearly, but to treat the public properly and pay its servants fairly.

Public authorities and other bodies who believe that architects' fees are exorbitant will be interested in a communication directed to the editor of the *Brooklyn Eagle* by Mr. Woodruff Leeming, apropos of the commissions to be paid for the proposed New York County Courthouse. Mr. Leeming writes: "The cost to an architect of preparing his drawings and specifications and seeing that they are properly carried out, in offices run on the best business basis, is at least one-half of his commission. This, however, applies only to the general class of building, and not to public and monumental work. The cost is then as high as 75 per cent. of the architect's commission. The United States Government prepared a statement which was submitted to Congress (Senate Document 916, Sixty-second Congress, second session), which gave the average cost of preparing drawings and specifications alone, exclusive of superintendence or any other field expenses, for the years 1905 to 1911, inclusive, to be 6.2 per cent. This was for preparing the drawings for the buildings erected by the United States Government and done by the supervising architect of the Treasury, a man known for his great executive ability, and therefore done with the greatest economy possible. Reports have been submitted by the State Architect of New York showing that the cost to the State for preparing the plans and specifications made in the State Architect's offices exceeds 6 per cent. The cost to the New York Central Railroad for preparing the plans for their new station has exceeded 6 per cent. Therefore, an architect who is able to prepare the plans for a 10,000,000 dollar building at a cost to him of less than 6 per cent. of the total cost of the building must run his office in the most economical manner possible, and take his chance that the work may cost him more than his entire fee."

There are people, of course, who fancy that an architect makes a few sketches taking a few days of his time, and for this work receives an enormous fee. The fact of the matter is that to prepare the plans and carry out the work of a 10,000,000 dollar courthouse will require the services of from twenty to thirty high-priced draughtsmen working for a period of at least five years; will require a large office at a large rental,

and with the most economic administration his work will cost about 400,000 dollars. This will leave him about 200,000 dollars profit, or about 40,000 dollars a year. "What business man," asks Mr. Leeming, "is there who is willing to head a 10,000,000 dollar corporation with a salary of less than 40,000 dollars a year? What corporation is there of this size that pays its counsel less than this amount? Such men, however, receive these salaries without investing any of their own money to obtain it. The architect must invest about 400,000 dollars in actual cash paid out to receive his profit of 200,000 dollars. All of the above has nothing to do with the professional training and skill of the architect, and for which he reasonably expects compensation. He must, therefore, not only invest his own money and run a large business office with a chance of running it at a loss, but he must give his skill in designing, his knowledge of engineering and construction, and his training in sculpture and mural decoration in order that he may obtain his fee."

On the ground that the practice is "unjust and injurious to working journalists, and therefore contrary to the spirit of trade unionism," the finance and general purposes committee of the Institute of Journalists on Tuesday decided to ask the Parliamentary Committee and the executive to use their influence to put a stop to the growing practice of trade-union and Labour members supplying information and contributions to the general Press for payment. How far this practice prevails we do not know; but our readers will remember that more than once lately we have commented on the ridiculously exaggerated statements in the daily Press with regard to the painters' and labourers' disputes, and can guess for themselves by whom they were inspired.

£2 300 has been granted by the Road Board for road improvements in East Denbighshire and £374 for like purposes in the western part of the county. Most of the money will be spent on the main thoroughfare between Wrexham and Bwlchgwyn, which has been rendered into a very bad state, owing to heavy motor traction traffic. The work will include also the extinction of a dangerous corner at Bwlchgwyn.

Nine months ago unsuccessful attempts were made to sell the famous Jezreel's Temple on Chatham Hill, which was originally erected at an enormous cost as the temple of the New and Latter House of Israel. Now it is being converted into a picture palace. It is a cube of about 144ft., and was begun, for it was never really finished, in 1882 by an ex-soldier named White, who proclaimed himself the prophet of a new religion, and adopted the name of James Hershow Jezreel. This man attracted many followers, and a prosperous colony of farms and workshops sprang up around the temple. The object of building the tower was to accommodate 5,000 of the faithful, out of the 144,000 who were to be saved when the end of the world came. Jezreel himself was to live for ever, but managed to die while the great tower was still unfinished, and after £44,000 had been spent upon it.

The Canadian Pacific Railway recently deposited plans for four additional stories to the central portion of the Hotel Vancouver, Vancouver and for the east wing fronting on Granville-street, estimated to cost 1,100,000dol. The estimated outlay on the work of reconstructing the central portion of the hotel, calling for twelve stories, was 800,000dol., so that, with the addition of the work now proposed, the ultimate expenditure will not be far short of 2,000,000dol. According to the plans, the central part of the structure will be sixteen stories in height and the east wing will be eleven stories, with the exception of the centre midway between Georgia-street and the Orpheum Theatre. Here a large banqueting-hall will be provided. The entrance to this hall will be 87ft. by 59ft., and will be from Granville-street. The whole structure will be of reinforced concrete and steel construction, faced with pressed brick.

COMPETITIONS.

BARNSLEY. The special committee of the Barnsley Borough Council are recommending that architects should be invited to submit designs for a new town hall, to cost not more than £20,000. Premiums of £100, £50, and £25 are to be offered for the three best designs.

BRADFORD. -The council has received fifty-eight designs for the working-class dwellings and 50 acres estate scheme at Bradford. The date for sending in was extended from the 4th inst to Saturday last, the 11th inst. Mr. Henry T. Hare, F.R.I.B.A., is the assessor.

FOLKESTONE.—Some sixty architects have applied to the town clerk of Folkestone for the conditions of the competition for designs for a band pavilion which the corporation propose to erect on the Leas. The last day for sending in designs is November 29.

HIGH WYCOMBE.—This town-planning competition will be determined on Tuesday next, the 21st inst., as the adjudicators have sent in their award, and the envelopes containing the names and addresses of the architects will be opened at this meeting of the council, the plans being on private view for the inspection of the members. The public will be admitted to view the drawings on Wednesday, the 22nd, and Thursday, 23rd, at the public offices, between the hours of 11 a.m. and 7 p.m. The premiums are £25, £10, and £5 respectively.

OSWALDTWISTLE. — Mr. W. H. Duncan, F.R.I.B.A., of Butterworth and Duncan, architects, Rochdale, is acting as assessor in the Carnegie Library Competition, Oswaldtwistle.

NEW BOARD OF TRADE OFFICES COMPETITION.—We have received a copy of the questions and answers just issued to architects in this competition, and the queries and replies number 107, though, of course, several items rank as repeats and are of very minor importance. The complex requirements of a big scheme such as this are necessarily manifold; but in this instance are really more involved than usual, owing to the fact that only about half the entire project will be erected in the first case, the existing premises on the site being retained in the meantime, and, besides, the crypt, to which much importance is attached, is to be permanently preserved. Its top level is some 3ft. above the normal specified ground floor for the new buildings; besides which, no doubt, this crypt comes very awkwardly on the land, set as it is towards the corner on the N.W. side, where it closely approaches the building line, moreover it will necessitate at least six steps up and down, thus interfering badly with a continuity of the lay-out. The Replies leave no doubt as to the principal apartments and big library being needed in the first portion to be erected, and, consequently, the main entrance must be provided at the outset, whereas the roadway behind the Chapel Royal, and more particularly to the rear of the United Service Institution, as well as Gwydyr House, is comparatively restricted. The façade overlooking Montague House faces a relatively narrow private road, which is to be enclosed by permanent gates. Nevertheless Reply 16 permits an entry being located on this front; but several doorways, it is said, are to be avoided, while in any event the principal entrance is not to occur on the Embankment front. The two story new part of Gwydyr House will probably be removed; but the house itself in Whitehall is to stay, and so it will further hide the new elevation of the Public Offices on the west and also curtail the width of the roadway behind, as already alluded to. It would serve no practical object by going further into the details of these questions and answers just now, and, of course, the copy supplied at this stage to the Press is not intended for criticism; but we may take the opportunity of saying that the furnishing of such information to the professional journals beforehand is always highly desirable, in order to insure more accurate comments being ultimately made, when the competition plans are reviewed. Some competition authorities are very chary in affording facilities to the Press, and on occasion decline to even supply copies of their conditions, preferring to surround the business with mystery, instead of treating public competitions in an open-handed manner. Thus suspicion is fostered quite needlessly, unless in instances where it so happens things are not so straightforward as they ought to be.

CHIPS.

Mr. James Vine, of The Elms, Elm-avenue, Eastbourne, builder, who died on June 25, has left £43,940.

A stained-glass window in three lights, representing incidents in the Resurrection of our Lord, has been placed in the east wall of the parish church of East Lopham, Norfolk, as a memorial, and was dedicated on Friday by the Bishop of Norwich.

The trustees of the estate of the late Mr. Edwin Francis Gyde, who died at Ebley House, Stroud, in 1894, and left £100,000 for the building and endowment of almshouses and an orphanage for blind and deaf and dumb children at Painswick, have lost no time in undertaking the work of carrying out the wishes of the testator. The ground for the new orphanage is marked out ready for building operations, the site being on the Gloucester-road, Painswick, and above the almost completed ten almshouses, which were commenced several months ago.

The Mont d'Or tunnel, 3¾ miles long, on the Frasne-Vallorbe line, in the French Jura, which is now under construction, was pierced last week. The tunnel has cost about £1,480,000, and is one of four to be pierced on this railway, which will be about 16 miles in length. It will unite Frasne on the Dijon-Pontarlier line in France, and Vallorbe on the Simplon line, in Switzerland. At one point, the new railway is carried upon an embankment constructed in ground so marshy, that even when soundings to a depth of 230ft. were taken no firm bottom was found.

The new bridge across the river Suir at Waterford, constructed for the corporation, has now been completed. The former wooden toll bridge was purchased by the corporation for an amount fixed by arbitration at £63,885. In the new bridge, which is toll-free, the distance from shore to shore is about 700ft., and this is covered by reinforced concrete spans of 40ft. on either side of a clear 80ft. opening span constructed in steel. The abutment spans vary from 10ft. to 12ft., and are designed as cantilevers, so as not to be dependent on the old masonry abutments of the demolished wooden bridge. The opening span is built on the cantilevered Schertzer principle.

The extensions of the docks at Buenos Aires were begun about a year ago, and the construction of the concrete walls and piers inside thet dam surrounding the site of the first basin will be begun shortly. This basin will be 1,130ft. in length, and over 450ft. wide, and will accommodate five large steamers. The dam to the second basin will be begun in the near future, and will accommodate seven of the largest vessels trading with the port. The first portion of the new breakwater between the basins and the river is nearing completion; it is 4,250ft. in length. The first two-thirds of the extension to the present breakwater has been finished, and the remaining third is in progress.

The Cambridge University Press has published the first of a series of forestry bulletins by Mr. E. R. Burdon, investigator in timber, and Mr. A. P. Long, assistant investigator. The first number deals with the production and utilisation in Great Britain of Scots pine, a tree which gives comparatively quick returns, and is especially suited for certain classes of poor soil where few other trees will grow. Many extensive areas of derelict land exist where Scots pine would probably prove the most suitable, if not the only suitable, tree to plant. Large areas of such land are to be found within easy reach of Cambridge.

The British consul at Leghorn reports that the new inner dock is practically finished, discharging having already taken place at the southern quay, while the northern quay is to be ready for delivery at the end of this year. The dock has a length of 1,476ft., a width of 262ft., and a depth of 28ft., and is approached from the Mandraccio basin. The work in connection with the new supplementary port is well under way. The new harbour is situated to the north of the existing port, and exactly faces the site of the old Porto Pisamo, which was long ago left high and dry by the receding of the sea. The depth of the new harbour will be 29ft. 6in., and the date of its completion is given as July, 1918.

Our Illustrations.

THE TECHNICAL COLLEGE AND NEW OFFICES SOUTH OF STATE LIBRARY, BARODA, INDIA.

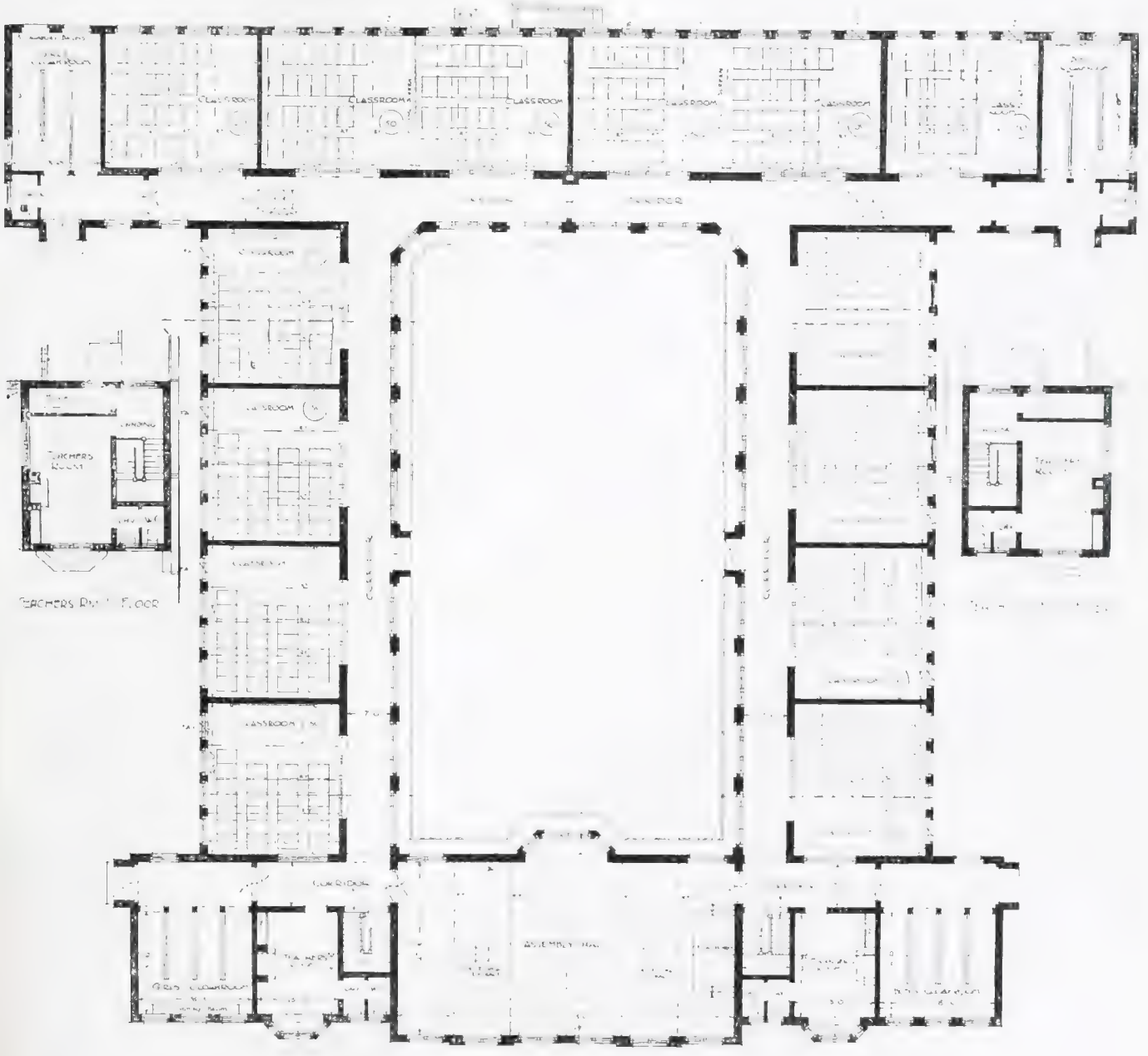
Mr. Alfred H. Coyle, of Baroda, is the architect of both these extensive Indian buildings, of which key-plans are attached to the accompanying views, illustrated from the pair of water-colour originals exhibited at the Royal Academy this year. The Technical College has, we understand, been already completed, and the Library Offices are about to be commenced. We have not yet received any further particulars of either of these works.

NATIONAL SILVER MEDAL DESIGN FOR A PAINTED FRIEZE, "ENGINEERING LABOUR," BY MR. GEORGE NOBLE.

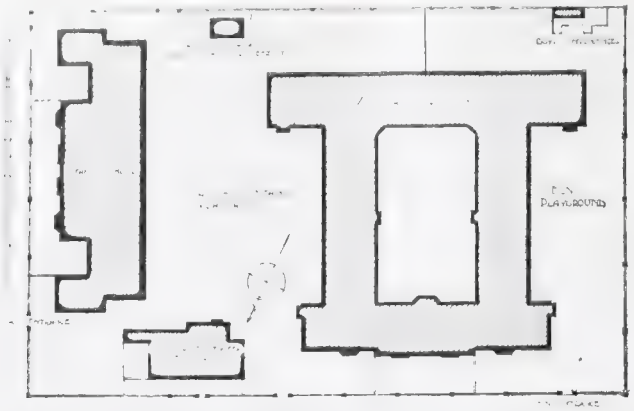
The several incidents included in the subjects of this Silver Medal painted frieze were studied in a large engineering works yard, to illustrate and realise decoratively the slow and heavy work of the engineer's labourer in moving material from one department to another; such, for example, as the gang or team of men handling a trolley load of iron moulding-boxes from the foundry or taking steel-girder joists to another shop. This first work is shown by the uppermost section of the frieze reproduced on our plate. The central subject is devoted to a set of labourers carrying a long length of shafting from the iron store to the lathe. A group of platelayers, seen on the line near the works, comes below, to the right of the sheet, and the other panel shows the ironmoulder running his casting. Without indulging in too naturalesque a manner of treatment on the one hand, or adopting a rigid conventionalism on the other, the work of Mr. George Noble, the author of this capital scheme, is instinct with the true qualities of decoration adapted to contemporary application and at the same time dealing with everyday transactions. The original design gains much by the use of subdued tintings broadly handled, and the incidents chosen for the drawings are so directly treated that they really need no further description.

ST. JOHN'S PARISH CHURCH, WOKING.

This drawing, which was exhibited at the Royal Academy this year, shows additions which are about to be started to the east end of the church. The existing building stands on a small hill, and is surrounded by a churchyard. The space available for enlargement was very restricted, and several graves exist near to the old church. It has been found necessary to pull down the whole of the chancel and buildings east of the nave and to rebuild the chancel, vestries, organ-chamber, and basement, to obtain the requisite accommodation. The work now to be done provides a tower for bells and a ringing chamber. This has been placed over the chancel, being the only available space. The extension will give 516 sittings and a good organ-chamber, two vestries, heating chamber, belfry and ringing chamber, and one new porch. The materials to be used will be as follows: Externally the walls will be of Bargate stone, with Bath stone dressings and windows. The roof will be of thick green slates. Internally the stone dressings will be carried through to show, and the remainder of the walls plastered with rough-sanded plastering. The roofs and woodwork will be of oak left in its natural colour. New oak clergy- and choir-stalls and oak seats in the nave will be provided. The floors in the nave will be lowered and laid down in wood-block, having the passageways of the aisles laid with large marble squares.



COUNTY COUNCIL SCHOOLS, ASHINGTON HIRST, NORTHUMBERLAND.
Mr. G. Topham Forrest, Licentiate R.I.B.A., Architect.

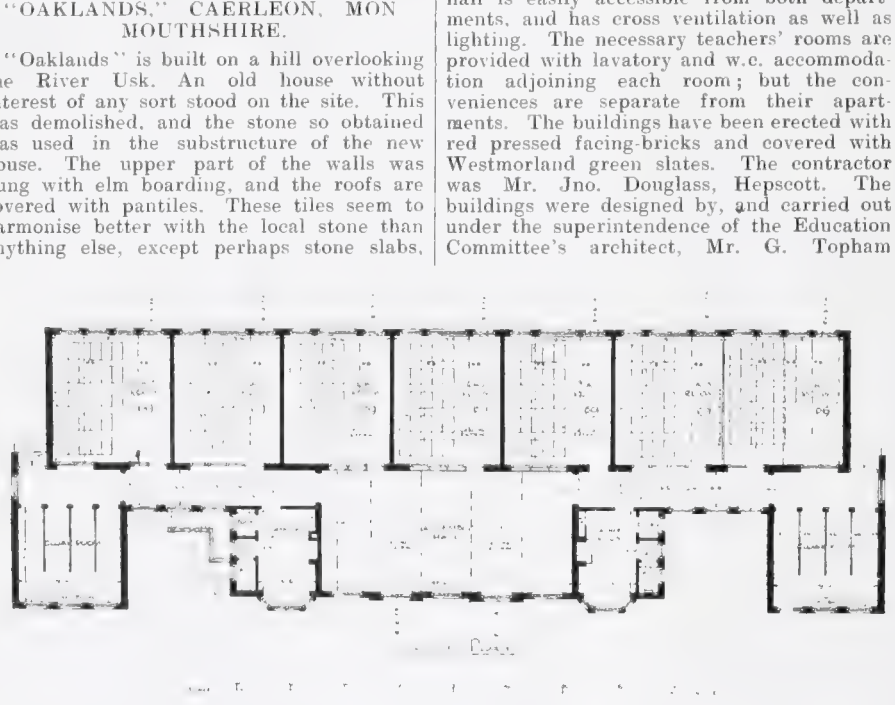


COUNTY COUNCIL SCHOOLS, ASHINGTON HIRST, NORTHUMBERLAND: BLOCK PLAN.
Mr. G. Topham Forrest, Licentiate R.I.B.A., Architect.

Similar marble squares will be used in the chancel, with York stone steps. Messrs. Tubbs, Messer, and Poulter, of Woking and Bexhill, are the architects.

"OAKLANDS," CAERLEON, MON MOUTHSHIRE.

"Oaklands" is built on a hill overlooking the River Usk. An old house without interest of any sort stood on the site. This was demolished, and the stone so obtained was used in the substructure of the new house. The upper part of the walls was hung with elm boarding, and the roofs are covered with pantiles. These tiles seem to harmonise better with the local stone than anything else, except perhaps stone slabs,



COUNTY COUNCIL SCHOOLS, ASHINGTON HIRST, NORTHUMBERLAND.
Mr. G. Topham Forrest, Licentiate R.I.B.A., Architect.

which in this case it was not possible to use. Compactness of arrangement was aimed at, as will be seen by the plan given on the drawing, which was exhibited in the Royal Academy this year. Both the house and garden were designed by Mr. O. P. Milne, architect, of London.

COUNTY COUNCIL SCHOOLS, ASHINGTON HIRST, NORTHUMBERLAND.

These schools were opened recently by Sir Francis Blake, Bart., chairman of the Northumberland Education Committee. The buildings form an interesting example of the quadrangle principle, as adapted to elementary schools, and are the first of this kind erected in the North of England. The school provides accommodation for 700 mixed and 362 infant children, and occupies a site of nearly two acres, as shown by the block plan. A feature of the arrangement is the shape of the classrooms, which have been designed so that the distance between the window walls and the walls opposite to the same has been reduced from the customary 24ft. to 21ft., thus insuring considerably more light to the back rows of desks than is afforded in the earlier type of classrooms of greater width. The central hall is common to both departments, in accordance with Section A, Rule 2, of the Board of Education regulations for the planning of schools. The hall is easily accessible from both departments, and has cross ventilation as well as lighting. The necessary teachers' rooms are provided with lavatory and w.c. accommodation adjoining each room; but the conveniences are separate from their apartments. The buildings have been erected with red pressed facing-bricks and covered with Westmorland green slates. The contractor was Mr. Jno. Douglass, Hepscott. The buildings were designed by, and carried out under the superintendence of the Education Committee's architect, Mr. G. Topham Forrest, Licentiate R.I.B.A. Mr. J. P. Bell, of Newbiggin, acted as clerk of works.

BUSINESS PREMISES, OXFORD STREET, W.

This new building immediately adjoins Frascati's Restaurant in Oxford-street, W. The erection was carried out by Messrs. Leslie and Co., the builders. The façade is entirely in Portland stone, and the building is fireproof throughout. It comprises shops on the ground floor, an extensive showroom on the first floor, and offices occupy the upper part of the premises. The architects are Messrs. Henry Metcalf and Thomas R. Greig, of Kingsway, W.C.

The following candidates have satisfied the examiners of the University of Oxford for the diploma in Forestry (Part II.): M. M. Ali Beg, non-Collegiate; E. W. Carroll, B.A., Hertford College; H. M. Gardner, B.A., Merton College; G. G. King, Wadham College; W. S. Shepherd, Trinity College; H. Trotter, St. John's College. The following candidates satisfied the examiners in Valuation, Management, Protection, Utilisation, and Administration (Forestry, Part II.): R. Dhanakoti, non-Collegiate; A. E. Eden, New College; D. L. Sathé, B.A., Lincoln College; C. E. Simmons, St. John's College.

STATUES, MEMORIALS, &c.

GENEVA.—The Protestant Reformers' Monument at Geneva, which is being executed at a cost of £32,000, is approaching completion. The background of the memorial is an immense wall, while the immediate foreground is a promenade, in front of which are some fine trees. The central group consists of the figures of the four chief Reformers—Calvin and Knox, and Farel and Théodore, of Beza. The figures on each side of the central group of Reformers are those of Gaspard de Coligny, William the Silent, Oliver Cromwell, Roger Williams, Frederick William the great Elector, and Etienne Bocskay, Prince of Transylvania. Besides these side figures there are eight bas-reliefs, one representing Knox's first sermon before the Court of Mary Stuart. All the sculptures are being executed by two French Roman Catholic sculptors, MM. Paul Landowski and Henry Bouchard, neither of whom is yet forty, while the designers of the monument are all Swiss: MM. Jean Taillens, Charles Dubois, Alphonse Laverriere, and Eugène Monod—all of Lausanne and district. Neither Luther nor Zwingli are to be commemorated by statues, but merely by mural inscriptions, as will also be the case with the precursors of the Reformation: John Huss, John Wickliff, and Valdo.

Wakefield House, in Cheapside and Friday-street, E.C., which has been rebuilt from plans by Mr. T. H. Smith, has just been completed. It is five stories in height, and has been built by Messrs. George Trollope and Sons and Colls and Sons, Ltd.

Damage estimated at £3,000 was caused to machinery, buildings, and stock, on Wednesday morning by a fire discovered just after two o'clock at the sawmills of Messrs. Gwilt, timber merchants, Loampit-vale, Lewisham. The fire is attributed to the overheating of the boiler.

A statue by M. Jean Boucher, of Paris, of Victor Hugo, is to be erected in Guernsey, near the memorial to Sir Godfrey Carey, and will be unveiled in June next by President Poincaré. The French Government is defraying the cost of the statue, about £1,200.

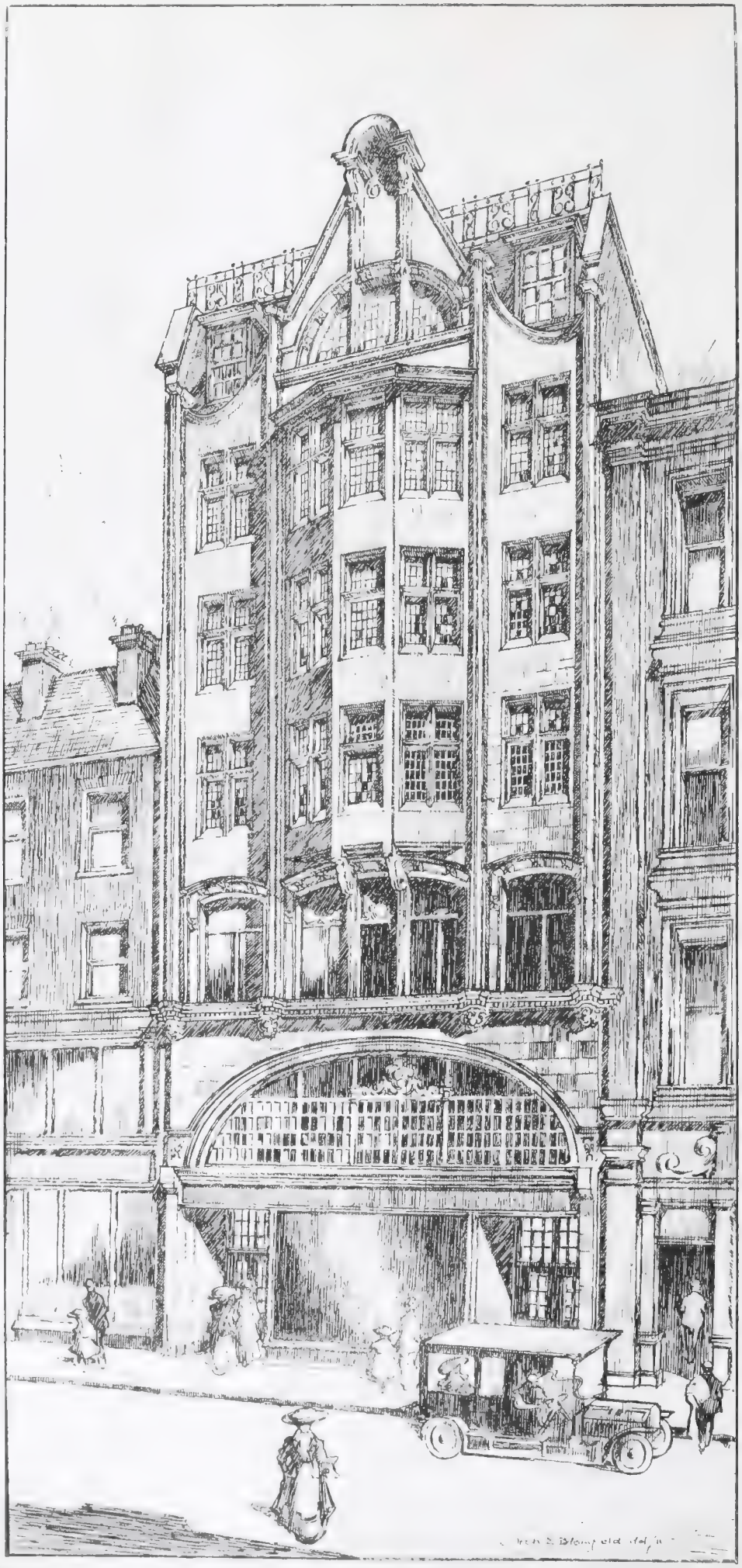
Colonel James Gore Booth, R.E., died at his residence, Artarman, near Helensburg, on Wednesday, in his 74th year. He was instructor of fortifications at Woolwich for seven years, and carried out important improvements at Edinburgh Castle. He held the appointment of consulting engineer to the Secretary for Scotland.

An imposing building of eight stories is to be erected in Buckingham-gate, S.W., adjoining the fine building of the National Insurance Commissioners, of which Messrs. Palgrave and Co. were the architects. The new building, by the same architects, is to be built for another Government Department, and will follow somewhat the same lines in elevation as the adjoining building.

The Longtown (Cumberland) Rural District Council have for some time had under consideration the provision of a satisfactory water supply for the district of Bolton Fell and Moss End. After inviting applications from engineers, it was decided, at their meeting on Tuesday last, to instruct Messrs. Taylor and Wallin, of Cathedral Buildings, Newcastle-upon-Tyne, to make a survey of the above district and report fully upon the matter.

The Knowle Picture House is the latest addition to the places of amusement in Bristol. It has been erected according to plans prepared by Mr. W. H. Watkins, F.R.I.B.A., Clare-street, Bristol, and is situated on the former site of Nos. 109, 111, and part of 113, Wells-road. The building, which was opened on Saturday, is a structure of brick and stone, having fireproof floors throughout. The front elevation has been executed in Bath stone, the design being Renaissance in style. The auditorium is 32ft. by 30ft., and accommodation is provided on the ground floor for about 450 persons.

The north-western corner block of the Savoy, having a main frontage in the Strand adjacent to the building which the late Edward M. Barry, R.A., designed for the Art Union of London some forty years ago, has been taken by the Government of Western Australia, and Messrs. John Wm. Simpson and Ayrton, the well-known architects, have been engaged by the Colonial Government to convert these corner premises into their head London offices. Light is obtained not only on the two street frontages, but also towards the south, overlooking the Chapel Royal burial-ground. These changes will add to the architectural interest of the Strand, and marbles will be employed for the ground-floor façade.



BUSINESS PREMISES, OXFORD STREET, W.—Messrs. Metcalf and Greig, Architects.

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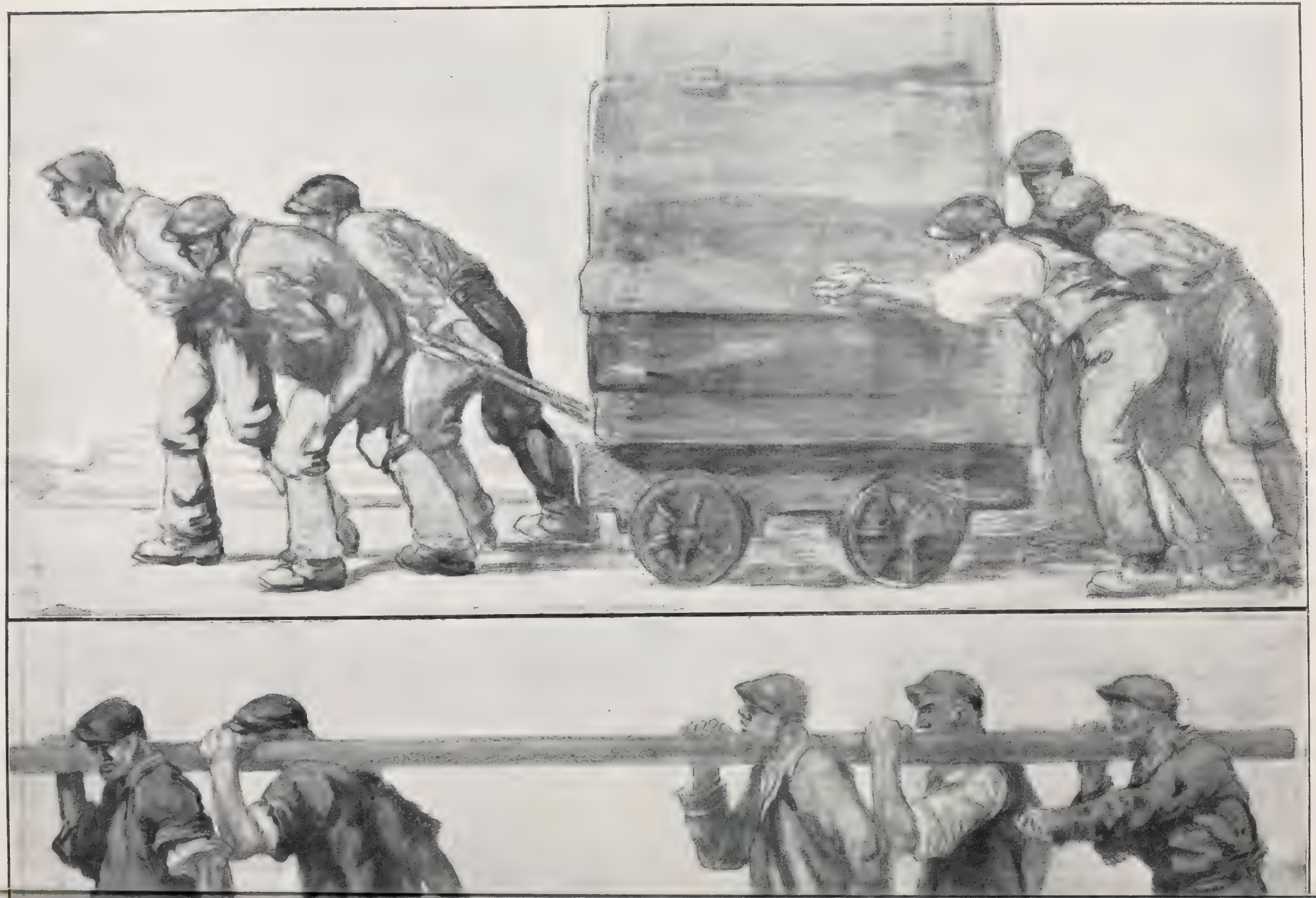
ST. JOHN'S CHURCH, WOKING.—Messrs. TUBBS, MESSER, and POULTER, Architects.



"OAKLANDS," CAERLEON, MONMOUTHSHIRE. Mr. Oswald P. Milne, F.R.I.B.A., Architect.

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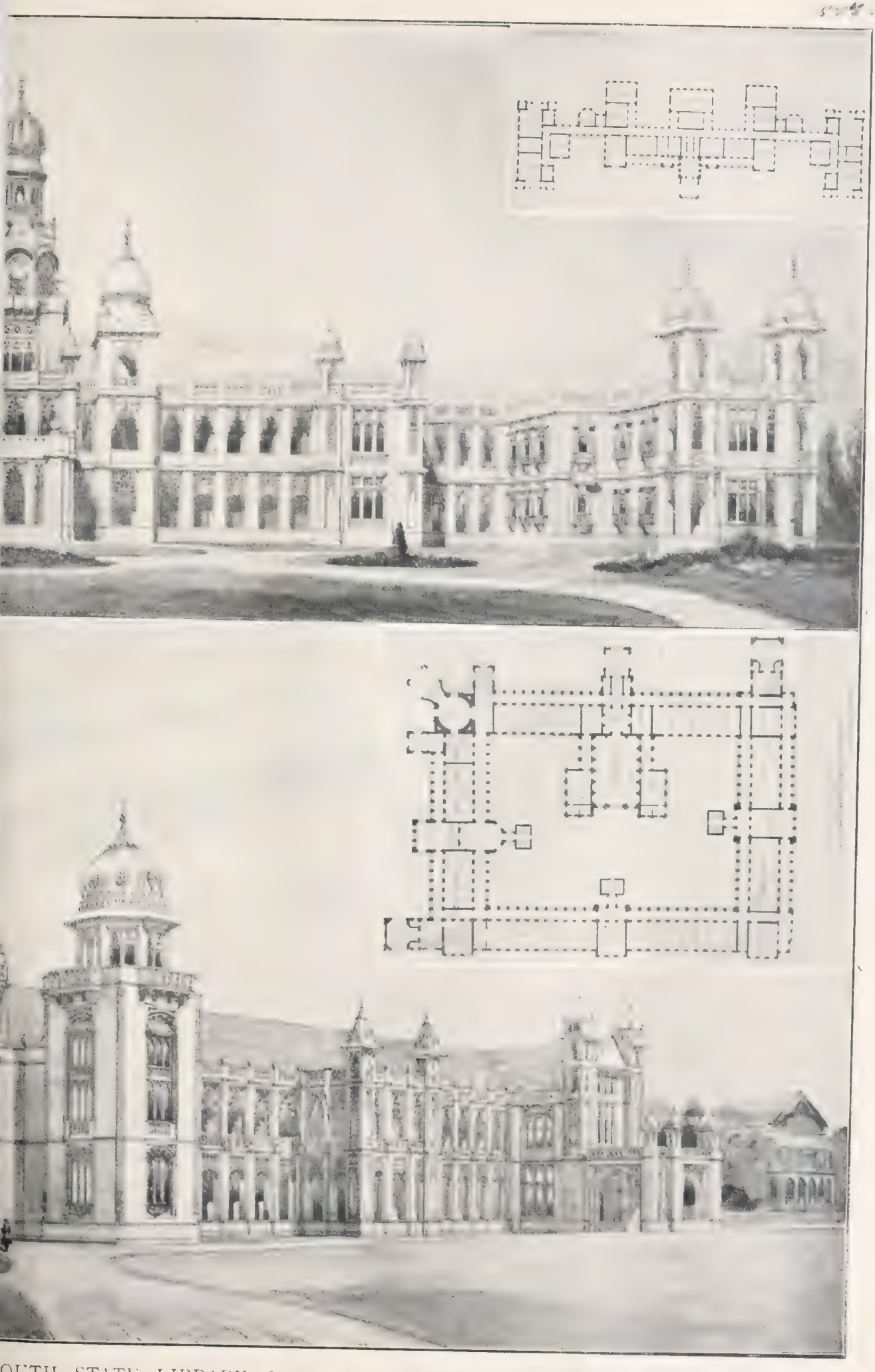


NATIONAL SILVER MEDAL DESIGN FOR A PAINTED FRIEZE: "ENGINEERING LABOUR." By Mr. George Noble.

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THE TECHNICAL COLLEGE, BARODA, AND THE NEW OFFICES



OUTH STATE LIBRARY, BARODA.—Mr. ALFRED H. COYLE, Architect.

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Photo. T. Lewis.

COUNTY COUNCIL SCHOOLS, ASHINGTON HIRST, NORTHUMBERLAND

Mr. C. Topham Forrest, Licentiate R.I.B.A., Architect

PROFESSIONAL AND TRADE SOCIETIES.

ARCHÆOLOGISTS AT ST. ALBANS. Mr. Charles H. Ashdown conducted a visit to St. Albans on Saturday of the members of the London and Middlesex Archæological Society. The cathedral, Mr. Ashdown remarked, might not be satisfactory outside, but was fairly so within. Some of the Norman work in the edifice dated from 1077. The reason the frescoes appeared so fresh was that for three centuries they were protected under whitewash. Mr. Ashdown told the story of a workman who, losing his balance, drew his hand roughly along the ceiling and rubbed off some of the whitewash, and by this means disclosed a magnificent series of Mediæval paintings dating from the 14th century. They represented the arms of the relatives of Edward III. The greatest treasure within the cathedral was the shrine of St. Alban. Under Mr. Ashdown's guidance, the members afterwards inspected the great gatehouse of the abbey; the "Fighting Cocks," said to be the oldest inhabited hostelry in England; the remains of the British and Roman city of Verulamium; the clock-tower; and St. Michael's Church, much restored by Lord Grimthorpe, but still containing the grave of, and a monument to, Francis Bacon.

BRISTOL SOCIETY OF ARCHITECTS.—The opening meeting of the session was held on Monday evening at Messrs. Fortts, Ltd., No. 6, Royal Promenade, Clifton. The meeting was the occasion of a presentation of a badge of office by Sir Frank W. Wills, F.R.I.B.A., ex-Lord Mayor of Bristol, a former president of the society. In the course of his remarks, Sir Frank Wills urged the younger members to adorn a noble art by avoiding everything degrading, by integrity of conduct, and by encouraging only a manly and honourable rivalry. In asking the society's acceptance of the badge, Sir Frank pointed out that the majority of the societies allied to the Royal Institute of British Architects now possessed this insignia of office; further, that the Bristol Society was held in great esteem by the Royal Institute of British Architects as one that was doing excellent work in the provinces. The president (Mr. G. H. Oatley, F.R.I.B.A.) having been adorned with the emblem of office, thanked the donor for this latest expression of interest. The jewel, which is in the form of an ellipse with a gadrooned moulded frame enriched with architectural symbols, is of gold, with a centre of enamelled work containing the city arms, and the inscriptions: "The Bristol Society of Architects," "Allied to the Royal Institute of British Architects." Two links of the chain contain the names of past presidents, and amongst these appear Messrs. W. L. Bernard, Frank W. Wills, G. H. Oatley, Mowbray A. Green (Bath), J. Foster Wood, and the late Joseph Wood and H. Dare Bryan. During the evening a musical programme was rendered.

LIVERPOOL MASTER BUILDERS' ASSOCIATION.—At the annual meeting of the Liverpool Master Builders' Association, held on Monday, Mr. H. E. Cubley was elected president for the ensuing year, in succession to Mr. Thomas Rimmer. The past year, it was stated, had been a strenuous one, owing to the prolonged dispute between the bricklayers and plasterers, and a feeling of satisfaction was expressed that the trouble had now been satisfactorily ended. There had been the abnormal number of 154 meetings during the year, and in recognition of his services, Mr. Rimmer, the retiring president, was presented with a bound volume of the minutes. This was a departure in the history of the association, which the ex-president suitably acknowledged.

ROYAL ARCHITECTURAL INSTITUTE OF CANADA.—The sixth annual convention of the Royal Architectural Institute of Canada was held in Calgary on September 15 and 16. The meetings were presided over by Mr. J. H. G. Russell, of Winnipeg, President of the organisation. The freedom of the city and a hearty welcome were extended to the visitors by Alderman W. J. Tregillus, the Acting Mayor. Mr. Roland W. Lines, of Edmonton, as president of the Alberta Association, in a brief speech, made the visitors welcome, and at the same time gave a short résumé of the business. Mr. R. A. Brocklebank, president of the Calgary Builders' Exchange, extended a cordial invitation to the Institute to be the guests of the Builders' Exchange at a "smoker." The reports of the secretary (Mr. Alcide Chausse, of Montreal) and of the treasurer (Mr. John W. H. Watts, of Ottawa) showed the Institute to be in an excellent financial condition, with a total membership of 558, of whom 491 are active members by virtue of being members of provincial associations associated with the Institute. The principal business was the consideration of certain amendments to the by-laws, together with a proposed code of ethics, a schedule of minimum fees, and regulations governing competitions. A lecture on "Cement and Concrete," by Professor Brydone-Jack, of the Engineering School of the University of Manitoba, occupied the main portion of the first afternoon. The most radical change in the by-laws of the Institute as adopted was that changing the method of paying dues to require each provincial association to pay in to the treasurer the sum of two dollars for each accredited member. Another change was that which requires the election of other than active members to be unanimous by letter ballot of the Council. In the matter of the code of ethics and the rules governing competitions, the President was directed to name a committee to deal with the proposed code and rules presented to the convention before final action should be taken. By unanimous vote the convention rejected the schedule of fees proposed, at the same time voting to revert to the schedule formerly in effect. The election of officers and members of Council for the coming year resulted in the re-election of Mr. Russell as President, and of Messrs. Chausse and Watts as secretary and treasurer respectively, and of Messrs. Roland W. Lines (of Edmonton) and M. Ouillette (of Quebec) as vice-presidents. The members of Council from Alberta are Mr. G. M. Lang (of Calgary), Mr. Jas. Henderson, and Mr. Roland W. Lines (of Edmonton). The next place of meeting will be the City of Quebec, in 1914. On the evening of the 15th the sixth annual banquet of the Institute was held in the Alexandra Hotel, with the President (Mr. Russell) as toastmaster. Those responding, among others, were Professor Brydone-Jack, of the University of Manitoba; Mr. H. A. Sylvester, Superintendent of Buildings for the City of Calgary; Dr. Tory, President of the University of Alberta; and Sir Gilbert Parker, M.P., the Canadian author. On Tuesday, September 16, the members were guests of the Alberta Association at a luncheon served at the estate of Mr. John Hextall, on the outskirts of the city, in Bowness Park, one of Calgary's beauty spots. About sixty were present, following a tour about the city.

ROYAL TECHNICAL COLLEGE. ARCHITECTURAL CRAFTSMEN'S SOCIETY, GLASGOW.—The second meeting of the session in connection with the Royal Technical College, Architectural Craftsmen's Society, Glasgow, was held on Friday evening, October 10, Mr. T. G. Gilmour (president) in the chair. Mr. Alex. Gardner, F.A., delivered a lecture entitled "The City Churches of Glasgow." He dealt with the nine churches controlled by the corporation, who, he said, collected all the seat rents, and were responsible for the stipends and other expenses. He traced the origin and followed up the history of each. The lecture was illustrated by lantern-slides, which included plans of old Glasgow and a view of Glasgow Cathedral as it was before the western towers were removed.

ROYAL COMMISSION ON ANCIENT MONUMENTS OF SCOTLAND.—A meeting of the Royal Commission on the Ancient Monuments of Scotland was held at 15, Queen-street, Edinburgh, on Friday, Sir Herbert Maxwell, Bart., chairman of the commission, presiding. The proof of the completed inventory of monuments in the Stewartry of Kirkcudbright, which is to be issued shortly, was laid on the table. Mr. W. H. Mackenzie, the secretary, reported that the revised inventory of the monuments of Berwickshire was in an advanced state, and that its publication would follow the inventory of the Stewartry. A report was submitted on the survey of the monuments in East Lothian, which had been completed, and it was further reported that the survey of the prehistoric monuments in Mid-Lothian had been completed this summer. The commissioners propose to overtake next year the architectural survey of Mid-Lothian, and to commence the survey of the archæological remains of the Western Isles. There were laid before the meeting reports by Dr. Ross on the "Cannon Ball" house, Edinburgh; on Comrie Castle, in Perthshire; and on Ard Tornish and Kinlochaline Castles, in Argyllshire. Communications were submitted with reference to the conditions of the following ancient buildings:—Inverkip Tower, Gilbertfield Castle, Lanarkshire; and the old church of Eve, Stornoway.

THE SURVEYORS' INSTITUTION.—Subject to any alteration necessitated by the discussion having to be carried over to a second meeting, the following papers will be read on the dates indicated:—Nov. 10, 1913, "The Opening Address," by the president, Mr. W. Edwd. Woolley; Nov. 24, "Some Geological Aspects of Roadmaking," by Mr. W. G. Fearndale, M.A., Sorby Professor of Geology, Sheffield University; Dec. 15, "Modern Science and Modern Agriculture," by Professor Ainsworth Davies, M.A., Principal of the Royal Agricultural College; Jan. 12, 1914, "The Law of Dilapidations," by Mr. Graham Mould, Associate, barrister-at-law; Jan. 26, "Measuring and Quantity Surveying," by Mr. George Corderoy, Fellow.

SHEFFIELD SOCIETY OF ARCHITECTS.—At the opening monthly meeting of the new session in connection with the Sheffield Society of Architects and Surveyors, on October 9, the president (Mr. A. F. Watson, F.R.I.B.A.), in the course of his address, referred to the loss the society and the city generally had sustained through the deaths of Mr. W. H. Lancashire and Mr. J. D. Webster. The society had now a total membership of 117, including lay members and honorary members. Referring to the education of the younger members, the president said the present rising generation no doubt had many more attractions than was the case in the young days of their older professional brethren to tempt them to shirk giving up their half-holidays and the long-lighted evenings to sketching. Let them remember, however, that it was a grand thing to be well enough up in their profession to be fully competent to design and carry out an important edifice when the opportunity occurred for them to be entrusted with such a work. The Town-Planning Act was now in force in Sheffield, and he hoped good would come of it. Much care was required in its administration, however, or great loss and hardship would fall on owners of property, and loss would be entailed to the city generally. The new building by-laws for the city had at last been approved by the corporation, after years of consideration; but already difficulties had arisen in connection with their administration, and some of the clauses were already under consideration with a view to their amendment. "I often think," said Mr. Watson, "that if many officials would pay more attention to the defective materials used in the construction of buildings, more good would be done to the community at large than by hampering work which clients intend executing in the best manner and the most modern type of construction possible, and of which some of our so-called inspectors have little or no knowledge." With regard to the Finance Act, which had played such havoc with the building trade, it remained to be seen what the Chancellor of the Exchequer was going to do to lift the burden from the builders' backs, the incidence of which Mr. Lloyd George had hitherto so persistently denied. The Land Duties Act continued to give the greatest annoyance to owners and agents,

and many failed to see what good would come of it, for no matter what value was put on land, if there were no buyers—which was too frequently the case at present—the assessed value would not help anyone but the army of officials, who no doubt had often a very difficult task to perform. A vote of thanks was accorded the president for his address.

The salary of Mr. Woodisse, highway surveyor to the Shardlow Rural District Council, has been increased to £250, rising to £300, per annum.

The Osram Lamp Works, Brook Green-road, Hammersmith, are about to be enlarged by the erection of additional stores. The architects are Messrs. J. Salmon Quilter and Son, of London.

The late Mr. George Tinworth (70), 8, Maze-road, Kew, Surrey, sculptor and modellist, for over forty-five years employed at Doulton's Royal Pottery Works at Lambeth, left £549.

At Rothesay improvements are to be carried out at the corporation gasworks at an estimated outlay of £19,650. Of this £10,000 is allotted for vertical retorts, and £7,700 for a new gasholder.

At Britford Church, on Sunday, a chancel screen of oak, Perpendicular in style, was dedicated, and also electric fittings. The screen was the work of Messrs. Harry Hems and Sons, of Exeter.

The well-known riverside estate known as Ditton House is to be developed, and artistic villas and bungalows are to be erected thereon. Messrs. Palgrave and Co. are the architects for the developments.

At a largely attended meeting of Convocation of the University of London held on Tuesday, Sir Edward Busk presiding, an instruction was carried to the Senate to negotiate for a fitting site for the University.

A Local Government Board inquiry will be held at Poole, Dorset, on Tuesday next into an application of the corporation for sanction to a loan of £11,835 for street-improvement works in High-street and Towngate-street.

At Croydon, yesterday (Thursday), Mr. H. Shelford Bidwell, an inspector under the Local Government Board, conducted an inquiry into an application from the corporation for sanction to borrow £97,550 for works of water supply and town's water drainage.

The urban district council of Willesden have referred to a sub-committee the question of the extension of the municipal offices. Two schemes, estimated to cost respectively £22,000 and £29,000, have been prepared by Mr. P. Claude Robson, the surveyor to the council.

Sir Aston Webb has now completed the work of the new reredos at Harrow Parish Church; but the altar-rail has still to be provided. The reredos has been erected, by subscription, to the memory of William Oxenham Hewlett, a Master in Chancery and a distinguished Harrovian, and to his father, Dr. Thomas Hewlett, surgeon to Harrow School.

The new Territorial drill-hall in Mainridge, Boston, erected by the Lincolnshire Territorial Force Association, at a cost of £1,800, for the C Company, 4th Battalion Lincolnshire Regiment, was opened by Major-General Bethune, C.V.O., C.B., on October 2. The hall has been erected by Messrs. J. W. Pinder and Son, of Boston, and Messrs. Scorer and Gamble, of Lincoln, were the architects.

The city council of Carlisle agreed on Monday to accept an offer made by Mr. Robert Dalton to sell to the city 743 square yards of land for £350, for the purpose of constructing a cross-street from Queen-street to Broad Guards, in the Caldewgate district, with the object of enabling the council to demolish a quantity of property which had been condemned by the medical officer of health under the Housing Act. The new street will be constructed by the city surveyor's staff at an estimated further outlay of £535.

A special meeting of subscribers to the British School at Athens will be held at the Rooms of the Society of Antiquaries, Burlington House, on Tuesday next, the 28th, at 5 p.m. The chair will be taken by the Right Hon. James Bryce, O.M. The Director of the School, Mr. R. M. Dawkins, will describe his highly successful excavations at the Kamares cave, in Crete, a site which gave its name to perhaps the most striking class of early Cretan pottery. Mr. F. W. Hasluck, the Assistant Director, has already returned to Asia Minor to pursue his epigraphical and historical studies.

WATER SUPPLY AND SANITARY MATTERS.

KIDDERMINSTER SEWAGE-DISPOSAL.—A special meeting of Kidderminster Town Council has been held to receive a report from their engineers, Messrs. Willcox and Raikes. When the borough was extended, demands were made by the Worcestershire County Council as to sewage not being treated within a certain distance of Stourport and of the main road, and that tank treatment should be adopted, with the result that the Kidderminster Corporation entered into a contract with the Earl of Dudley to purchase two additional farms adjoining the sewage farm. When the scheme was submitted to the Local Government Board, that Board objected to the acquisition of so much land, and suggested bacterial treatment of the sewage. Messrs. Willcox and Raikes now reported on the alternative systems of land and bacterial treatment, and advised that land treatment be continued, having regard to its financial advantages, to the large area of land available, and to its special adaptability for the purpose. Bacterial treatment would be about double the annual cost of land treatment, and, while land was a considerable asset, the capital spent on a bacterial system could not be realised again. The council considered the report, and it will be forwarded to the Local Government Board.

LEGAL INTELLIGENCE.

TRESPASS WITHOUT NOTICE TO AVERT DANGER.—Kirby v. Chessum.—Mr. Justice Avory and a jury heard on Tuesday an action for trespass brought by F. J. Kirby, the landlord of 47, High-street North, East Ham, against J. Chessum and Sons, builders, who were engaged on the extension of the premises of the branch post-office on the adjoining site, under contract with H.M. Office of Works, who were joined as third parties. Mr. Colam, K.C., for plaintiff, explained that, in the course of excavations for the new post-office, the defendants removed the soil from under part of the north wall of the plaintiff's house, and put in a foundation of brickwork and concrete. They had no right to do this work without the previous consent of the owner of the property. Evidence to this effect was given by Mr. C. J. Dawson, F.R.I.B.A., of Barking, and Sir John Bethell, M.P., surveyor, the agent for plaintiff's property. For the defendant, Mr. Acland, K.C., argued that when a builder realised that something which had been done was likely to cause danger to himself or his workmen, or to adjoining premises, he was entitled to take such steps as might be necessary to avert the danger. The prima-facie right of the owner was then overridden by the duty to preserve life and property. For this contention the cases of "Kirk v. Gregory," "Cope v. Sharpe," "Angus v. Dalton," and others were quoted. Mr. Justice Avory pointed out that in all the cases cited the danger was not caused by the person who took the steps to avert it. Mr. John Rutherford, an architect under H.M. Office of Works, and Mr. F. J. Lawrence, quantity surveyor, gave evidence for the defendant. The jury returned a verdict for the plaintiff, and assessed the damages at £20; they also found that the danger to the plaintiff's premises was not so imminent that it was reasonably necessary to do the work of underpinning without first obtaining the plaintiff's consent. Before judgment is entered, further argument will be heard by his Lordship on the legal point whether an amendment of the pleadings was necessary before plaintiff could recover.

A licensed building, to be known as the Park Lane Hotel, is about to be built at the corner of Piccadilly and Brick-street, from plans by Mr. Charles W. Stephens, of Hans-road, S.W.

A Local Government Board inquiry has been held at Bristol into an application of the corporation for sanction to borrow £27,542 for the provision of public baths in Gloucester-road, Horfield. The plans were prepared by Mr. L. S. McKenzie, the city engineer.

The Bishop of Chichester dedicated on Saturday, at Bexhill, the Malet Memorial Institute, which has been erected by Lady Ermyntrude Malet in memory of her late husband, Sir Edward Baldwin Malet, formerly British Ambassador to Germany.

The offices of the Hearts of Oak Benefit Society in Euston-road are about to be extended eastwards, to front that thoroughfare, Churchway, and Grafton-place. The architects for the original premises, Messrs. Nicol and Nicol, of Colmore-row, Birmingham, are carrying out the enlargement.

Our Office Table.

Mr. Haldane Macfall, lecturing on Friday evening in the Walker Art Gallery, Liverpool, in connection with the Autumn Exhibition, gave a penetrating study of art. True art he defined as the power of conveying to others the feelings and impressions one had experienced. The power which raised man above the beasts was the power of communion with his fellows, to make them feel what he himself had felt, either by means of words, paintings, or even make-believe. It was through art that man had been raised above the beast, and if he was to rise higher, then it must be still through art. It was the first impulse of a crying child to make one feel by facial expression or action something of the pain it might be feeling. Speaking of modern art, Mr. Macfall said that whenever a nation began to pay their greatest attention to old masters and to neglect new artists, it was a sign that that nation was coming to its extremity. People could not rise to great things unless they could utter great things.

Mr. Banister Fletcher, in a lecture on "Egyptian Architecture," delivered at the British Museum on Thursday afternoon in last week, remarked that all art came from the art of the ancients, and if we would understand the most ancient of the arts under its most ancient conditions in Egypt, we must realise the humanistic side of the Egyptians and the national life in which art had its roots. We must try to enter into the spirit of their religious beliefs and to understand their social conditions, besides giving due importance to the unusual geographical and climatic conditions of that strange land. The beginning of art might generally be traced to the desire to give material expression to some ideal or to enshrine some deep belief. This was specially true in regard to Egyptian craftsmanship. The Pyramids, the greatest monuments of antiquity that had come down to us, were the result of the Egyptian belief in immortality and a future state. Under those everlasting mounds of masonry they sought to preserve the body for the return of the soul. Then, too, the powerful priesthood with an unlimited authority upheld the traditional, mysterious, and unchangeable religious rites which were reflected in the plan, building, and wall decoration of the temples within an enclosing wall to keep the common people outside the precincts; though in the absence of public buildings, the outer court was used as a market and place of assembly.

The new session at Edinburgh College of Art has now been opened. Rapid progress is now being made with the laying out of the grounds of the college. The sculpture hall and museum are now open to the public on Saturdays, and the animal studio is open four days a week for drawing and painting and one for sculpture. The temporary bronze-casting shed is being replaced by a new building at the west end of the college, beside the animal studio. The scheme of decoration, too, is fast advancing towards completion. Several changes in the personnel of the staff have taken place, these being as follows:—In architecture, Mr. Bailey S. Murphy, Lic.R.I.B.A., in place of Mr. Ramsay Traquair, day classes; Mr. T. Aikman Swan, A.R.I.B.A., in place of Mr. William Davidson, Lic.R.I.B.A.; lecturers in architecture, in place of Mr. Traquair, Messrs. Frank C. Mears and Sidney H. Miller; design and crafts, Miss Kathleen S. Burns, formerly teacher of embroidery, has been succeeded by Miss Louie M. Chart, London; and Mr. William H. Terris, as teacher of illuminated writing.

The town-planning committee of the Oldham Corporation has held a special meeting, at which a report prepared by the borough surveyor and Mr. F. Thorpe, architect, was presented. It was stated that in the Limeside area 140 acres of land were scheduled, in Roundthorn 227 acres, in Waterhead 545 acres, and in Moorside 696 acres. The mayor explained that if they adopted the Town Planning Act they would

have power to limit the number of houses an acre, and thereby prevent overcrowding. They could have an area round the buildings without any great cost. At the present time, for a small length of land in High-street they were paying as much money as would carry out the whole of the present scheme. He thought that it was quite possible that in the near future town planning would be made compulsory. They need not develop the whole of the area at once, and the cost of adopting the Act was very small compared with the advantages to be gained. The committee recommended the town council to grant permission for the preparation of a scheme.

Colonel G. Kyffin-Taylor, M.P. (chairman), presided at the final meeting for the current municipal year of the Liverpool Housing Committee, held on Friday. In reviewing the year's work, he remarked that it had been a period of unexampled progress. A block of new buildings had been opened in Northumberland-street. In December last a contract was entered into for the erection of 78 dwellings in relation to the St. Anne-street scheme, and considerable progress has been made in the rebuilding. Unfortunately the strike in the building trade has suspended this work. Nine schemes approved by the council last year have now received the approval of the Local Government Board. As to three of these schemes, the whole of the properties have been acquired, and plans for rebuilding have been approved in respect of two of the schemes. The completion of these schemes will replace 747 insanitary dwellings—most of them of the back-to-back type—by good sanitary houses. The number of houses of the back-to-back type still remaining to be dealt with is about 2,700. At present the Liverpool Housing Committee have 2,747 dwellings under their control, representing a gross rental of £27,519, and of these only 128 dwellings are unlet.

The challenge made by Mr. J. St. Loe Strachey at the inauguration of his weather-board model cottage which he built at a cost of £150 on Merrow Downs, near Guildford, that if anyone could build a cottage, on land which he would provide, for £100 he would buy it for £110 if it stood a year, has been accepted and won. Speaking at a meeting at Guildford in support of Co-partnership Garden Suburbs, Mr. Strachey said that his own little effort had been entirely superseded. Mr. Arnold B. Mitchell, an architect, had accepted his challenge and had put up a cottage in brick and tile which had three bedrooms, a kitchen-parlour, scullery, and offices. It was so obviously stable that he had waived his right to wait a year, and had drawn a cheque for £110 for Mr. Mitchell last Wednesday. The cottage, which is near Mr. Strachey's £150 model, was built in seven weeks by a London firm. At the same meeting Mr. Strachey replied to the criticism of the medical officer of health for the district (Dr. Pierce) to the effect that it would have been much better to have improved the model cottage from the artistic point of view, even if that had involved a certain amount of extra cost. Admitting, for the sake of argument, that his cottage was the ugliest in the world, Mr. Strachey contended that it would be a monstrous thing to increase the cost of cottages in order to get better artistic effect, because if public opinion forced cottages to be put up more artistically and expensively, the only result was to force working men to pay for the pleasure of their eyes. Higher rents ought not to be imposed on the working men in that form, especially as there were so many different views as to what was artistic.

An interesting feature of the ideal cottage at Olympia, designed by Mr. Ralph Knott, was the Lignitine oil varnish stain, matt finish, which was used on all the interior woodwork, and is a product of the well-known varnish and enamel manufacturers, Messrs. Robt. Ingham Clark and Co., Ltd., of 6, Caxton House, Westminster. This stain is also made with a glossy finish to match exactly the various kinds of wood, such as mahogany, walnut, oak, etc., so that when used on soft wood or deal it produces the exact appearance of the better class timber. It is applied in the ordinary way with a brush, thus enabling the work of staining and varnishing to be carried out in one operation, and is useful for renovating articles of furniture. All who are interested are recommended to write to Messrs. Robt. Ingham Clark and Co., Ltd., for full particulars and prices.

The city council of Bristol discussed at their meeting on Tuesday for nearly three hours the new clauses proposed to be inserted in corporation contracts. Several months ago the council appointed a committee, of which Mr. Whitefield was chairman, to draft new clauses, and these were adopted at a subsequent meeting of the council. Then there came an objection from the Master Builders' Association to sign contracts under the altered conditions laid down, and on the matter being again brought before the council a fresh committee was appointed to go into the whole matter, with the result that clauses containing modifications of the conditions previously imposed upon contractors were now brought forward. One of the modifications was the deleting of the provision that persons entrusted with contracts must have paid trade-union or standard wages three months before the date of such contract. The Labour Party had asked for six months, and the shorter period had been adopted as a compromise. Mr. Whitefield sought to have the three months' condition restored, but though he pleaded hard for it, and was supported by his colleagues and others, the council declined to accept the amendment. He was successful in his effort to get clerks as well as work people brought within the operation of the clauses, and in regard to another amendment, that the clauses should apply to work executed on corporation properties outside the area of the city, Alderman Pearson promised that before another meeting he would endeavour, in conjunction with Alderman Sheppard, to frame a clause which would meet cases in which work was executed on property adjacent to the city, providing that the men engaged there should be paid the Bristol rates.

The refusal of the Local Government Board to sanction the loan of £8,000 for the furnishing of the new guildhall at Hull created a lively debate at the last meeting of the city council. The Local Government Board considered that the electrical fittings were too costly, and that considerable saving could be effected in the furnishing. Alderman Hall, the chairman of the property committee, said that the matter was being reconsidered with a view to a reduction in the cost. Mr. Fussey declared that one-third of the original estimate could be saved. Mr. Emmerson, of the Labour party, chided the members of the committee with not having the pluck to defend their actions. An attack having been made on the aldermanic bench, Sir Alfred Gelder, M.P., F.R.I.B.A., said with emphasis that no man who had indulged in cheap sneers would refuse the gown if it was offered him. If aldermen were to be subjected to sneers and insults, they would find it a difficult matter to get experienced men of integrity to retain their position or come into the council. An amendment to place the furnishings of the guildhall with a specially selected committee was defeated.

Messrs. Chapman and Hall, Ltd., Henrietta-street, are the English publishers of two useful American textbooks. The first is "The Elements of Specification Writing" for students in civil engineering, by R. S. Kerby, C.E., which is published at 5s. 6d. The second is "Graphics and Structural Design," by Professor H. D. Hess, M.E., of Cornell University, issued at 12s. 6d. The latter includes much that will help designers of all structures, and not merely of machines.

The National Radiator Company, Ltd., is represented at Olympia by Mr. Thomas Potterton, who, in conjunction with the South Metropolitan Gas Company, is exhibiting one of their No. O-B-4 sectional water-boilers, fitted with "Ideal" regulating adjustment, including Sylphon damper regulator; also a No. 101 Premier water-boiler and a No. 12-D "Ideal" domestic boiler for hot-water supply. In addition, there are shown several "Ideal" radiators, including the new "Ideal" plain wall radiators and No. 8 "Ideal" towel-rail. At the National Gas Exhibition, four radiators are shown in the "town-house" equipment, and in addition a working apparatus with gas-boilers for warming schoolrooms by low-pressure hot water.

MEETINGS FOR THE ENSUING WEEK.

FRIDAY (To-day).—Junior Institution of Engineers: "Education," Some Random Reflections, by George Evett. 39 Victoria-street, S.W.

SATURDAY (To-morrow).—Institution of Municipal and County Engineers: South Eastern District Meeting at the Pavilion, Brighton. 12 noon.

WEDNESDAY.—Manchester Society of Architects: "The Development of the Theatre," by A. E. Richardson.

THURSDAY.—Institution of Civil Engineers: Forest Lecture: "Progress of Marine Construction," by Alexander Gracie, M.V.O. 7 p.m.

Architectural Association of Ireland: Presidential Address by Professor W. A. Scott, A.R.I.B.A.

FRIDAY, Oct. 24.—Glasgow Architectural Draughtsmen's Society: "The Execution of Reinforced Concrete Work," by Robert Park. 8 p.m.

Mr. Edwin Seward, F.R.I.B.A., has been appointed architect to the Llandough Hospital, Cardiff.

The salary of Mr. G. C. Copestick, architect to the Derbyshire Standing Joint Committee, has been increased to £255 per annum.

The man who is "going to do some advertising next year, maybe" gets his advertising in the end, in the shape of an obituary.

Leatherhead School is being rebuilt after the recent fire, and Mr. Leonard Martin, F.R.I.B.A., is the architect. A good library will form part of the undertaking.

The hospital for women about to be erected at Clapham will be staffed by women in all departments. The site is near the common, and Mr. M. E. Collins, of Old Broad-street, E.C., is the architect.

The Local Government Board have given sanction to the application of the Dawlish Urban District Council to borrow £2,500 for the purchase and adaptation of the Knowle Estate for municipal buildings.

Mr. Charles Lock, of High Wycombe, valuer of the Aylesbury and Buckingham district under the Finance Act, has been appointed land agent and surveyor to the Essex County Council Small Holdings Committee at a salary of £300, rising to £400 per annum.

Mr. R. Stephen Ayling, F.R.I.B.A., who has actively associated himself with the advocacy of better accommodation and provision of public abattoirs, is working out an extensive undertaking of this character for Callao, a port of Peru, South America.

The first of a series of University Extension lectures on "The History and Architecture of London" was delivered in St. Peter's Church, Cornhill, on Saturday afternoon, by Mr. Allen S. Walker, who pointed out that the cross-roads at that point marked the centre of the original Roman city. The church was largely rebuilt in the 15th century, and was again reconstructed by Wren after the Great Fire.

Extensive additions are about to be made to the Convent of the Sisters of the Holy Faith in Clarendon-street, Dublin. Mr. P. J. Munden, Exchequer-street, Dublin, is the architect. The new wing of dormitories and reception-room will have a frontage of 42ft. to the street, will be four stories in height, and will contain twenty apartments, while on the first floor there will be an oratory and sacristy. The addition to the existing building will be faced with stock brick and buff brick dressings.

The alterations and improvements to Wednesbury town-hall and municipal offices, which have been carried out at a cost of nearly £4,000, are now practically completed. The improvement scheme included the enlargement of the municipal offices by taking in the old education offices, the construction of a new façade to the town-hall of stone and brickwork, the redecoration of the interior, and the provision of a new floor for the hall. Additional accommodation for the borough officials, which was badly needed, has been provided.

LATEST PRICES.

IRON.

Steel Joists, Belgian and German (ex steamer, London)	per ton	£6	2	6	to £6	5	0
Steel Joists, English	,,	7	10	0	,, 7	12	6
Wrought Iron Girder Plates	,,	7	0	0	,, 7	5	0
Steel Girder Plates	,,	7	2	6	,, 8	2	6
Bar Iron, good Staffs	,,	6	5	0	,, 8	10	0
Do., Lowmoor, Flat, Round, or Square	,,	20	0	0	,, 0	0	0
Do., Welsh	,,	5	15	0	,, 5	17	0
Boiler Plates, Iron— South Staffs	,,	8	0	0	,, 8	15	0
Best Spedshill	,,	9	0	0	,, 9	10	0

Angles 10s., Tees 20s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £8 15s to £9.
Ditto galvanised, £14 to £15 10s. per ton.

Galvanised Corrugated Sheet Iron—

No. 18 to 20.	No. 22 to 24
6ft. to 8ft. long, inclusive Per ton.	Per ton.
gauge £13 0 0	£13 10 0
Best ditto 13 0 0	14 0 0

Wire Nails (Points de Paris)—

3 to 7	8	9	10	11	12	13	14	15	B.W.G.
8/3	8 9	9/3	9/9	10/3	11/-	11/9	12/6	13/6	per cwt.

	Per ton.				Per ton.		
Cast-Iron Columns	£7	10	0	to	£9	0	0
Cast-Iron Stanchions	7	10	0	,,	9	0	0
Rolled-Iron Fencing Wire	8	5	0	,,	8	10	0
Rolled-Steel Fencing Wire	7	5	0	,,	7	10	0
,, ,, ,, Galvanised	8	15	0	,,	9	5	0
Cast-Iron Sash Weights	5	0	0	,,	5	5	0
Cut Floor Brads	9	15	0	,,	—		
Corrugated Iron, 24 gauge	16	0	0	,,	—		
Galvanised Wire Strand, 7 ply, 14 B.W.G.	14	5	0	,,	—		

B.B. Drawn Telegraph Wire, Galvanised—

0 to 8	9	10	11	12	B.W.G.
£10 10s.	£10 15s.	£11 0s.	£11 5s.	£11 15s.	per ton.

Cast-Iron Socket Pipes—							
3in. diameter	£6	2	6	to	£6	7	0
4in. to 6in.	6	0	0	,,	6	5	0
7in. to 24in. (all sizes)	5	7	6	,,	6	0	0

[Coated with composition, 5s. 0d. per ton extra, turned and bored joints, 5s. 0d. per ton extra.]

Pig Iron—	Per ton.						
Cold Blast, Lilleshall	110s.	0d.	to	117s.	6d.		
Hot Blast, ditto	70s.	0d.	,,	75s.	0d.		
Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—							
Gas-Tubes	75	p.c.					
Water-Tubes	72½	,,					
Steam-Tubes	67½	,,					
Galvanised Gas-Tubes	65	,,					
Galvanised Water-Tubes	62½	,,					
Galvanised Steam-Tubes	57½	,,					

OTHER METALS.

Spelter, Silesian	Per ton	£20	15	0	to £21	0	0
Lead Water Pipe, Town		24	10	0	,, —		
,, ,, ,, Country		25	5	0	,, —		
Lead Barrel Pipe, Town		25	10	0	,, —		
,, ,, ,, Country		26	5	0	,, —		
Lead Pipe, Tinned inside, Town		26	10	0	,, —		
,, ,, ,, ,, Country		27	5	0	,, —		
Lead Pipe, Tinned inside and outside Town		29	0	0	,, —		
,, ,, ,, ,, Country		29	15	0	,, —		
Composition Gas-Pipe, Town		27	10	0	,, —		
,, ,, Country		28	5	0	,, —		
Lead Soil-pipe (up to 4½in.) Town		27	10	0	,, —		
,, ,, ,, Country		28	5	0	,, —		
[Over 4½in. £1 per ton extra.]							
Lead Shot, in 28lb. bags		24	15	0	,, —		
Copper Sheets, sheathing & rods		91	0	0	,, 91	10	0
Copper, British Cake and Ingot		79	10	0	,, 80	0	0
Tin, English Ingots		187	5	0	,, 187	15	0
Do., Bars		188	5	0	,, 188	10	0
Pig Lead, in 1cwt. pigs (Town)		21	10	0	,, —		
Sheet Lead, Town		24	0	0	,, —		
,, ,, Country		24	15	0	,, —		
Genuine White Lead		30	15	0	,, —		
Refined Red Lead		25	0	0	,, —		
Sheet Zinc		29	0	0	,, —		
Old Lead, against account		19	0	0	,, —		
Tin	per cwt.	10	10	0	,, —		
Cut nails (per cwt. basis, ordinary brand		0	11	6	,, —		

TIMBER.

CONSTRUCTIONAL.

Yellow Pine Deals, Quebec, per standard:— 1st quality		£38	0	0	to £45	0	0
,, ,, ,, 2nd ,,		26	0	0	,, 33	0	0
,, ,, ,, 3rd ,,		16	0	0	,, 18	10	0
Spruce Deals: St. Johns		10	0	0	,, 11	10	0
,, ,, Miramichi		9	10	0	,, 10	10	0
,, Boards: Swag		11	0	0	,, 12	0	0
Red Deals: rchangel 1st quality		21	0	0	,, 24	0	0
,, ,, ,, 2nd ,,		16	0	0	,, 19	0	0
,, ,, ,, 3rd ,,		13	0	0	,, 14	0	0
,, ,, St. Petersburg—							
,, ,, ,, 1st quality		16	10	0	,, 18	0	0
,, ,, ,, 2nd ,,		14	10	0	,, 15	10	0
,, ,, Wyburg & Uleaborg		12	10	0	,, 15	0	0
Gefle, Gothenburg, and Stockholm		12	10	0	,, 17	0	0
White Deals: Crown		11	0	0	,, 15	10	0
,, ,, Seconds		11	10	0	,, 13	0	0
Flooring: White and Planed— 1st and 2nd quality mixed		10	15	0	,, 11	15	0
1st, 2nd, & 3rd quality mixed		10	5	0	,, 11	0	0
Red Planed, 1st quality		14	10	0	,, 17	0	0
Pitch Pine: Prime Deals and Boards		18	0	0	,, 23	0	0
Lignum Vitæ	Per ton	7	0	0	,, 14	0	0
	Per cubic foot.						
Yellow Pine Logs (waney board)		0		0	,, 0	5	6
Pitch Pine Logs		0	3	0	,, 0	2	6
Birch: Quebec Logs		0	2	3	,, 0	2	9
Oak: Austrian Wainscot		0	7	0	,, 0	8	0
Mahogany: Gaboon		0	2	0	,, 0	2	3

FURNITURE AND HARDWOODS.

Teak: Burmese, per load, 50ft.		£20	0	0	to £35	0	0
Teak: Java, per load, 50ft.		16	0	0	,, 21	0	0
	Per cubic foot.						
Oak Planks: U.S.A., imported		0	1	9	to 0	2	6
,, Boards ,, ,, Prm.		0	3	0	,, 0	3	6
,, ,, ,, ,, Mdm.		0	2	6	,, 0	2	9
Sequoia (Californian Redwood)		0	2	4	,, 0	3	6
Birch: Quebec logs		0	2	3	,, 0	2	9
,, ,, sawn planks		0	1	3	,, 0	2	9
Oak: Austrian Wainscot		0	7	0	,, 0	8	0
Walnut: Prime boards and planks		0	6	0	,, 0	6	6
Walnut: Mdm. ,, ,,		0	3	6	,, 0	4	6
Greenheart: Hewn logs		0	3	3	,, 0	4	0
Cedar: Cigar box		0	4	9	,, 0	5	6
Satin Walnut: Imp. sawn boards, prime		0	2	4	,, 0	2	9
Orham: Imp. sawn boards, prime		0	2	0	,, 0	2	3
Mahogany: St. Domingo, Cuba, and Honduras		0	6	0	,, 0	9	0
,, African, Assinee, &c.		0	5	0	,, 0	6	6
,, Lagos and Benin		0	4	6	,, 0	6	0
,, Sekondi and Cape Lopez		0	3	0	,, 0	4	0
,, Gaboon		0	2	0	,, 0	2	3
Satinwood: West Indian		0	10	0	,, 0	14	0
Rosewood	Per ton	8	0	0	,, 12	0	0
Lignum Vitæ	,,	7	0	0	,, 14	0	0

STONE.*

Red Mansfield, in blocks	per foot cube	£0	2	4
Darley Dale, ditto	,,	0	2	3
Red Corsehill, ditto	,,	0	2	2
Closeburn Red Freestone, ditto	,,	0	2	0
Ancaster, ditto	,,	0	1	10
Greenshill, ditto	,,	0	1	10
Chilmark, ditto (in truck at Nine Elms)	,,	0	1	10½
Hard York, ditto	,,	0	2	0
Ditto ditto 6in. sawn both sides, landings, random sizes	per foot sup.	0	2	8
Ditto ditto 3in. slab sawn two sides, random sizes	,,		1	3

* All F.O.R. London.

Bath Stone, delivered on road waggons, Paddington Depot	per foot cube	0	1	7½
Ditto, ditto, Nine Elms Depot	,,	0	1	9½
Beer Stone, delivered on rail at Seaton Station	,,	0	1	0
Ditto, delivered at Nine Elms Station	,,	0	1	6

Portland Stone, in random blocks of 20ft. average:—

	Brown Whit Bed.	White Base Bed
	Per foot cube.	
Delivered on road waggons at Paddington Depot, Nine Elms Depot, or Pimlico Wharf	£0 2 3	£0 2 4½

SLATES.

	in. in.	£	s.	d.	per 1,000 of
Blue Portmadoc	20×10	13	12	6	1,200 at r.stn
,, ,,	16× 8	6	12	6	,, ,,
Blue Bangor	20×10	13	2	6	,, ,,
,, ,,	20×12	13	17	6	,, ,,
First quality	20×10	13	0	0	,, ,,
,, ,,	20×12	13	15	0	,, ,,
,, ,,	16× 8	7	5	0	,, ,,
Eureka unfading green	20×10	15	17	6	,, ,,
,, ,,	20×12	18	7	6	,, ,,
,, ,,	18×10	13	5	0	,, ,,
,, ,,	16× 8	10	5	0	,, ,,
Permanent green	20×10	11	12	6	,, ,,
,, ,,	18×10	9	12	6	,, ,,
,, ,,	16× 8	6	12	6	,, ,,

BRICKS.

(All prices net.)

First Hard Stocks	£1	15	0	per 1,000 alongside, in			
Second Hard Stocks	1	11	0	,,	,,		[river.
Mild Stocks	1	9	0	,,	,,		,,
Picked Stocks for Facings	2	5	0	,,			livered at rly. stn.
Flettons	1	10	0	,,	,,		,,
Pressed Wire Cuts	1	18	0	,,	,,		,,
Red Wire Cuts	1	14	0	,,	,,		,,
Best Fareham Red	3	12	0		,,		,,
Best Red Pressed Ruabon Facing	5	0	0	,,	,,		,,
Best Blue Pressed Staffordshire	3	15	0	,,	,,		,,
Ditto Bullnose	4	0	0		,,		,,
Best Stourbridge Firebricks	3	14	0	,,	,,		,,
2½in. Best Red Accrington Plastic Facing Bricks	4	10	6	,,	Net, delivered in full truck loads in London.		

" Accrington Best Red Plastic Facing per 1,000

Bricks	£3	10	0
3⅜" ditto Second Best Plastic ditto	2	2	6
Ditto Ordinary Second Bricks	1	11	3
Ditto Plastic Engineering Bricks	1	17	6
Sewer Arch Brick not more than 3⅜" in thickest part	2	0	0
3⅜" Chimney Bricks fit for outside work	2	6	0
3⅜" ditto ditto through and through	2	0	0
3⅜" Beaded, Ovolo and Bevel Jambs; Octagons; 2½" and ½" radius Bullnoses; Stock patterns	3	7	6
Accrington Air Bricks, 9"×2 course deep, each	0	0	6
Ditto ditto 9"×1 course	0	0	3

Accrington Camber Arches:—

3 course deep, 4½" soffit, per foot opening						0	1 3
4	ditto	4½"	ditto	ditto	ditto	0	1 8
5	ditto	4½"	ditto	ditto	ditto	0	2 1
6	ditto	4½"	ditto	ditto	ditto	0	2 6
3	ditto	9"	ditto	ditto	ditto	0	2 1
4	ditto	9"	ditto	ditto	ditto	0	2 11
5	ditto	9"	ditto	ditto	ditto	0	3 9
6	ditto	9"	ditto	ditto	ditto	0	4 6

Net free on rail or free on boat at works.

GLAZED BRICKS.

HARD GLAZES, (PER 1,000.)

White, Ivory, and Salt Glazed. Best.	Buff, Cream, & Bronze. Other Colours.	Second Colours.
Stretchers—		
£13 7 6 £10 17 6	£13 17 6 £17 17 6	£12 7 6
Headers—		
11 17 6 10 7 6	13 7 6 17 7 6	11 17 6
Quoins, Bullnose, and 4½in. Flats—		
15 17 6 14 17 6	17 17 6 21 7 6	15 17 6
Double Stretchers—		
17 17 6 16 7 6	20 17 6 24 7 6	17 17 6
Double Headers—		
14 17 6 13 7 6	17 17 6 21 7 6	14 17 6
One side and two ends, square—		
18 17 6 17 7 6	21 17 6 26 7 6	18 17 6
Two sides and one end, square—		
19 17 6 18 7 6	22 17 6 26 17 6	19 17 6
Splays and Squints—		
17 7 6 15 17 6	21 17 6 24 17 6	17 7 6
Plinth and Hollow Bricks. Stretchers and Headers—		
5d. each 4d. each	6d. each 6d. each	5d. each
Double Bullnose, Round Ends, Bullnose Stops—		
5d. each 4d. each	6d. each 6d. each	5d. each
Rounded Internal Angles—		
4d. each 3d. each	5d. each 5d. each	4d. each

MOULDED BRICKS.

Stretchers and Headers—				
8d. each	8d. each	8d. each	8d. each	8d. each
Internal and External Angles—				
1/2 each	1/2 each	1/2 each	1/2 each	1/2 each
Cill Bullnose, Stretchers and Headers—				
5d. each	4d. each	6d. each	6d. each	5d. each
Majolica or Soft Glazed Stretchers and Headers				Per 1,000 £23 17 6
,, Quoins and Bullnose				27 17 6
Compass bricks, circular and arch bricks of single radius £6 per 1,000 over above list for their respective kinds and colours				Not exceeding 9in.
Camber arch bricks, any kind or colour, 1s. 2d. each				by 4½in by 2½in.

Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.

* These prices are carriage paid in full truck loads to London Stations.

	s.	d.		
Thames Sand	7	6	per yard,	delivered
Pit Sand	7	0	,,	,,
Thames Ballast	6	0	,,	,,

	s.	d.			Per ton,
Best Portland Cement	36	0	to	41	0 delivered
Ground Blue Lias Lime	21	0	per ton delivered.		

Exclusive of charge for sacks.

	s.	d.		s.	d. Per yard,
Grey Stone Lime	13	6	to	14	0 delivered

Stourbridge Fireclay in sacks 27s. 0d. per ton at railway station.

TILES.

	s.	d.	Dlvrd. at
Plain red roofing tiles	42	0	per 1000 ry. stn.
Hip and Valley tiles	3	7	per doz. ,, ,,
Broseley tiles	50	0	per 1000 ,, ,,
Ornamental tiles	52	6	,, ,, ,,
Hip and Valley tiles	4	0	per doz. ,, ,,
Ruabon red, brown, or brindled	57	6	per 1000 ,, ,,
do. (Edwards)	60	0	,, ,, ,,
Ornamental do.	4	0	per doz. ,, ,,
Hip tiles	3	0	,, ,, ,,
Valley tiles			
Selected "Perfecta" roofing tiles:—Plain tiles (Peake's)	46	0	per 1000 ,, ,,
Ornamental do.	48	6	,, ,, ,,
Hip tiles	3	10½	per doz. ,, ,,
Valley tiles	3	4½	,, ,, ,,
"Rosemary" brand plain tiles	48	0	per 1000 ,, ,,
Ornamental tiles	50	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	8	,, ,, ,,
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 ,, ,,
Hand-made sand-faced	45	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	6	,, ,, ,,
Hartshill" brand plain tiles, sand-faced	50	0	per 1000 ,, ,,
Pressed	47	6	,, ,, ,,
Ornamental do.	50	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
alley tiles	3	6	,, ,,

OILS.

Rapeseed, English pale, per tun		£28	15	0	to £29	5	0
Do., brown	,, ...	26	15	0	,, 27	5	0
Cottonseed, refined	,, ...	29	0	0	,, 30	0	0
Olive, Spanish	,, ...	39	10	0	,, 40	0	0
Seal, pale	,, ...	21	0	0	,, 21	10	0
Cocoanut, Cochin	,, ...	46	0	0	,, 46	10	0
Do., Ceylon	,, ...	42	10	0	,, 43	0	0
Do., Mauritius	,, ...	42	10	0	,, 43	0	0
Palm, Lagos	,, ...	33	5	0	,, 33	5	0
Do. Nut Kernel	,, ...	35	0	0	,, 35	10	0
Oleine	,, ...	17	5	0	,, 19	5	0
Sperm	,, ...	30	0	0	,, 31	0	0
Lubricating U.S.	per gal,	0	7	0	,, 0	8	0
Petroleum refined	,, ...	0	0	6½	,, 0	0	6½
Tar, Stockholm	per barrel	1	6	0	,, 1	10	0
Do., Archangel	,, ...	0	19	6	,, 1	0	0
Linseed Oil	per gal.	0	2	2¾	,,	—	
Baltic Oil	,, ...	0	2	6	,,	—	
Turpentine	,, ...	0	2	7½	,,	—	
Putty (Genuine Linseed Oil)	per cwt.	0	9	0	,,	—	
Pure Linseed Oil "Stority" Brand	,,	0	10	0	,,	—	

GLASS (IN CRATES).

	15oz.	21oz.	26oz.	32oz.
English Sheet Glass:				
Fourths	2d. ...	3d. ...	3½d. ...	4½d.
Thirds	2½d. ...	3½d. ...	4½d. ...	5½d.
Fluted Sheet	2½d. ...	3½d. ...	6½d. ...	7d.
Hartley's English Rolled Plate:	⅛in.	3/16in.	¼in.	
	2½d. ...	2½d. ...	3d.	
Figured Rolled and Repoussine	White.	Tinted 3½d. ...	5d.	

VARNISHES, &c.	Per gallon.
Fine Pale Oak Varnish	£0 8 0
Pale Copal Oak	0 10 0
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard drying Oak, for seats of churches	0 14 0
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flatting Varnish	0 18 9
White Copal Enamel	1 4 0
Extra Pale Paper	0 12 9
Best Japan Gold Size	0 10 9
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 0

TRADE NOTES.

The authorities at Guy's Hospital, London, are rendering the basement walls of the hospital with Pudlo cement to make them damp proof.

Messrs. Powley and Paddon, the London representatives of Muribloc (Partition Slabs), Ltd., have removed their offices to Garlick Chambers, Garlick-hill, Cannon-street, E.C.

Under the direction of Mr. J. E. Teare, architect, Douglas, Isle of Man, the Boyle system of ventilation (natural, embracing Boyle's latest patent "Air-pump" ventilators and air-inlets), has been applied to Sulby Chapel, Isle of Man.

Telephone DALSTON 1—

OGILVIE & CO. Many years connected with the late firm of W. H. LASCELLES & CO., of Bunhill Row.

Mildmay Avenue, ISLINGTON, N.

EXPERTS in HIGH-CLASS JOINERY.

ALTERATIONS & DECORATIONS. ESTIMATES FREE

FOR

Olivers' Seasoned Hardwoods,

APPLY TO

WM. OLIVER & SONS, Ltd.,

120, Bunhill Row, London, E.C

TENDERS.

*** Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

CROSSNESS, S.E.—For the supply of steam, exhaust, feed, and circulating water pipes and valves at the enlarged portion of Crossness pumping station, now approaching completion, for the London County Council:—

Le Bas, E., and Co., London	£7,950 0 0
Boving and Co., Ltd., London	6,580 0 0
Aiton and Co., Ltd., Derby	5,805 0 0
Prockter, F. M., & Co., Ltd., Sale	5,800 0 0
Spencer, J., Ltd., Wednesbury	5,570 0 0

COLCHESTER.—For the erection of Hamilton-road council school, for the Colchester Borough Education Committee. Mr. Duncan W. Clark, A.R.I.B.A., P.A.S.I., 3, High-street, Colchester, architect. Mr. J. B. H. Low, Q.S.A., 74, Duke-street, Chelmsford, quantity surveyor:—

	A.	B.	C.	D.
Smith, J., and Son, S. Norwood	£9,770 0 0	£944	£1,169 0 0	£11,523 0 0
Roper, C., Ipswich	9,347 0 0	637	1,127 0 0	11,111 0 0
Beaumont, R., Lexden	9,212 0 0	589	1,087 0 0	10,888 0 0
Dobson, G., and Son, Colchester	9,172 0 0	620	995 0 0	10,787 0 0
Ward, T. J., Colchester	8,979 0 0	568	1,111 0 0	10,658 0 0
Parren and Son, Earith, Hunts	8,803 0 0	576	1,030 18 0	10,565 3 0
Smith, H., Clacton-on-Sea	8,956 0 0	573	1,008 0 0	10,537 0 0
Kidman and Sons, Cambridge*	8,835 0 0	590	950 0 0	10,375 0 0

* Recommended for acceptance.

A.—Main buildings. B.—Latrines and playsheds. C.—Boundary walls, fences, and playgrounds. D.—Total. Alternative tenders:—

	A.	B.
Smith, J. and Son, S. Norwood	£63 0 0	£40 0 0
Roper, C., Ipswich	48 10 0	13 10 0
Beaumont, R., Lexden	21 7 0	42 0 0
Dobson, G., and Son, Colchester	41 0 0	25 0 0
Ward, T. J., Colchester	18 6 0	35 11 0
Parren and Son, Earith, Hunts	104 12 0	22 8 6
Smith, H., Clacton-on-Sea	46 5 0	40 0 0
Kidman and Sons, Cambridge	60 0 0	25 0 0

A.—Estimate No. 1:—If glazed stoneware coping is used in lieu of brick on edge to boundary walls, add. B.—Estimate No. 2:—If artificial stone coping is used in lieu of brick on edge to boundary walls, add.

(*Continued on page XII.*)

LIST OF COMPETITIONS OPEN.

Oct.	31—Houses and Planning, York	£100, £50, £25	F. W. Spurr, City Engineer, Guildhall, York.
Nov.	1—Royal Palace, Sofia, Bulgaria		Section d'Architecture au Ministere des Travaux Publics, Sofia.
,,	1—Law Courts, Sofia, Bulgaria		Section d'Architecture au Ministere des Travaux Publics, Sofia.
,,	18—Destructor, Schaerbeek-lez-Bruxelles		Service de l'Ingenieur, 30, Rue de la Ruche, Brussels.
,,	29—Band Pavilion, West Cliff, Folkestone (limit of cost £20,000). (Edwin T. Hall, F.R.I.B.A., 34, Bedford-square, W.C., Assessor)		A. F. Kidson, Town Clerk, Folkestone.
Dec.	29—New Offices for Board of Trade, &c., Whitehall Gardens, S.W. [R. Blomfield, M.A. (Oxon), A.R.A., P.R.I.B.A. J. Belcher, R.A., and Sir Aston Webb, C.V.O., C.B., R.A., Assessors] Sketch Designs, ten will be Selected,		
1914.	with £300 Honorarium each		The Secretary, H.M. Office of Works, Storey's Gate, S.W.
Jan.	2—Manchester Royal Exchange, Additional New Buildings and Alterations. Open to all architects in U.K. Not more than 12 architects of repute have been specially invited; each of whom will receive one hundred guineas. The three selected architects will receive one hundred guineas each. Author of design placed first will be appointed. (J. S. Gibson, F.R.I.B.A., Assessor)		Rich. J. Allen, Master, Royal Exchange, Manchester.
,,	2—Departmental and Courts Buildings, Ottawa (T. E. Collcutt, J. H. G. Russell, and J. O. Marchand, Assessors). Double Competition, five unsuccessful competitors in second to receive 3,000dols. each		R. C. Desrochers, Department of Public Works, Ottawa, Ont.
Feb.	15—Savings Bank, Verona (Five Assessors	£1,200, £600	The Savings Bank, 1, Via Garibaldi, Verona.

LIST OF TENDERS OPEN.

BUILDINGS.

Oct.	18—School, Additions to, Bowling Back-lane, Bradford	Education Committee	The City Architect, Town Hall, Bradford.
,,	18—Workhouse, Terrazzo Flooring at, Cardiff	Guardians	A. J. Harris, Clerk, Queen's Chambers, Cardiff.
,,	18—House, Clark's Farm, Madford, Hemyock		T. Carter, Madford, Hemyock.
,,	18—Infants' School, Midland-road, Bradford	Education Committee	The City Architect, Town Hall, Bradford.
,,	20—Asylum, Extending Male Airing Court at, Beverley		R. H. Whiteing, Archt., Ladygate, Beverley.
,,	20—Council School, Grantham	Education Committee	The Borough Surveyor's Office, Guildhall, Grantham.
,,	20—Workhouse, Laundry at, West Hill, Dartford	Guardians	Tait and Hobbs, Archts., Lowfield-street, Dartford.
,,	20—New Post Office, Bolton	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate S.W.
,,	20—Council School, Upper Loughor	Glamorgan County Council	The Glamorgan County Hall, Cardiff.
,,	20—Shop and Billiard Hall, New Dock, Llanelly		O. P. Bevan, Archt., Express Chambers, Merthyr.
,,	20—Tuscan Villa, Alterations to, Workington	Mrs. Byers	W. G. Scott and Co., Archts., 2, Park-lane, Workington.
,,	20—New Department, Western-rd. Council School, Sheffield	Education Committee	The City Architect, Town Hall, Sheffield.
,,	20—Dye House, Albion Mills, Morley	R. and J. Horsfall	T. A. Buttery, L.R.I.B.A., Queen-street, Morley.
,,	20—Cart Shed, Extension of, Trade-street, Cardiff	Corporation	The City Engineer, City Hall, Cardiff.
,,	20—House, Tuness-street, Buckie	G. Cowie	W. Hendry, Archt., 91, West Church-street, Buckie.
,,	20—Houses (14), Pontygwindy-road, Caerphilly	Co-op. Garden Village Society	A. H. Mottram, Archt., 4, Park-place, Cardiff.
,,	20—Five Shops and Billiard Hall, Llanelly		O. P. Bevan, Archt., Express Chambers, Merthyr.
,,	20—School Extensions (300 places), Rhiw-Syr-Dafydd	Monmouthshire Education Com.	J. Bain, F.R.I.B.A., County Council Offices, Newport, Mon.
,,	21—Cottages (130), Tilbury	Urban District Council	Pepler and Allen, Archts., 4, Arundel-street, Strand, W.C.
,,	21—Gorton (Temporary) Labour Exchange, Manchester	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
,,	21—Stores, Extensions to, Skelmanthorpe	Industrial Society, Ltd.	J. Berry and Sons, Archts., 3, Market-place, Huddersfield.
,,	21—Sanatorium, Heath Charnock, near Chorley	Lancashire County Council	J. B. Jolly, Archt., 9, High-street, Chorley.
,,	22—Workhouse, Additions to, Ide Hill, Sundridge	Sevenoaks Guardians	E. Pawley, F.R.I.B.A., 148, High-street, Sevenoaks.
,,	22—Cottage at Sanatorium, Shelf, Yorks	Halifax Health Committee	J. Lord, M.I.C.E., Boro' Eng., Town Hall, Halifax.
,,	22—Repairs to Forts (Six Months), Milford Haven	War Department	The Royal Engineer Office, Hobbs Point, Pembroke Dock.
,,	22—Sheltered Bandstand and Pavilion, Clacton-on-Sea	Urban District Council	Daniel Bowe, Sur., Town Hall Buildings, Clacton-on-Sea.
,,	22—Carnegie Library, Didsbury	Manchester Libraries Committee	The City Architect, Town Hall, Manchester.
,,	22—Culture House at Howell's County School, Llandaff		C. E. Halliday, F.S.A., 19, Castle-street, Cardiff.
,,	22—Price's School, Additions to Master's House, Fareham	Price's Charity Governors	W. Cobbett, Archt., West-street, Fareham.
,,	23—Gymnasium at Technical School, Workington	Cumberland Education Committee	Clark and Moscrop, Archts., Feetham, Darlington.
,,	23—Chimney Stalk, Waterloo-street Post Office, Glasgow	H.M. Works Commissioners	H.M. Office of Works, 5, Parliament-square, Edinburgh.
,,	23—Council School, Repairs to, Clovelly		J. Lott, Correspondent, Clovelly.
,,	23—Chimney at Stoves Depot, Cambridge-street, Manchester	Gas Committee	F. A. Price, Supt., Gas Department, Town Hall, Manchester.
,,	23—Cottages (14), Repair of, Minniver-st., Blackfriars-rd., S.E.	St. Martin's-in-Fields Trustees	A. A. Kekewick, M.S.A., 12, Norfolk-street, Strand.
,,	23—Operating Room at Infirmary, Additions to, Rotherhithe	Guardians	A. H. Newman, F.R.I.B.A., Railway-ap., London Bridge, S.E.
,,	24—Drill Hall, Extensions to, Granby-street, Loughborough	Leicester Terr. Force Assoc.	A. H. Walker, Archt., Town Hall, Loughborough.
,,	24—School, Saddleworth Friezland	West Riding Education Committee	The Education Architect, County Hall, Wakefield.
,,	24—Vicarage, St. Wilfrid's-road, Lidget Green, Bradford	Trustees	Woolfall and Eccles, F.F.R.I.B.A., 60, Castle-street, Liverpool.
,,	25—Town Hall and Technical School, Omagh	Urban District Council	J. M. Robinson, Archt., 7, Market Buildings, Londonderry.
,,	25—Two Shops, Aberkenfig	J. T. Jones	P. J. Thomas, Archt., Bridgend.
,,	25—Primary Hall and Club-rooms, Fairlight Hall, Tooting	Ragged School Union, &c.	W. E. Johnson, Archt., 14, Heathdene-road, Streatham, S.W.
,,	27—Cottages (26), Ottenham	Evesham Rural District Council	E. H. Wadams, Clerk, Union Offices, Evesham.
,,	27—Drill Hall, Glastonbury	Territorial Force Association	A. J. Pictor, A.R.I.B.A., Bruton.
,,	27—Masonry Archway, Trelewis	E. Lewis and Sons	W. Kinsman, 3, Taff-street, Pontypridd.
,,	27—Workshops and Glass Sheds, Warwick-road, Kensington	Borough Council	The Borough Engineer, Town Hall, Kensington.
,,	28—Children's Infirmary, Alterations to, Upper Norwood, S.E.	Lambeth Guardians	J. L. Goldspink, Clerk, Brook-street, Kennington-road, S.E.

BUILDINGS—*continued.*

Oct.	28—Nine Pairs of Cottages, Fishpond-lane, Holbeach	Urban District Council	F. Burdett Ward, M.S.A., 8, South Brink, Wisbech.
,,	28—Buildings, Extension of, Warrington	Electricity and Tramways Com.	S. P. Silcock, Archt., 6, Egypt-street, Warrington.
,,	28—Three Schools, Vieille Rue de la Porte du Sas, Ghent		Bureau des Travaux, Ghent, Belgium.
,,	28—Cottages and Farm Buildings, Lakenheath	West Suffolk County Council	A. A. Hunt, M.S.A., Archt., Abbeygate-st., Bury St. Edmunds.
,,	28—Council School, Additions to, Aldinghourne		H. P. Roberts, F.R.I.B.A., Thurloe House High-st., Worthing.
,,	29—Various Buildings, Cavalry Barracks, Redford	Secretary of State for War	The Director of Army Contracts, War Office, S.W.
,,	29—University, Extension of, Sheffield		Gibbs, Flockton, & Teather, Archts., St. James's-row, Sheffield.
,,	31—New Wards, Cottage Hospital, Tredegar		A. F. Webb, M.S.A., Blackwood, Mon.
,,	31—Saron M.C. Chapel, Penycae, Port Talbot	Chapel Trustees	D. L. Evans, Archt., Courtland Chambers, Port Talbot.
,,	31—Sorting Office, Enlarging, Rotherhithe	H.M. Works Commissioners	J. Rutherford, H.M. Office of Works, 22, Carlisle-place, S.W.
Nov.	1—Hospital, Additions to, Aketon, Normanton	Joint Isolation Hospital Com.	A. Hartley, Archt., County Chambers, Castleford.
,,	11—Rebuilding No. 18, Peas Hill, Cambridge	Town Council	The Borough Surveyor, Guildhall, Cambridge.
No date	—Eastern Valleys Brewery, Alterations at, Pontnewynydd	Phillips and Sons, Ltd.	Swallwell and Havard, Archts., 202, Dock-street, Newport, Mon.
do.	—Houses (16), Ashton-road, Castleford	Industrial Co-operative Soc. Ltd.	Garside and Pennington, Archts., Pontefract.
do.	—Warehouse, Alterations to, London, E.C.		C. V. Stevens and Co., 56, Buckingham Gate, Westminster.
do.	—Wesleyan Church Additions to, Mablethorpe		A. E. Lambert, Archt., 28, Park-row, Nottingham.
do.	—Vicarage House, St. Hilda's Church, Halifax		Jackson and Fox, Archts., Rawson-street, Halifax.
do.	—Parish Hall, Ardwick, Manchester	Bishop of Manchester's Commission	E. H. Lingen Barker, Architect, 78, King-street, Manchester.
do.	—New Spa, Bridlington		Freeman, Son, and Gaskell, Archts., 11, Carr-lane, Hull.
do.	—Greenmeadow Inn, Additions to, Llangeinor		Cook and Edwards, MM.S.A., Bridgend.

ELECTRICAL PLANT.

Oct.	17—Extra High Tension Cables, Shanghai	Municipal Council	Preece, Cardew, and Snell, 8, Queen Anne's Gate, S.W.
,,	19—Telephone Cables, Malines		Hotel des Postes, Place de la Monnaie, Brussels.
,,	21—Electrical Works, County Buildings, Dumfries	County Council	W. Arnot, Elec. Eng., 163, Hope-street, Glasgow.
,,	23—Storage Battery, Sale	Urban District Council	C. J. Wood Electricity Works, School-road, Sale.
,,	28—Plant, Warrington	Electricity and Tramways Com.	F. V. L. Mathias, Elec. Eng., Howley, Warrington.
,,	29—Steam Turbines, Condensers, &c., London, E.C.	East India Railway Co.	C. W. Young, Sec., Nicholas-lane, E.C.
,,	31—Telephone Instruments, &c., Wellington, N.Z.		The Public Works Office, Wellington, N.Z.
,,	31—Machinery and Plant, Damanhour	Egyptian Ministry of the Interior	Mons. Le Directeur, Ministere de l'Interieur, Cairo.
Nov.	4—Insulators, Melbourne	Deputy Postmaster-General	The High Commissioner for Australia, 72, Victoria-street, S.W.
,,	12—Two Alternating-current Voltage Regulators, Dunedin	City Corporation	The Town Clerk, Dunedin, N.Z.
,,	12—Switchboard, Adelaide		The Deputy Postmaster-General, Adelaide.
,,	12—Arc Lamps, Melbourne	Victorian Railways Commissioners	The Chief Storekeeper, Victorian Railways Offices, Melbourne.
,,	15—Overhead Electrical Equipment, Melbourne	Suburban Railways	Merz and McLellan, Engs., 32, Victoria-street, S.W.
,,	17—Plant, Pernik State Coal Mine, Sofia		Commission d'Adjudication, Sofia, Bulgaria.
,,	18—Electric Crane for Discharging Coal, Valencia Harbour		Com. Intel. Branch, Board of Trade, 73, Basinghall-st., E.C.
Dec.	3—Electric Motor, Melbourne	Victorian Railways Com.	The Secretary, Victorian Railways Offices, Melbourne.
,,	11—Switchboard, Wellington, N.Z.	City Corporation	The Electrical Engineer, Harris-street, Wellington, N.Z.
Mar.	18—Switchboards, Sydney, N.S.W.		The Deputy Postmaster-General, Sydney, New South Wales.

ENGINEERING.

Oct.	17—Waterworks, Diest, Brabant		Bourgmestre et Echevins de la Ville de Diest.
,,	17—Bridge Repairs, Durham	County Council	W. Crozier, A.M.I.C.E., County Sur., Shire Hall, Durham.
,,	18—Heating System, Workhouse, Cardiff	Guardians	S. W. Allen, M.I.M.E., Queen's Chambers, Cardiff.
,,	18—Water Supply, Swinefleet	Goole Rural District Council	G. England, Clerk, Bank Chambers, Goole.
,,	18—Motor Ambulance, Wimbledon	Corporation	A. S. Sheldon, Town Clerk, Wimbledon.
,,	20—Harbour Works, Porto Alegre, Brazil	Public Works Department	Directoria da Viacao Fluvial, Porto Alegre.
,,	20—Repairing Footbridge, Glanyant, Pengam	Gellygaer Urban District Council	F. Read, A.M.I.C.E., Council Offices, Hengoed.
,,	20—Fire Hydrants, Brussels		The Director, 91, Rue Ducale, Bruxelles.
,,	21—Irrigation Works, Loughborough	Corporation	A. Walker, A.M.I.C.E., Boro' Sur., Town Hall, Loughborough.
,,	21—Extension of Water Mains, Mettet, Namur		The Secretariat Communal, Mettet, Belgium.
,,	22—Extension of Chatelineau Water Service, Mons, Belgium	Gouvernement Provincial	M. le Gouverneur de la Province du Hainaut, Mons, Belgium.
,,	22—Bridgework, London, E.C.	Nizam's Guaranteed State Rly. Co.	M. T. Walker, Sec., Winchester House, Old Broad-st., E.C.
,,	23—Water Softener, &c., at Infirmary, Rotherhithe, S.E.		E. Pitts Fenton, Clerk, 283, Tooley-street, S.E.
,,	23—Quay and Breakwater, San Leonardo, Italy		The Ministry of Public Works, Rome.
,,	23—Pier Improvement, Southend-on-Sea	Corporation	E. J. Elford, M.I.C.E., Municipal Buildings, Southend-on-Sea.
,,	23—Heating and Electric Lighting Hospital, Motherwell	Lanark District Committee	W. E. Whyte, District Clerk, District Offices, Hamilton.
,,	23—Timber Groynes, Silloth	Holme Cultram U.D.C.	J. C. Boyd, A.M.I.C.E., 18, Bank-street, Carlisle.
,,	25—Water Extensions, Stanway, Evesham	Joint Water Committee	Willcox and Raikes, 63, Temple-row, Birmingham.
,,	25—Relaying Main, Elmdon	Saffron Walden Rural Dist. Council	J. A. S. Baily, Clerk, Saffron Walden.

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October 24, 1913. Volume CV.—No. 3068.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House, Strand, W.C.

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OUR ILLUSTRATIONS.

Gresham's School Chapel, Holt, Norfolk. View and plans. Messrs. John W. Simpson, F.R.I.B.A., and Maxwell Ayrton, A.R.I.B.A., Architects.

New Club-house, Toronto, Canada, for the Toronto Hunt. Messrs. Darling and Pearson, Architects.

New Cathedral, Tai-an-Fu, Shantung, North China. View and plan. Messrs. J. Francis Doyle and Sydney W. Doyle, Architects.

Lennards' Holiday Home, Weston-super-Mare. View and plan. Messrs. Bridgman and Bridgman, Architects.

Details of The Big School, Haileybury. Messrs. John W. Simpson, F.R.I.B.A., and Maxwell Ayrton, A.R.I.B.A., Architects.

Concrete Ice-House for the Northern Pacific Railway at Pasco, Wash.

Construction Generally, and Arches in Particular.

CONSTRUCTION GENERALLY, AND ARCHES IN PARTICULAR.

Building construction, as a science, has been evolved in the technical development of monuments erected to satisfy the requirements of various ages in which they were built; hence the work in them is typical of these ages. Modern construction should express modern ideas, in modern materials, and it is obvious that this construction must of necessity, where it is consistent, be original, for we cannot find any precedent for present conditions in olden times.

Before the invention of the locomotive, building construction was largely a matter of locality; but, in a small country like this, rail transit distributes material at a comparatively small charge, and special types of building can no longer be regarded as characteristic of localities which originated them. Where oak forests grew, "half-timber" construction was legitimate enough; but to parody such a method of building to-day in the suburbs of London, where no oak has been grown for ages, is absurd; and if the supposed oak is cement, or, what is worse still, a Swedish batten, the work is beneath contempt. Builders mercifully restrict this kind of construction to house gables, seldom venturing to treat whole walls in a similar manner, so that the folly is not so intolerable as it might be.

The expression "half-timber" is now applied to any wall built with wooden framing, and panelled with brick, or stuccoed; but the term was originally only applied to houses the lower half of which was wholly of stone or brick, whilst the upper stories, which projected beyond the walls, were necessarily of timber framing, with panelling as described. Truth in construction is one of the chief things to be aimed at in building; but, judging from the actual work of strenuous advocates for this, they appear never to have known the truth, or, if they did, they deliberately ignored it. Men have assured us that they hated shams in building, and when we asked why they lined a cement surface to look like stonework, the answer was: "to break the monotony of the surface." But they forget that this did not necessitate the blocks "breaking joint" in the courses. Really, of course, the idea was to make a cheap material look as if it were a costly one. This imitation of costly things by cheap substitutes, is a weakness of human nature, catered for on all hands. It is to be observed in our houses, the furniture we place in them, the pictures on the walls, and even in the clothes we wear. Honesty in building construction, especially the speculative part, is a virtue seldom practised nowadays, partly from ignorance, and sometimes from sheer neglect.

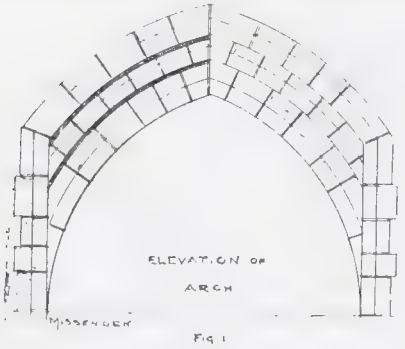
In the old times men, we are told, loved work. To-day they love strikes, and the increased cash which they bring, unfortunately, only to be badly spent in many cases, and to be wrung from the worker by the taxgatherer disguised as a State philanthropist. In the middle of the last century, it was claimed by the Goths for their architecture that it was at once noble, grand, and true, Renaissance work being neither of these. Pugin maintained this, and Ruskin asserted it with his usual vehemence; and one was a great architect, and the other an art critic of the first magnitude; but the infallibility of Gothic architecture, as manifested in its works, is clearly an assumption without reasonable grounds, and a captious critic of that style might point out as many absurdities in it as in Classic work, or in its progeny the Renaissance. In a Gothic parish church of either period, a striking feature is the arcading which divides the nave from the aisles. Now, has it ever struck the critics what an absurd piece of construction this is? Here are a number of solid triangles, each with its apex set on the top of a column, the whole being in such a state of unstable equilibrium that it would go over in a gale, unless it was supported in some way until the roofs are put on to hold it. It will be said that this is mere assumption—and that there is no danger whatever of such a wall going over. But, as we have built several arcades, we know from experience that this is not the case, and we always find in practice what theory would clearly indicate—that the danger in such cases increased with the span of the arches which formed the arcade. As a study in building construction, take, for instance, the Norman piers, arches, and walls over them in either of the cathedrals, and compare the stability of such work with that of the thirteenth century and later. Even "the man in the street" can see at once that immense strength is the characteristic of Norman work, while the later buildings are unquestionably weak. Things are not all they seem to be, and these ponderous masses of masonry, though they satisfy the eye, have frequently failed under a more distressful trial—namely, that of the weight they were meant to carry in safety.

To build a pier 6ft. or 8ft. in diameter, faced with cut stone regularly coursed, would seem to be an easy matter, and so it would be if every course was worked up in cut stone to suit the facing. But the piers were not built in this way. Soft stone facing, concealing a heart filled with rubble, was all the Norman could do; hence the hearting sunk away from the facing, there being so many mortar joints in it; and this facing, not having strength enough to carry the superincumbent weight, cracked from capital to base. The Norman idea of building was magnificent; but the thing itself fell sadly short of that which such a lavish use of material promised. The Normans, too, were bad judges of the weathering properties of stone, and their immediate successors made the same mistake. They used soft stone, often carrying it immense distances, and to places where better local stone could be obtained.

When writing on building construction, authors generally forget that for practical purposes there are two kinds of stone, and that each requires separate treatment in the specification and quantities. The labour in working a hard stone, which can only be cut with a toothless band, supplied constantly with sand and water, is, of necessity, totally different from that which can be cut with a tooth-saw and carpenters' chisels. The Normans liked the latter best, and if anyone interested in the subject will take a turn in one of the many galleries which pierce the Lower Chalk Hills between Reigate and Godstone, he will get some idea of the trouble taken by the old builders to obtain an easy-working stone, which had the great defect of losing three or four inches of its face after an exposure of 500 years. Soft stone is valuable for inside facings, where it is necessary that moist air should not have its moisture condensed by striking against it; but, for outside work, a hard weather stone should always be used. Hardness is, however, no guide to the weathering property of a stone. Lias limestone, for instance, is hard, but it is a bad weather stone.

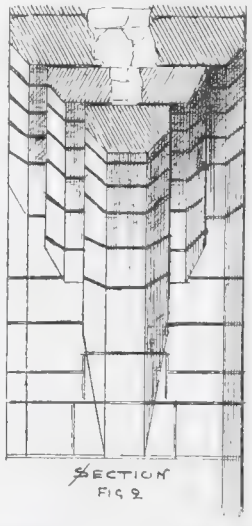
We quoted authorities in support of the truthfulness of Gothic architecture; but, though they agreed on that point, they were hopelessly in conflict about many others, for Ruskin held "scarlet and candles" in contempt, while Pugin worshipped them. Ruskin said that not only was Pugin "not a great architect, but he was one of the smallest possible or conceivable architects," who ought to be put under a pyx and left there! Pugin, like Ruskin, was a good draughtsman; but neither of them was a practical builder. Gothic men hated shams; they were continually denouncing them. Yet that did not prevent them from having such put up all over the country, for they failed to recognise in their own work what was so apparent to them in the work of others. Why not get out of all this trouble about styles by admitting at once that there is a fashion in architecture, as in dress, and

that the end of a Greek temple forming the front of a cinematograph theatre is not more inconsistent than a hobble skirt cleft to the knee? The men who built Greek and Roman temples must have worked out some basic ideas when they raised such structures; but what conceivable thing can a man be possessed of, except it be a demon, when, in this twentieth century, he copies such a thing, even for a place of worship, with its "egg and dart" phallic emblems, and the skulls of oxen, redolent of sacrifice to Jupiter, or some other



equally shady Roman divinity of a thousand years ago.

After this digression from practical work, we will return to the latter, and examine the accompanying illustration of a Mediæval tower wall five feet thick, spanning about ten feet. (See Figs. 1 and 2.) The whole of this arch is cut stone in a series of recesses, with chamfered rings, the outer chamfer running down the jambs to the floor-level, constituting this part of the work, responds. This mode of construction gives the idea of great strength, and if the chamfers were broken up into recessed hollows and boltels, they would have the effect of apparently weakening the arch considerably. It will be observed that each ring, though jointed from its own proper centre, has no joint in line with any one of the next ring—they "break" in fact; but in jambs, even where the mouldings are carried down, the horizontal joints are always in line—they do not break. Large stones do not look well in work of this kind, and if the courses in the jambs do not rise more than 9in., or thereabouts, it will look all the better for it. Proper centres are necessary for arches of this sort. They should be amply strong, and made so that the stone-setter can see his joints all round. Unlike Classic work, there is no keystone in a Gothic arch; the mitre at the head, where chamfers or mouldings intersect, is always a joint. When the inner ring in this example is set, it forms a centre, on which the other members are turned. A very important thing in connection with centres is, that they may be "struck" without disturbing the work resting on them, and this must be borne in mind when arranging their supports. All centres should drop vertically, and in many cases they might, with advantage, first be eased, to note the behaviour of the work they support, before they are completely removed. Brick arches over cellars and tanks are usually very flat, and when they are built with mortar joints, they settle down considerably. Once, in our experience, the brick arch came down with the centre. A good plan in turning brick arches of such span is to turn them dry; that is, fitting brick to brick in the centre, and then, when all the bricks are laid, grout them thoroughly with cement mortar. There is, however, a difficulty in doing this, for unless the grout is very thin, it will not run into the joints—and when it is thin it will run through the joints, and it is lost; but, with care, this work can be done. If, when the bricks are being placed in the centre, a strip of cement mortar is run along each joint, on the centre, it would make the arch grout-proof; but the main consideration is, that the joints in the brickwork of a flat arch should not be filled with a mortar that will squeeze flat and let the arch down when the



centre is struck. In turning the stone arches of nave arcades we were always compelled to stiffen the centres laterally, to prevent the whole of the stonework, and the centres, from swaying backwards and forwards by wind pressure, or even by the workmen moving on the scaffolds.

THE ROYAL SOCIETY OF BRITISH ARTISTS.

This year's exhibition of the Royal Society of British Artists is respectably above the recent average, and almost free from the eccentricities of the impressionist. There are some good portraits, and the water-colours are better than usual, and some of them well worth study.

Naturally a melancholy interest attaches itself to the portrait of the late President, Sir Alfred East, painted by himself for the Uffizi Gallery at Florence (11), and to his autumn landscape, "Glowing October" (40). The first is decidedly better than most self-portraits, and the second is quite equal to some of the deceased artist's better-known works—perhaps in one or two essentials better. The Secretary, Mr. W. M. Palin, has three works of considerable merit. His portrait of Mr. W. E. Riley, F.R.I.B.A., the Treasurer (21) is good; and "Silvery Grey" (115) and "A Hazy Morning" (142) may challenge anything in the exhibition of similar character. Mr. W. E. Riley himself has three welcome exhibits, "A Summer Shore" (153), "Dorset Shore" (185), and "The Barrel-Maker's Quay, Ghent" (222).

In the Long Gallery the most notable works are "Childhood" (3), by Mr. Frank O. Salisbury; "Midst Tree and Bracken" (4), by Mr. H. Charles Clifford; and "A Midland Slag Bank" (12), by Mr. H. Davis Richter, perhaps a romantic but certainly a powerful idealisation. His "True Harmony" (16), "The Window" (117), "Iceland Poppies" (143), "Yellow Daisies" (170), and "Roses" (182) are all excellent. Few flower-piece painters of to-day can rival Mr. Davis Richter's rendering of real floral beauty. Of Mr. Frederick Whiting's five exhibits we like best his "Sybil in Red" (22) and "The Green Boat" (163). Mr. A. W. Elphinstone's "Trouville sur Mer" (29) is a rougher, sterner presentation of the gay watering place we all seek sunshine at, but no one can fail to be struck by its power. His "Sicilian Village" (144) and "The Storm Cloud" (208) are good, and so is his etching in the vestibule of "A Street in Dijon" (323).

In the South East Gallery the two most noticeable pictures are "In Snowdonia" (61), by Mr. W. Wortley Manning, and Mr. F. F. Foottet's Jewish immigrant, "The Stranger Within the Gate" (66), in which genuine sympathy is displayed which will touch many a beholder. We like Mr. Horace Middleton's "Memories" (96), and Mr. R. G. Eves' Portrait of Sir C. Clementi-Smith (109).

In the North West Gallery Mr. W. T. M. Hwksworth has a quiet but very satisfactory view of "The Town Hall, Lynn" (171), and another of "London River, from Southwark Bridge" (165). "The Estuary of the Taw, N. Devon" (188), by Mr. J. W. Schofield is worth notice, and so is "Assisi" (214), by Mr. Lewis C. Powles.

In the North East Gallery, "The Mill" (231), by Mr. Edward Brown; "Lewes Downs and the Newhaven Valley" (234), by Mr. Vivian Rolt; Mr. F. Hamilton Jackson's two subjects, "Boats Going to Torcello" (236) and "In the Old Part of Viterbo" (237); "Waiting for the Boats: Fishergirls of Zeeland" (248), by Mr. J. Finnemore; "The Hours of the Evening" (254), by Mr. R. J. Enraght Mooney; and "Stratford Lock" (263), by Mr. Walter Burroughes-Fowler, all well deserve mention.

THE SOCIETY OF ARCHITECTS.

A special general meeting of the Society of Architects, the first gathering for the present session, was held on Thursday evening in last week at 28, Bedford square, W.C., the chair being occupied by the President, Mr. Percy B. Tubbs, F.R.I.B.A.

ELECTION OF OFFICERS AND COUNCIL.

The President read the report of the scrutineers (Messrs. Herbert Freyberg, T. Stewart Inglis, Sidney Marsland, and E. W. Harvey Piper) of the ballot for the election of officers and Council for the ensuing session. They stated that they had received and examined 193 voting papers. Of these seven were rejected on account of absence of a signature on the envelope, two because posted too late, and one as being signed on the ballot paper, a total of ten found invalid. The voting was as follows: President: Percy B. Tubbs, F.R.I.B.A., 183 votes (unanimous); Vice-Presidents (two): R. Goulburn Lovell, A.R.I.B.A., 183, and E. C. P. Monson, F.R.I.B.A., 182; Past-Presidents (two): George E. Bond, J.P. (Rochester), 183, and E. J. Hamilton (Brighton), 183. Hon. Secretary: Col. F. S. Leslie, R.E. (Woolwich), 183. Hon. Treasurer: Charles E. Jackson, 183. Hon. Librarian: Henry Adams, M.Inst.C.E., 183. Members of Council (eighteen seats, twenty nominations): Edwin J. Sadgrove, F.R.I.B.A., 175; Gilbert A. Harrison (Oxford), 174; E. J. Partridge, F.S.I. (Richmond), 169; R. Cecil Davies (Chester), 168; R. A. Jack, 168; Herbert W. Matthews, 168; George H. Paine, 165; J. Herbert Pearson, 161; Noel D. Sheffield, 159; George E. Dickens-Lewis (Shrewsbury), 158; William H. May (Plymouth), 158; P. M. Beaumont, A.M.Inst.C.E. (Maldon), 154; B. R. Tucker, M.R.San.Inst., 154; Henry A. Cooper (Kettering), 153; A. Alban H. Scott, M.R.San.Inst., 153; Harry Gill (Nottingham), 148; James A. Bowden, 146; Thomas Wallis, 146; and Charles E. Salmon (Reigate), 143. The scrutineers added: "It will be noted that Mr. Bowden and Mr. Wallis received an equal number of votes, and it remains, therefore, under the Articles of Association, No. 49, section 7, for the members present at the special general meeting to 'decide, by giving the casting vote, or votes, necessary to remove the equality and complete the election.'"

The names of the candidates affected were then submitted to the meeting, and, on a vote

being taken, Mr. Thomas Wallis was declared elected.

The scrutineers' report was then adopted, and a hearty vote of thanks accorded to them for their services.

CHURCH PLATE.

Mr. Christopher A. Markham, F.S.A., of Northampton, then read a paper on "Church Plate," illustrated by a collection of photographs and a number of original drawings.

In this paper it is proposed to follow the classification of Messrs. W. H. St. John Hope and J. N. Fallow, which cannot be improved.

Taking first the chalice, as the more important of the two vessels, we ought first to consider the three parts of a Mediæval chalice. First, there is a small bowl for the wine; secondly, a stem to connect the bowl and foot, with a knot in the centre, by which the vessel was held; thirdly, the foot on which it stood. Each of these parts changed its shape as time went by, the plain, simple form developing into the beautiful and elaborate chalices used immediately before the Reformation. And first I should like to say a word about coffin chalices. The oldest chalices now in existence are those which were found in the graves of ecclesiastics. The treatment of this subject would form a paper for itself, and therefore can here be but lightly touched on. It appears that during the twelfth and subsequent centuries it was the general custom to bury with an ecclesiastic, as a symbol of his calling, a small chalice and paten. For bishops and the higher dignitaries of the church these vessels were made of silver, while for the parish priest tin or pewter was used. All these coffin chalices are of the very earliest shape, with round feet. I may describe one set which was found in Northamptonshire, in a grave in the north aisle of Nassington Church. In this grave, with the skeleton of a man, there were three escallops, or palmer's shells, each pierced with two holes for hanging on the dress. These shells were the privileged sign used by persons returning from the Holy Land. This little chalice and paten are of pewter. The chalice has a shallow, bell-shaped bowl with slight lip; the stem is slender and cylindrical, with knot in the centre; and the foot, which has been much damaged, was circular. The paten has a single circular depression, with rather broad edge. These are of the earliest type, and may be assigned to the middle of the 13th century.

Returning to Mr. St. John Hope's classification of chalices, we find that there are four types with round feet, known as A, B, C, and D, and the same number with polygonal feet, known as E, F, G, and H; and these I propose to mention in their proper order, taking first type A, which was in use *circa* 1200 to *circa* 1250, and of which there are only three principal examples remaining. Of these, the most important is the chalice which was until quite recently in the church at Berwick St. James, Wilts, and is now in the British Museum. This is of the early part of the 13th century. It is parcel gilt, and quite small, its height being only 5⅞in., and the width of bowl and foot 4⅝in. The bowl is broad and shallow, with slight lip, as in all early chalices, a cylindrical stem, with circular knot in the centre, and broad spreading circular foot, the whole being perfectly plain. Type B, *circa* 125 to *circa* 1275, has a broad and shallow bowl, the stem and knot being worked separately from the bowl and foot, and either the stem or the knot, or both, being polygonal, the foot being plain and circular. Examples of this type occur at York, Lincoln, and Exeter. Type C, *circa* 1175 to *circa* 1300, still has a broad and shallow bowl, the stem and knot being as in the previous type, and the foot being still circular, but with its spread worked into ornate lobes which radiate from the stem over the surface of the foot. Chalices of this type exist at York, Salisbury, and Chichester. Type D, *circa* 1300 to *circa* 1350.—Chalices of this type have a deeper and more conical bowl than those of earlier date; but the other parts are as before described. There appears to be only one specimen of this type, which was found in the supposed grave of William of Melton, at York, who was Archbishop from 1317 to 1340. On the foot of this chalice is engraved a crucifix, which is the earliest example of such an addition. This brings us to the middle of the 14th century, and the drastic change from the round foot to that of polygonal shape. The change was no doubt introduced because at this period a custom obtained in Western Europe of laying the chalice on the paten to drain after the celebration of the High Mass. Now, a chalice of the round-footed type would be very liable to roll when laid on its side, and therefore the foot was made with points, so as to prevent such tendency to roll. The hexagon was, at the same time, chosen because its points are further apart than any other practicable shape. Another result of this custom of draining the chalice was that the bowl was made conical in shape, so as to allow of its being more easily drained when laid on its side. After these few words of explanation, we must return to our classification. Type E, *circa* 1350 to *circa* 1450, is the earliest with a polygonal foot. The bowl is deep and conical, as in the previous type; the stem and knot are uncertain in shape; the foot, however, is always of six points or lobes. The earliest chalice of this type is at Hamstall Ridware, in Staffordshire, the date of which is about 1350. The bowl of this is deep and conical; the stem and knot are circular, the latter being formed of sections twisted spirally; the foot is formed of six points, with a beaded pattern running round the lower edge. Another example, at Goathland, in Yorkshire, is about a hundred years later than that previously mentioned; it has an hexagonal stem with plain knot, having the same number of sides, and on one compartment of the hexagonal foot is engraved the "I.H.C."

Type F, *circa* 1450 to *circa* 1510. The chalices of this period have the bowl deeper, more conical, and usually quite plain, though sometimes with a text round the edge. The stem has six sides, and is longer than in previous examples, and is sometimes covered with tracery, having buttresses at the angles. The knot is more ornate, and usually beautifully worked with angels' heads, flowers, or other designs; and, indeed, it reminds one of a boss on the ceiling of a building in the Decorated style. The foot is usually plain and flatter than before, and the points are sometimes worked into trefoil knops, and a crucifix is usually found in one of the compartments. There are at least a dozen chalices of this type still remaining. Type G, *circa* 1510 to *circa* 1525.—The chalices of this date have further developed, but hardly for the better. The bowl is somewhat shallower and more square at the base; the stem and knot are as before; the foot, however, is quite different, as the points have become large lobes, thus making it sexfoil in plan, with a vertical edge. There are three of these chalices, the earliest and best being Bishop Fox's gold chalice at Corpus Christi College, Oxford. Type H, *circa* 1525 to *circa* 1540.—This is the last distinct variety before the Reformation, and four examples still remain, which are more architectural in character than anything we have previously noticed. The bowl is broad and shallow, being more like the earlier hemispherical forms, and it generally has a legend or text round the edge. The stem is more ornate, and strengthened at the angles by buttresses or cable moulding. The knot is wider and flatter than in the preceding type. There is a kind of pierced parapet which connects the stem with the upper part of the foot, and this in its turn has a sort of buttress at each angle. The lower part of the foot is quite flat, and may be described as a wavy-sided hexagon, and there is generally a crucifix in one of the panels, and also a legend round the foot.

So much for the Pre-Reformation chalices, and now for the patens, which appear to be somewhat older, and of which a greater number remain, over eighty examples being known. Patens again are divided by Mr. St. John Hope into two main classes. First, those which have a circular depression, with an inner depression multifoil in outline, and which form the greater number. Secondly, those which have only one depression, which may be either circular or multifoil. Almost every paten has some design in the centre, those of the earlier date generally have the "Manus Dei," or Hand of God in the Act of Blessing, while those of the later date have the "Vernicle," or Face of Our Lord. Sometimes, however, the Holy Trinity, the Holy Lamb, the Sacred Monogram, or other symbol is found. These patens are divided into seven types as follows. Type A, *circa* 1180 to *circa* 1260. These patens have a circular depression, with an inner depressed quatrefoil, of which several examples remain; one has the "Manus Dei," another the Holy Lamb, and a third the figure of a bishop. Type B, *circa* 1260 to *circa* 1300. The patens of this period have a lower, or single, depression octofoil or multiple, and they generally bear the "Manus Dei." The most remarkable example of this type is the paten still in use at Wyke Church, near Winchester, which is parcel-gilt; the first depression is circular, the second octofoil, and the third again circular, with the symbol of the Holy Lamb roughly incised. Its date is about 1280. Type C, *circa* 1300 to *circa* 1350 and later, has the upper depression circular and the lower sixfoil, with the "Manus Dei" or the "I.H.C." in the centre. Type D, *circa* 1430 to *circa* 1530, comprises some half of the existing patens, and is similar to the last-named, except that the spandrils of the second depression are ornamented with a kind of raised leaf. The central ornament is various, but the "Vernicle" is usually employed. Type E, *circa* 1450 to *circa* 1510.—The patens of this type have a single circular depression, and usually the sacred initials "I.H.C." or "I.H.S." are engraved in the centre. Type F, *circa* 1525, resembles type D, with varying central device, which, however, is surrounded by a glory of rays, and there is usually a legend round the edge. Type G, *circa* 1520 to *circa* 1535, is an elaboration of type E. The patens of this period have a single circular depression, with a device surrounded by a glory of long rays, and the rim has an engraved legend. No doubt in the cases of both chalices and patens, as in architecture, these types overlapped each other, and the dates given by Mr. St. John Hope are only approximate.

Having sketched the history of Communion plate before the Reformation, we must now pass on to say a few words about that very disturbing period of English history. But first I would draw your attention to the grand display of plate which might have been seen in our abbeys, cathedrals, and parish churches in the Middle Ages. Even in the smaller churches there would always be two or more chalices, each with its paten, generally gilt or parcel-gilt, and often enriched with precious stones; always two or more candlesticks, crosses, chrysmatories, pyxes, and censers—the latter often in the form of ships. Flagons do not seem to have been used, but frequent mention is made of cruets. In Pre-Reformation times, as now, church plate was almost always the gift of an individual, and occasionally one comes across a bequest in a Mediæval will or some other record of such a gift. Thus in 1246 King Henry the Third gave a chalice for the Church of All Saints, and smaller vessels for the other parish churches in the town of Northampton. The Rev. Thos. Lufwyck, rector of Burton Noveray, Co. Leicester, in 1390, by his will gave to Lufwyck, or Lowick, Church, in Northamptonshire, his "best silver zone to make a chalice." Edward Brudenell, of Deene, in Northamptonshire, by his will, dated June 21, 1425, bequeathed to St. John's Hospital, Aynho, in the same county, his missal and a chalice. William Holt, of East Carlton, Northamptonshire, bequeathed by his will, dated August 24, 1497, "To the house of the Abbey of Sand all my plate, there to remayne and abyde for ever. . . . I restore to the Chappell of Holtt a chalys of selver." I do not propose to treat the period of the Reformation at any length, as this paper only professes to deal with the

fashion and design of Communion plate. Suffice it to say that after the year 1534 the work of spoliation commenced, and has ever since been going on merrily. First came Henry VIII., who in 1539-40 suppressed all religious houses throughout the realm, and, of course, appropriated their possessions; at the same time, he appears to have taken many of the silver vessels from the parish churches, instructing his commissioners to leave only sufficient for the use of the church. As showing the completeness of the sweep made at the time of the Reformation, I may mention that in the 330 parish churches in Northamptonshire there is but a single piece of Mediæval plate. This is a little silver-gilt paten five inches in diameter, with the centre sunk in a circle and sunk again in hexafoil, with plain spandrels, and the "Manus Dei" in a circle in the centre, and it is of the approximate date of 1330. When incumbents and churchwardens found how the matter was going they also began to dispose of their church plate. Between the years 1547 and 1552 great numbers of churches were represented as having been broken into and the plate stolen. No doubt, in many cases, this was a pretence, to account for the disappearance of the silver which had been thus alienated. In 1552, when King Edward gave orders to make an inventory of the Church goods and seize certain for his use, the commissioners were still instructed to leave "one, two, or more chalices or cuppes, according to the multitude of the people." The inventories then made are still extant for many parts of the country, and a number of these have been printed in the various county histories of church plate. At this time the King also ordered that "all monuments of feigned miracles, pilgrimages, idolatry, and superstition" were to be destroyed, and all chalices coming under this clause were melted up and fashioned into cups. It is supposed that about the year 1562 some general order was issued in London as to the shape of these cups, for almost all the cups in England made between 1562 and 1570, or a little later, are practically identical in their outline, though they all vary in minor points. No such order has been found, but unless some such regulation was passed it is impossible to account for extraordinary similarity between the cups of this period, whether found in Gloucestershire or Cheshire, in Suffolk or Monmouth. It appears that this is a similar matter to the vexed question of low side-windows. It seems to me that a general order was also issued during the reign of Henry VIII., directing that all such windows should be walled up, and that under this order low side-windows from one end of England to the other were closed by brick or stonework. But here, again, no such order has been found. I should like to mention, in passing, that at the present time it is quite improper to speak of a "chalice," the correct word being "cup." Indeed, the word used in the Book of Common Prayer is invariably "cup," except in one side-note, where the priest is "to lay his hand upon every vessel (be it chalice or flagon) in which there is any wine to be consecrated." This, I would suggest, is to meet the case of a parish which was the possessor of a Mediæval chalice. It must be understood that in the following remarks I am dealing more with the church plate of Northamptonshire than any other county; but, in any case, this county is quite a typical one, except with regard to Pre-Reformation plate, of which it only possesses the solitary paten previously mentioned. At Clapton, in Northamptonshire, there is a very fine silver-gilt cup and cover paten which, as it is the earliest, is also the most beautiful in the county. This was made in the second year of the reign of Edward the Sixth, and is probably the second earliest Post Reformation cup in England. At Great Houghton there is another cup, also made in the reign of Edward, though five years later than that at Clapton. This, it will be noticed, is more like the regular Elizabethan type, which is found from one end of England to the other. The lines and ornamentation of this cup are very good. There are two cups, somewhat like that last described, at Clipstone and Kislingbury, which were made about the year 1562. They are of hammered metal, and were perhaps by a local maker, as they bear only the maker's mark. Then come a splendid series of cups, each with its cover paten, made between the years 1568 and 1570, of which there are 126 in the county of Northampton. These are all much alike, but no two are identical, the form and ornamentation differing in each, and some of them have the stem without a knot. The next series are standing cups with covers, which were not intended to be used as paten, of which we have good examples. The Corby cup is entirely silver-gilt and richly ornamented, and is of beautiful design and workmanship; the Furtho cup is also gilt, and is covered with a very curious ornament. There are only two beakers in the county. That at Upton is probably of German manufacture, and, curiously enough, the other is at the adjoining parish of Sutton, and was probably made by a local workman on the pattern of that at Upton. At Cottesbrook there is a cup which was made in 1635, and is in the form of a pre Reformation chalice. This has a small conical bowl; a tall stem, with knop in the centre, both with six sides, and a spreading six-pointed foot—altogether a very rare shape for that period. In the middle of the seventeenth century another type of cup was introduced, of heavier design, with bowls of great capacity and clumsy form, thick stems, and plain feet. The vessels now at Loddington, which were made in 1671, were, perhaps, originally domestic, and afterwards given to the church. One is like a small porringer, or candle-cup, with two handles, and the other like a mazer. The curious little vessel at Plumpton, made in 1694, might serve either as cup or paten, but is now used as the latter. It is of quaint design. A few good pieces of Communion plate were made early in the 18th century by that celebrated artist Paul de Lamerie, and after that time the forms of the patens, cups, and flagons degenerated very much, and nothing can be less artistic than the vessels made in the 18th and 19th centuries. Flagons do not appear to be earlier than the beginning of the 17th century. The first made in Northamptonshire was hall-marked in 1605, and is at Great Brington, and it is quite plain. The very beautiful flagon at Easton Neston was made in 1735; it is entirely gilt, and is a good specimen of the work of Paul de Lamerie. Many of the flagons of this period are of great size, and those at Peterborough Cathedral weigh over one hundred ounces each. Alms-dishes are not, in general, of much interest, though sometimes they are of fine design. At Peterborough Cathedral there is a very beautiful alms-dish, silver-gilt, 19½in. in diameter, which was made about 1650, and weighs 54oz. It is ornamented round the edge with fruit and flowers, representing Peace and Plenty, in repoussé-work. At Finedon there is an alms-dish, 2in. high and 14½in. in diameter, which is composed of about 350 pieces of mother-of-pearl, which are curved and riveted together in a very beautiful and accurate manner. This is probably of foreign workmanship. Of christening-bowls we find a few at different villages. For instance, at Finedon there is a christening-bowl which, like the alms-dish at the same place, is composed of mother-of-pearl, the sides being formed by fourteen curved sections, each of which is a shell. The whole is riveted together so accurately that the bowl will hold water. A number of small dishes will be noticed, of which I have drawings of two. These are generally used as bread-holders. In Northamptonshire there are some half-dozen strainer-spoons, the greater number of which are modern and unimportant; but that at Dullington is an Apostle spoon which was made at York in 1597. I should say a few words about pewter vessels, of which there is a great quantity all over England, much of which still continues in use. In Northamptonshire there are some sixty-six flagons of pewter. The earliest dated example is that at Werrington, which is inscribed 1609. Some of these flagons are large and handsome, some are quite plain, and some battered out of all knowledge. At Warkton there is a curious old pewter paten, on a foot, with the remains of a cover. There are several pewter christening-bowls, and also one pair of pewter candlesticks. Several hundreds of plates still remain, of all sorts, sizes, and shapes, most of which have received considerable damage during their long years of service. Some of these have been used as patens, the upper surfaces having been much cut, while others have been used as alms-dishes. At Stanton Wyville Church, in Leicestershire, there is a complete and very handsome set of Communion plate, which was made in 1699. This consists of a good-sized cup, a paten on foot, a tall flagon with lid, and a very large alms-dish.

Mr. S. W. Kershaw, M.A., F.S.A., in proposing a vote of thanks to Mr. Markham, emphasised the importance and necessity of insuring the safe custody of plate belonging to churches, and of prohibiting its being disposed of in any unlawful manner.

Mr. Herbert Freyberg, F.S.I., seconded the motion, observing that there was considerable scope for the architect as treasure hunter as well as designer in this matter.

Messrs. B. R. Tucker, A. H. Salisbury, and F. Dendy Wray also spoke, the last speaker severely criticising the design of some modern church plate, which he regarded as deplorable. Many cups were merely copied from those in old pothouses, and were totally lacking in beauty of line and proportion.

Mr. Markham briefly acknowledged the vote of thanks, which was carried by acclamation.

VALUATION TABLES.*

The compilation of this volume must have been a work of much careful and intelligent labour. That, of course, might be bestowed by any intelligent author versed in his subject, but Mr. Parry's illustrations and examples are quite above the capacity of the average compiler, and are most valuably suggestive.

The passing of the recent Finance Acts has probably convinced most valuers of the insufficiency of existing tables that are available, and they will gladly avail themselves of this more extended and comprehensive series, arranged as it is in such convenient order.

The extension of the valuation tables consists mainly in the figures of years' purchase being given at rates of interest ranging up to 15 per cent., and worked out in all cases complete from 1 to 100 years. The figures given are worked out not only on the basis of the assumption that capital can be redeemed by the investment of an annual sinking fund at the same rate per cent. as that at which interest is required, but also on the assumption that sinking funds can only be invested at such low rates as 2½, 3, 3½, and 4 per cent. The present value of £1, the amount of £1 per annum, and the amount of £1 are given in all cases at rates up to 15 per cent., and for terms up to 100 years, and the annual sinking funds at twelve different rates ranging from 2 to 5 per cent.

The Life Tables are based on the Carlisle and Northampton Tables of Mortality. Mr. Parry's partner, Mr. B. W. Adkin, whom so many successful aspirants remember with gratitude and esteem, has written the explanation of the use of the table of years' purchase for the enfranchisement of copyholds.

The volume will take its fitting place in every valuer and surveyors' office as the text-book of its time, and few architects or builders can afford to dispense with its often needed and reliable help.

Councillor C. Winkley, master builder, of Clapton Common, has been selected by the Municipal Reform majority at Hackney to be the new mayor of that borough. He is a native of Hackney, where he was born fifty years ago, and has had a large share in the development of property in Bethnal Green, Shoreditch, and Spitalfields.

* Valuation Tables. By Richard Parry, B.Sc. (Lond.), F.S.I., A.M.I.C.E., Barrister-at-Law. London: "Estates Gazette" office. 7s. 6d.

THE A.A. ANNUAL REPORT.

The annual report of the Council of the Architectural Association, published in the familiar "Brown Book" this week, states that the Association completed its 66th session on May 31, 1913, and the membership at this date was 1,555. Sixty-five new members were enrolled during the session, and one ex-member was reinstated. The losses by resignation and death amounted to 117. It is with regret that the Council chronicles the death of a number of members: Messrs. P. R. Bradford, J. F. Bull, A. Huntley, E. B. l'Anson, T. E. L. James, A. L. Levy, W. G. B. Lewis, R. F. MacDonald, J. Oldrid Scott, S. A. Stanger, W. F. Unsworth, T. H. Watson, and J. M. Whitelaw.

The Council report that the school is in a flourishing condition, and the number of students has increased. The new third year day-school course, under the direction of Mr. Robert Atkinson, has been very well supported, and a number of the students are continuing for a fourth year. The keenness shown by the third-year men and the admirable work they have produced prove the value of an additional year in which the elements of monumental design form a part of the training. The Council have to announce the retirement of Mr. H. P. G. Maule from the head mastership of the school. They wish to place on record their appreciation of the excellent work which Mr. Maule has done during the past ten years on behalf of the school. During this time he has made it the largest and most successful school in the country. The Council feel that they are exceptionally fortunate in obtaining Mr. Robert Atkinson to succeed him. The funds at the disposal of the Council for prizes have been re-allocated and adjusted to the present needs of the students, and it is believed that in their new form they will be of greater educational value. A new Henry Jarvis Scholarship has been placed at the disposal of the Association by the trustees of the Henry Jarvis Bequest. Under the will of the late Mr. William Glover the Association received a legacy of £200 Consols. It has been decided to place the interest received annually from this legacy to the prize fund.

The Council again thanks the Royal Institute of British Architects for its annual grant of £100 towards the educational work of the Association, and for their subscription of twenty guineas to the Royal Architectural Museum.

During the session exhibitions were held of work by past students of the school; of drawings of London; of drawings by the late Mr. R. Norman Shaw, and of French architectural drawings and work by students of l'Ecole des Beaux Arts, Paris.

The Council, early in the session, gave consideration to the position of architectural assistants under the National Insurance Act, and, having concluded that it would be to the advantage of architects' assistants to form an approved society, the Council approached the Royal Institute of British Architects, the Surveyors' Institution, the Society of Architects, and the Quantity Surveyors' Association, with a view to securing their co-operation. As a result, the Architects and Surveyors' Approved Society was founded. Considerable financial support was afforded by the various institutions concerned in the formation of the society, the Association making a donation of £20, and in addition to this granting the new society the free use of an office on the Association's premises. The Council understands that the society, which has a committee of its own of representatives of the two professions concerned, is working very successfully, having a membership of upwards of 1,800.

The scheme for alterations and improvement of the premises embarked upon at the end of last session was completed during the school summer vacation. The cost of the alteration has been met out of the general fund. The ordinary meetings, which were reduced to eight in number, were well attended, and papers were read by Mr. Gerald C. Horsley, F.R.I.B.A. (President), and Messrs. Lawrence Weaver, F.S.A., J. A. Marshall, Horace Cubitt, A.R.I.B.A., W. R. Colton, A.R.A., R. Caulfield Orpen, B.A., P.R.I.A.I., W. R. Lethaby, F.R.I.B.A., and Edwin Gunn, A.R.I.B.A. Visits were paid on Saturday afternoon to various buildings in progress.

LONDON COUNTY COUNCIL.

At Tuesday's meeting of the London County Council, Mr. Cyril Cobb, the chairman, made the annual review of the work of the Council. He stated that the Council's tramways carried 512,652,729 passengers during the year ended March 31 last, while the income from the tramways amounted to £2,251,729. The estimated cost of the damage caused by fires attended by the Fire Brigade during 1912 was £427,144, as compared with £789,003 in the previous year. This figure is the lowest since 1904. Applications dealt with under the London Building Acts increased from 2,885 in 1911 to 3,139 in 1912, while nearly 7,000 dangerous and neglected structures were dealt with during the same period, as compared with 6,400 in the previous year. The number of applications for music and dancing licenses was 544, 46 in excess of that in the previous year. Mr. Cobb mentioned that the erection of the Maudsley Mental Hospital at Denmark Hill will be proceeded with as rapidly as possible. The hospital will add 108 beds to the total accommodation available for the county. The assessable value of the county on April 6 was £45,023,091. While the annual increase in the next few years is not expected to be great, there will, it is anticipated, be a substantial growth in the rateable value of London for some years to come.

The Council, after some discussion, approved a plan for the laying-out of the remainder of the southern section of the White Hart-lane Estate at Tottenham and Wood Green for development on the lines of a garden suburb, for the accommodation of persons of the working-class and others, the Road Board to be asked whether it would be prepared to make a contribution towards the cost of reconstructing a road 100ft. wide on the estate, to form part of a suggested new main arterial thoroughfare between London and Cambridge.

The Improvements Committee reported that the County Council recently decided to undertake, in co-operation with the Government and the Westminster City Council, a scheme for the completion of the Mall to Charing Cross improvement, and the opinion was expressed that, should a Bill be necessary, it would be advantageous for the measure to be promoted by the Government rather than by the County Council. The committee of the Council reported that the Government is prepared to agree to the course suggested, subject to Treasury sanction being obtained as to costs. The estimate of the net cost of the improvement amounts to £115,000. The committee recommended that the Government be requested to proceed to seek Parliamentary authority for the completion of the improvement in accordance with the scheme already approved.

The Improvements Committee further reported that the Council on March 13 last agreed to undertake the widening of Bromley-road at an estimated cost of £22,500. In connection with the erection of new premises in the thoroughfare, an opportunity has occurred of continuing the widening for a distance of about 730ft. The cost of acquiring the additional land required and of executing the further works involved is estimated at £1,050, and the committee recommended that the additional improvements be carried out.

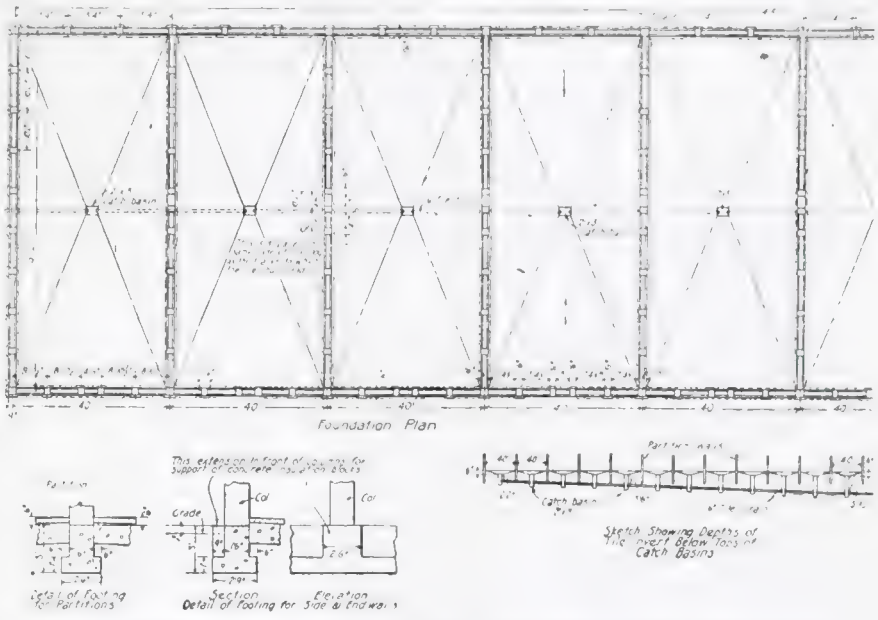


Fig. 1.—Foundation Plan of Reinforced Concrete Ice House for Northern Pacific Ry., at Pasco, Wash.

The same committee recommended the approval of drawings submitted of the buildings proposed to be erected on a site at the junction of Mansell-street and King-street, Tower Bridge northern approach, which the Council agreed, on July 1, to let on lease to Messrs. Barlow and Roberts for ninety-nine years. The elevation will be dark stock Kent bricks with red-brick dressings, the ground floor having glazed-brick piers and a fascia in Portland stone. A portion of the White Hart-lane estate having an area of 4¼ acres has been sold for £3,000 for the Tottenham and Wood Green Burial Board.

It was agreed to sanction an advance of £16,327 to the Lewisham Borough Council for paving Bromley-road (Rushey Green to Beckenham-lane) with creosoted deal wood (4in.) on 9in. and 12in. concrete foundations, in place of macadam. The work proposed is to be carried out concurrently with the construction of the council's electric tramways along Bromley-road. Widenings are necessary, and in connection therewith the borough council will carry out various works to the roadway.

It was intimated that sketch designs for the proposed new courthouse for quarter-sessions to be built at Newington had been approved by the Home Secretary, and that additional land had been purchased for £3,600.

In June last Messrs. John Mowlem and Co., Ltd., the contractors for engineering jobbing works, gave six months' notice to terminate the contract. The notice was given consequent upon recent increases of wages, and the General Purposes Committee directed the chief engineer to negotiate with Mowlem and Co. with a view to arrangements being made for the continuance of the contract. The committee now submitted proposals for

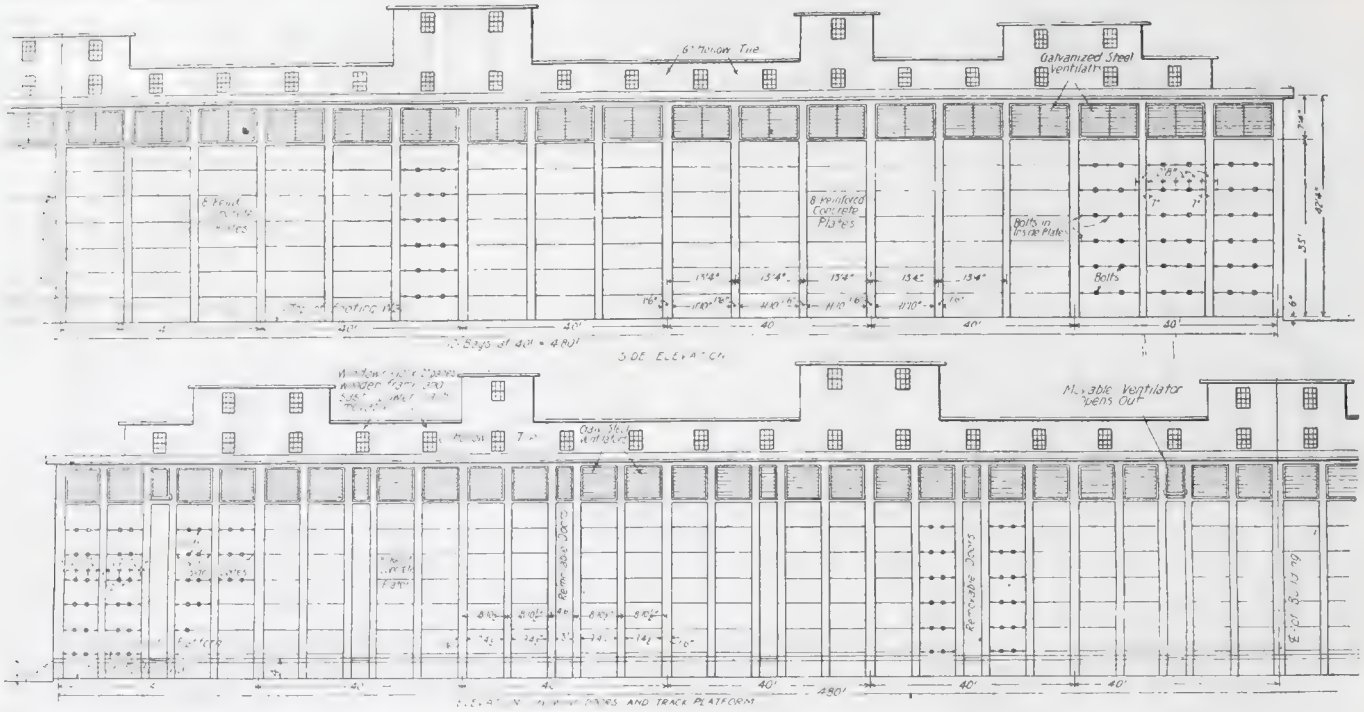


Fig. 2.—Elevations of Concrete Ice House, Northern Pacific Ry., at Pasco, Wash.

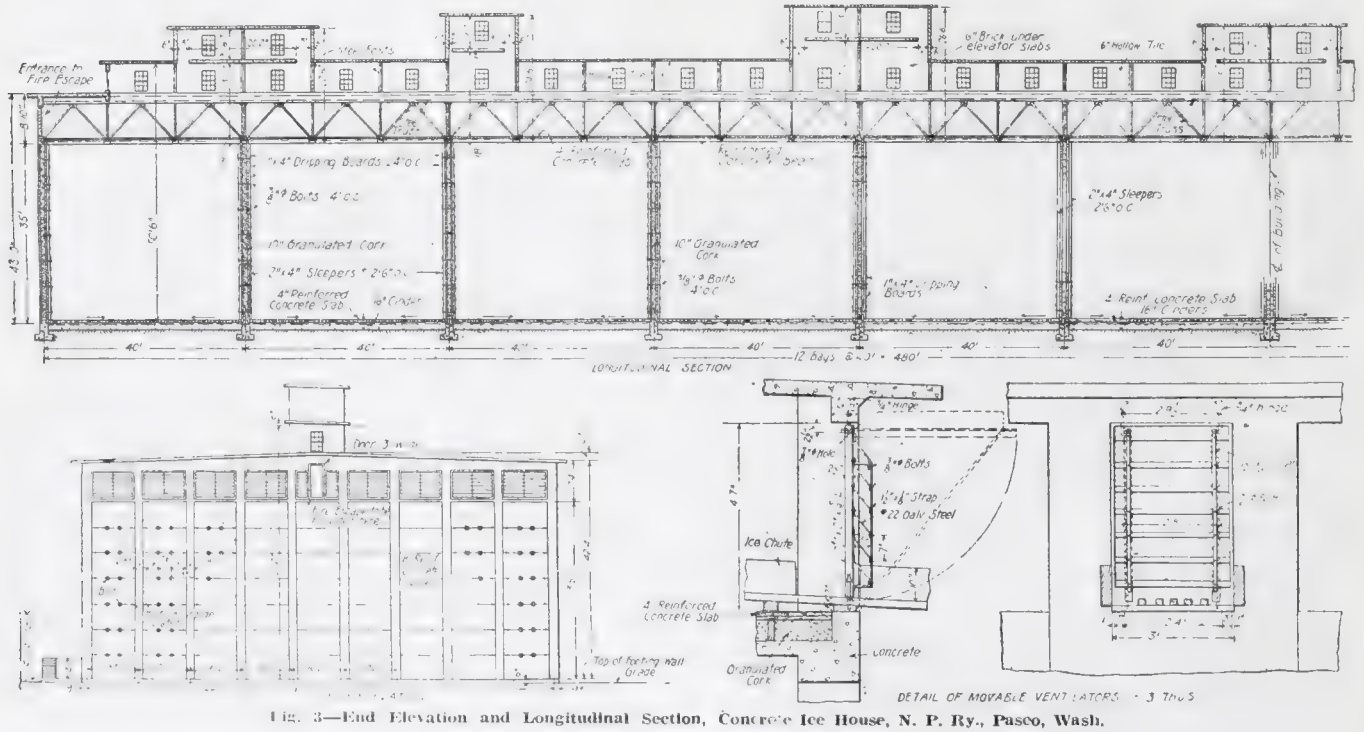


Fig. 3—End Elevation and Longitudinal Section, Concrete Ice House, N. P. Ry., Pasco, Wash.

the continuance of the contract with variations which they were advised were equitable.

The Education Committee reported that work is proceeding in connection with the erection of eleven new elementary schools and one new secondary school, and the enlargement of five elementary schools and two secondary schools. The total additional accommodation thus provided will amount to 10,537 places, at an estimated cost of £269,448. Three schools are being structurally improved by the provision of halls at a cost of £41,350, and twelve schools are being rebuilt at a cost of £196,236. The erection of the Emmanuel Training College and hostels, Wandsworth, of hostels in connection with the Avery Hill Training College, Woolwich, and of a new trade school for girls, in connection with the L.C.C. Hammersmith School of Arts and Crafts, are in progress, the amount of the accepted tenders being £17,488, £42,111, and £19,141 respectively. Four special schools and two handicraft centres and a gymnasium are in course of erection, the total estimated cost of the work being £39,178. The committee have entrusted to local contractors the execution of minor improvements to the estimated value of £4,817, and of heating-work to the estimated value of £6,088. They have also authorised the invitation of tenders for improving the heating arrangements at five schools and for carrying out minor works at three schools. Electric-lighting work at two technical institutes, one secondary school, and two elementary schools, and the installation of fire-alarm bells at one elementary school and one industrial school, are being carried out by the direct employment of labour.

CONCRETE ICE HOUSE FOR THE NORTHERN PACIFIC RAILWAY AT PASCO, WASH.

The Northern Pacific Railway has had under construction this summer, at Pasco, Wash., a reinforced-concrete ice-house, designed for an equipment of elevators to be operated by electricity. The building is 480ft. long by 93ft. wide, and 50½ft. high to the main portion of the roof. Fig. 1 shows the foundation plan and the drainage arrangement. The building is divided into bays of 40ft. width, and in each of these the floor slopes from all of the four sides to a 2ft. by 3ft. catch-basin at the centre. These catch-basins are then connected by a 6in. tile drain. Fig. 2 shows a side elevation of the house, with the doors and the track platform. Fig. 3 shows an end elevation and a longitudinal cross-section.

The floor is a 4in. reinforced-concrete slab on a bed of cinders 16in. deep. The roof, which also is of reinforced concrete, is waterproofed with pitch and gravel. The lower chord of the steel roof-trusses carries a 4in. reinforced-concrete slab over the whole house, to insulate the ice-bays from the heated space under the roof. This in turn is overlaid with "regranulated" cork, which is boarded over. The sides of the house consist of reinforced-concrete columns, with intermediate reinforced-concrete plates 4in. thick, and in sections 4ft. high. There are

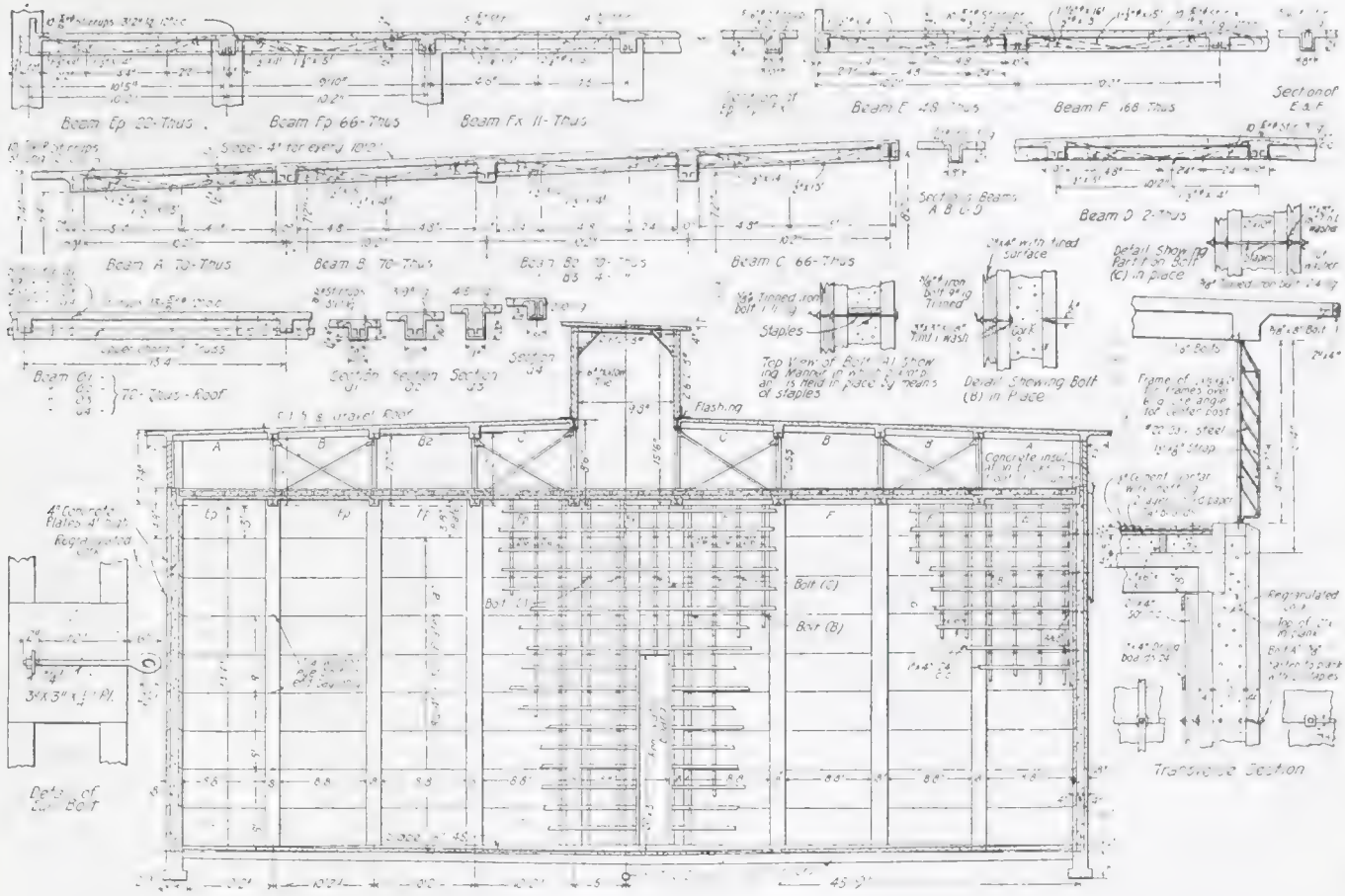


Fig. 4.—Transverse Section of Concrete Ice House, N. P. Ry., Pasco, Wash.

double sets of plates, outside and inside, with a 10in. space between, filled with "regranulated" cork. The partitions between the bays are similarly constructed. Under the eaves of the roof, all around the house, there is a row of ventilators, full panel width, made of galvanised-steel bars or slats, as shown in detail in Fig. 3. Various details of the reinforcement appear in the transverse sectional view, Fig. 4. The design of the massive doors, 32ft. high, constructed of 1½in. by 10in. fir planks, with air and regranulated cork insulation between, is shown in detail in Fig. 5.

The hoisting of the ice is done with electrically operated elevators designed by Mr. C. A. P. Turner, consulting engineer, of Minneapolis. The details of these appear in Figs. 7 and 8. The lay-out of the chutes and details of the design appear in Fig. 6.

This work was begun under the supervision of the late W. C. Smith, chief engineer of maintenance of way. The contractors are Deeks and Smith, of St. Paul.

OUR NEGLECTED WATERWAYS AND HOW TO SAVE THEM.

BIRMINGHAM TO THE RESCUE.

At the meeting of the Birmingham City Council on Tuesday, Mr. Neville Chamberlain proposed:—"That this council approves of the recommendations of the Royal Commission on Inland Waterways, 1909, for the appointment of a central waterway board to acquire and maintain the four routes known as 'The Cross,' but without acting as carriers thereon; and further, should the Government appoint such a board and decide on its recommendation to carry out the improvements to the 'Cross' suggested by the Commission, is prepared favourably to entertain a proposal that local authorities should bear some part of the cost of such improvement; and that the town clerk be, and he is hereby, instructed to forward a copy of this resolution to the Prime Minister, the Members of Parliament for the City, and the secretary of the Waterways Association."

Mr. Chamberlain said the first part asked the council to approve of certain recommendations of the Royal Commission on Inland Waterways, and he did not anticipate that in a business community like Birmingham he would have much difficulty in securing their assent to a proposition which had so many and such obvious advantages. The second part of the resolution went further, and invited the council to accede to the principle of local contributions to the improvement of the waterways. Waterways existed at the present time connecting up Hull, Liverpool, Bristol, and London, and they converged towards a central area, somewhat oval in shape, in which Birmingham lay. It was not proposed by the commission to make any new waterways on the four routes. Anyone who began to investigate the conditions of the waterways was struck with the extraordinary diversity of ownership. Not only were the four routes owned by different bodies, but sections of the same route were also owned or controlled by different bodies.

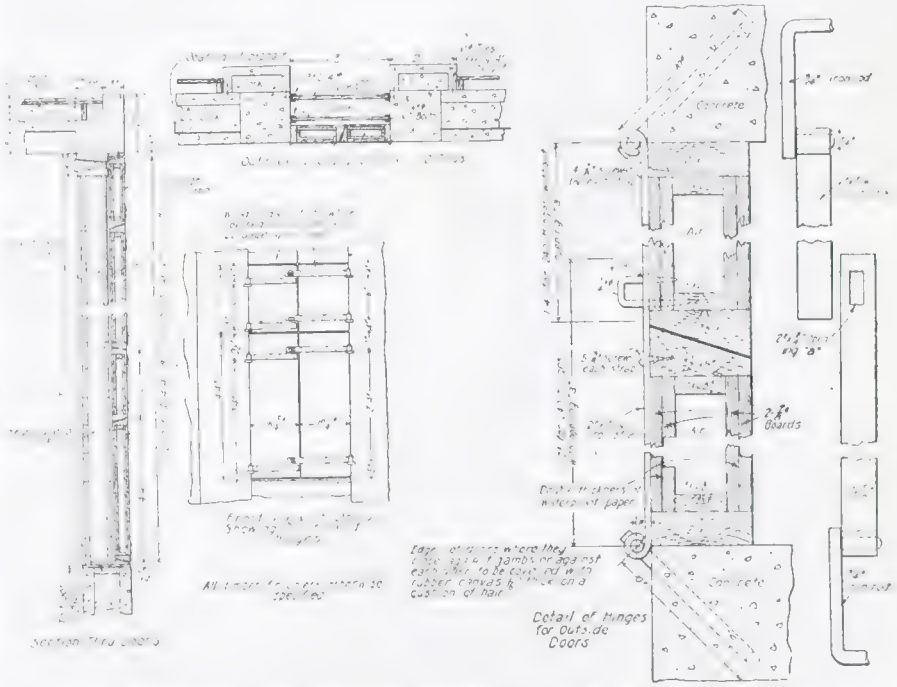


Fig. 5—Details of Door Construction, Concrete Ice House, N. P. Ry., Pasco, Wash.

NO UNIFORMITY.

The result was they got every possible kind of difference in width, in depth of the main channel, in the size of the locks, in the heights under the bridges, and, in short, there was no uniformity whatever between different sections of the same through canal route. Just as the strength of a chain was

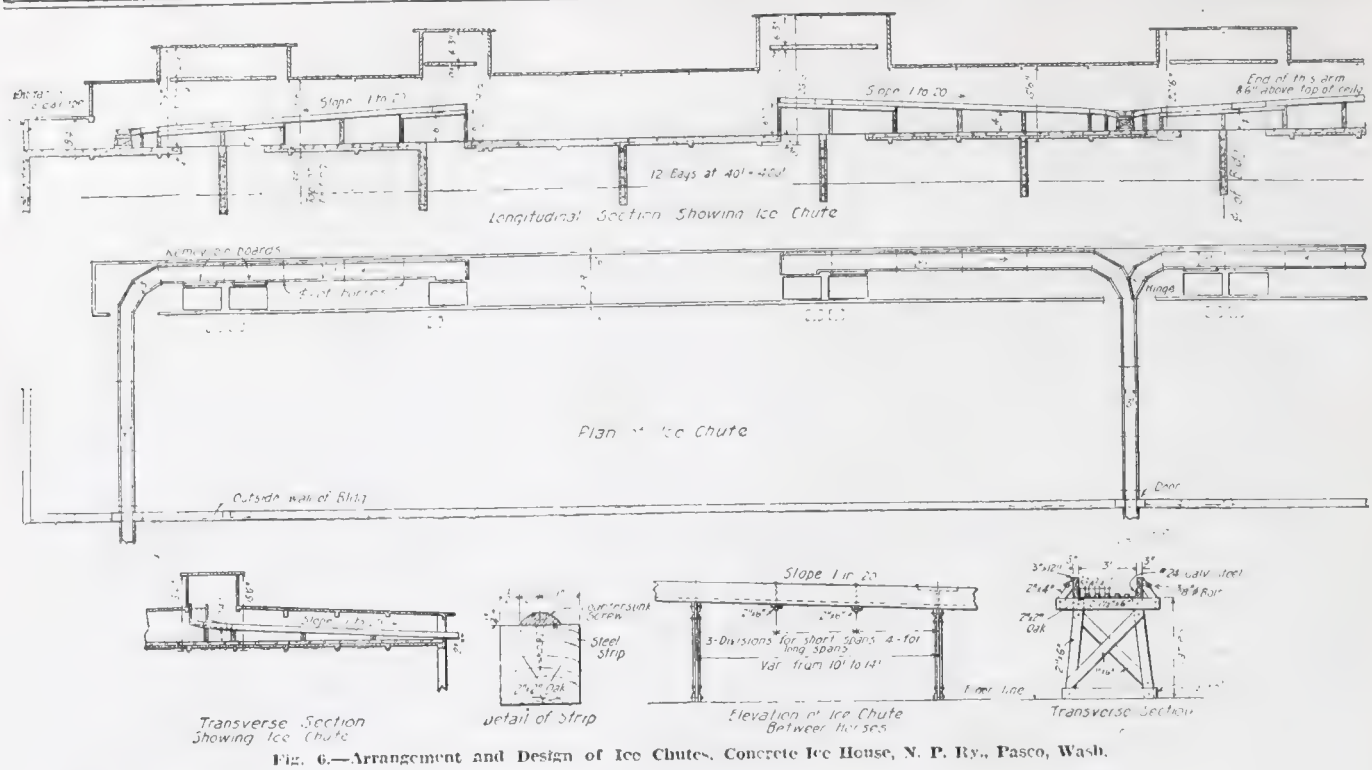


Fig. 6.—Arrangement and Design of Ice Chutes, Concrete Ice House, N. P. Ry., Pasco, Wash.

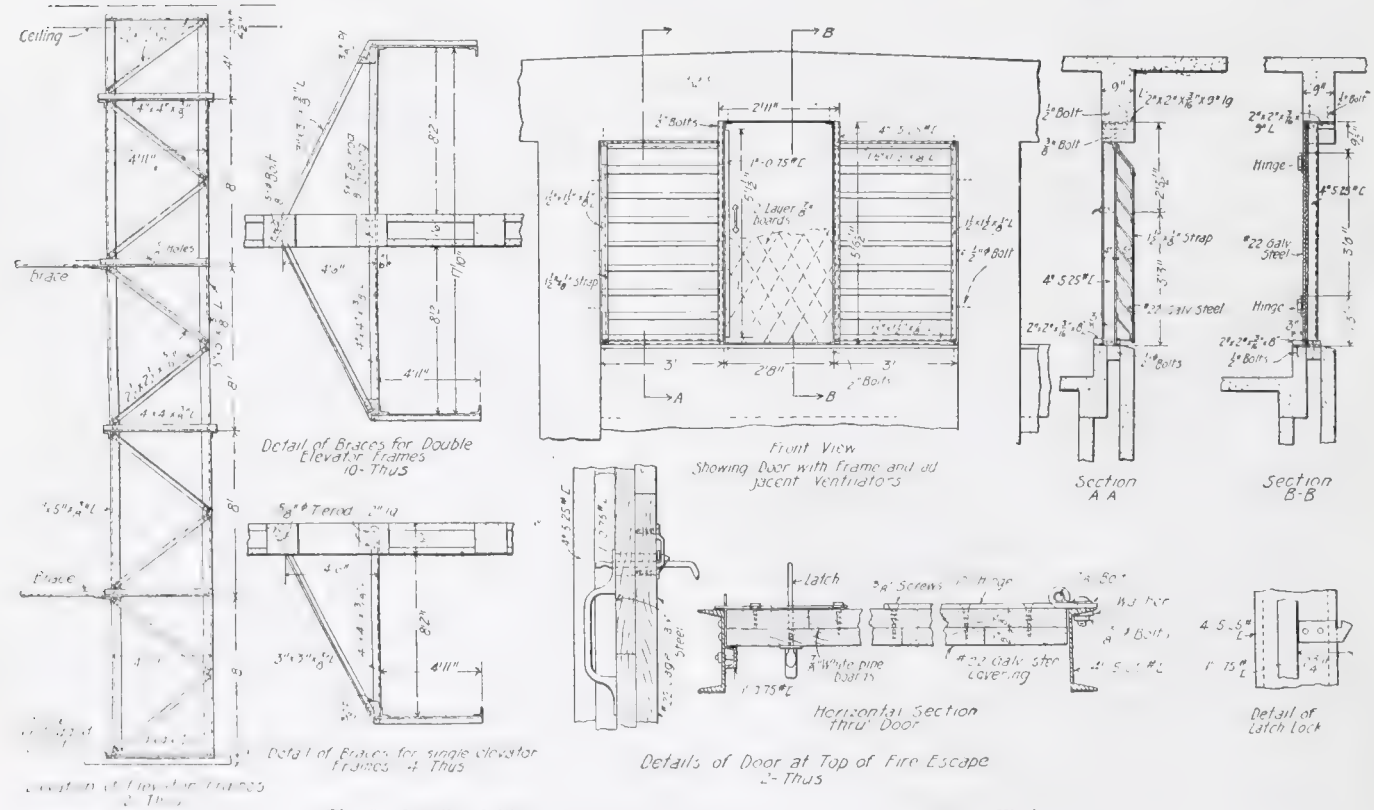


Fig. 7.—Details of Elevator Frames, Concrete Ice House, N. P. Ry., Pasco, Wash.

measured by that of its weakest link, so the carrying capacity of a canal was measured by that portion of it which could carry least. It was not the slightest use for one body to improve its section of the canal if the section on either side remained unimproved. And then there was this further point about the ownership, that in nearly every case they would find some section owned or controlled by a railway. Railway authorities generally denied they had done anything to strangle traffic on the canals. They said that obviously it was not their interest to keep their property in an inefficient and non-revenue earning condition. But nobody who had had much to do with canal transport, and who was not himself a railwayman, would endorse that contention. It would be obvious that, these being the facts, the first step towards improving the waterways would be to unify ownership. So long as the ownership remained in its present divided condition it was hopeless to expect any kind of radical improvement. How was the ownership to be unified? Some people said "Leave it to private enterprise." He thought it perfectly obvious that no private individual or private body would obtain the statutory powers necessary to expropriate the railways, and there was the further objection to private enterprise—that they themselves would always be liable to be bought up or to be controlled by one of the existing railways. It seemed to him the Royal Commission were perfectly right when they stated the only way in which that unification of ownership could be brought about was by means of the intervention of the State. That, then, was the first proposition which he asked the council to approve. It was not proposed that the State having acquired the canals should become carriers upon them. Sometimes he thought that point was lost sight of, and people thought State ownership of canals would be like State ownership of railways. One of the proposals of the Commission was the constitution of a waterways board, which would be constituted something like the Port of London Authority. It would acquire four routes and some of the principal feeders, and would issue to the various canal owners of the present time waterways stock, the interest on which would be guaranteed by the Government.

CANAL IMPROVEMENTS.

But, of course, they could not expect the waterways board to stop at acquisition. One of the first things they would do when they had acquired the canals would be to start an

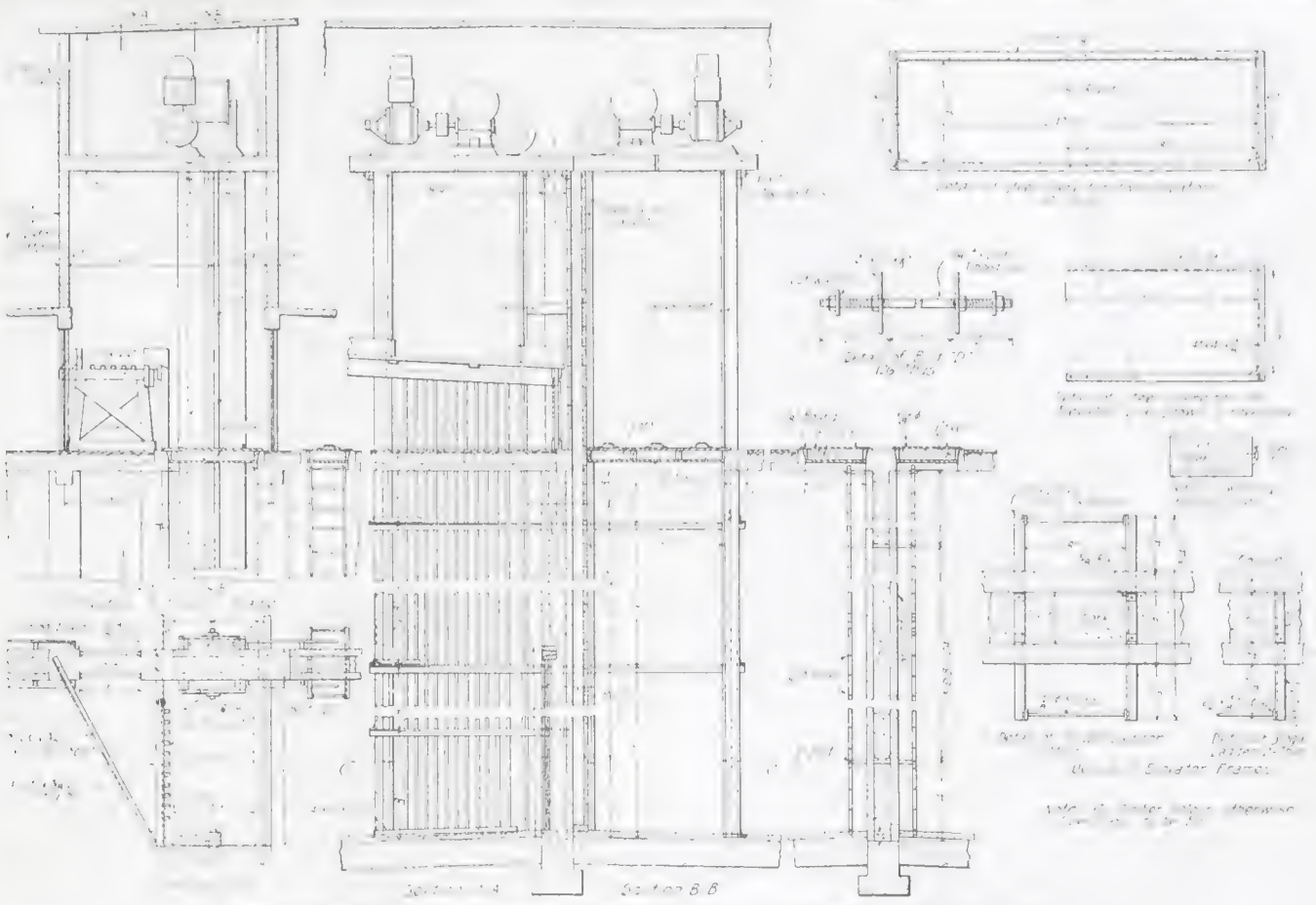


Fig. 8.—Details of Elevator Frames and Machinery, Concrete Ice House, N. P. Ry., Pasco, Wash.

investigation as to the best methods of improving them. The Commission itself took a good deal of evidence on this point, and they compared estimates for improving the waterways up to two different standards—one standard being capable of taking very much larger boats than the other. They were careful to say they did not want to express their own opinion as to which of these standards was the better of the two, but they pointed out that the larger standard would mean a very considerable expenditure of money, and they therefore thought it convenient to assume that the smaller one, for practical reasons, would be the most likely to be adopted. The smaller one was called the 100 tons standard, and meant that canals improved to that standard, would be capable of conveying a barge of 100 tons carrying capacity along it, and that locks would be made sufficient to accommodate three such vessels one behind the other, or six of the forty-ton barges in use at the present time. He himself thought that for a long time to come these smaller existing barges would probably be much more used than the 100-ton barges. In the first place, no one would want to scrap his existing plant if he could help it, and in the second place they were so much more in the habit of making up into small cargoes that he doubted whether they would see the free use of the 100-ton barges, except in trades like the coal trade. Assuming the 100-ton standard was taken, the Commission estimated that the cost of improving the four routes to the standard would be about 17½ millions sterling. That was a very large sum, but it was important to point out to the Council that it would not be necessary to spend the whole of the 17½ millions at once. It would be quite possible to spend a comparatively small sum each year in strengthening the weak places, and it would then be open for everybody to see what improvement followed upon that expenditure, and whether it was such as to justify the further expenditure of the whole amount. As to the increased tonnage that would follow such an improvement, it was extremely difficult, if not impossible, to give any kind of reliable estimate, but he had one or two figures concerning Continental experience which he thought had an important bearing on the case, because the two instances were somewhat analogous, and extremely encouraging. The total tonnage carried on British canals in 1905 was 40,000,000 tons, and when they considered the disadvantages under which the canals laboured, and the derelict condition of many of them, and the diversity of ownership and dimensions, he thought that figure was a remarkably large one. But it had been about the same figure for the last twenty years. What had happened on the Continent? There the Governments of the principal countries had been extremely go-ahead in the matter of their inland waterways. They had spent considerable sums on developing and improving their waterways, and making new ones, with these results: In France during the same period of twenty years the tonnage carried had increased by 73 per cent., in Belgium it had increased by 114 per cent., and in Germany—Germany was always at the top in these cases—it had increased by 274 per cent. During that time our own tonnage had remained almost stationary; if anything, it had gone back a little. It might be said, "Yes, but this increase in tonnage carried on the canals has been at the expense of the railways." That was the suggestion of railwaymen themselves, but it was not the case. If they took Belgium as an example, they would find that while the canal tonnage there had increased by 114 per cent., and the railway traffic had increased 61 per cent., in this country the canal traffic was stationary, and railway traffic only increased 64 per cent.—only 3 per cent. more than in Belgium. He thought these figures were sufficient to indicate to the council that the fears of those who thought the railways would be injured by improved canals were entirely unfounded.

WHAT THE COUNCIL WILL BE ASKED TO DO.

The council would want some sort of idea as to what they would be asked to do in the future. He thought there were two things. One of them would be to provide their own terminal facilities to provide wharves, and cranes, and accommodation for empty boats. He did not know at all what the facilities would be in Birmingham, but he took it that if provided by the corporation, the corporation would also have the collection of dues charged for boats, loading or unloading. He thought the dues would be sufficient to pay the interest on the amount of capital expenditure involved, so it did not appear to him that the provision of terminal facilities offered a formidable aspect. The second thing was to find the guarantee, and some part of the expenditure upon improvements within their own boundaries. The estimates that were prepared for the Royal Commission were made by Sir J. Wolf Barry and Parkers, and in response to his inquiries they had been good enough to furnish him with the amount of money involved actually within the boundary of the city of Birmingham. The total sum, excluding the cost of acquisition, and certain additional land, which he did not count because of the Government being the new owners of the land, was £756,625. To that sum he added the cost of a cut, which was proposed by the Commission, to connect up the Worcester and Birmingham Canal and the Warwick and Birmingham Canal. That cut lay entirely within the boundaries of the city, and the cost put down by the Royal Commission was £350,000. The total expenditure within the boundaries of the city would be £1,106,625. They would be asked to provide some portion of that sum, or to guarantee the interest upon it, but in considering what the annual charge upon the city in consequence of that capital expenditure would be they must take into account the increased rateable value of the canals themselves, owing to the increased expenditure. He understood the canals were rated practically upon their net rental. He had not got the net rental of the improved canals, but on the estimate of the Commission the rating would amount to £12,628, and they must deduct that sum from the charge put upon the city as the interest on capital expenditure. He thought no one could say it would be a very formidable amount. He did not think, for instance, it would be as much as 2d. in the pound. What had they to

gain? He did not hesitate to say that the position of Birmingham as a manufacturing centre would be enormously improved if the improvements on those four routes were carried out, as the Commission proposed. To-day manufacturers in Birmingham were so severely handicapped that some large firms had removed their works from the Midlands district down to the sea, and he knew some other firms contemplating a similar migration. In conclusion, Mr. Chamberlain pointed to Manchester's expenditure of five millions upon the canal, and said Manchester men considered it woud have been worth it if the cost had been double that sum.

After an appreciative discussion of the motion by the leading members of the City Council, Mr. W. A. Cadbury said there were two matters in the resolution he was not quite satisfied about. The first was the expression "to carry out improvements to the 'Cross' suggested by the Commissioners." That, he thought, would commit them to the acceptance of the whole of the Commission's very voluminous report and its recommendations, some of which many members of the council had never studied in detail. The other expresion was, "is prepared favourably to entertain a proposal that the local authorities should bear some part of the cost." He was satisfied, however, after what had been said, to accept the recommendation that without such a course—the payment of part of the cost—the resolution would be of no effect. As Birmingham was very much the biggest town on the route they must expect their share of the cost would be very much larger than that of any other place. One reason why he should prefer not to commit himself to the recommendations of the Commission was that obviously their shortest way to the sea was by Gloucester. There was already a canal for 300-ton boats as far as Worcester, which was more than half-way. They could get to the sea at an enormously less cost by improving the canal to Worcester than by committing themselves to the large scheme. Therefore he would move the following alteration in the resolution: Delete the words "To carry out the improvements to the 'Cross' suggested by the Commissioners," and substitute the words "To unify and improve the waterways named."

Mr. Neville Chamberlain accepted the amendment. There was only one point, he said, in Mr. Cadbury's speech to which he would like to refer. He suggested it would be much cheaper to take one route; to proceed on that suggestion, said Mr. Chamberlain, would at once make the scheme a local and not a national one. If Mr. Cadbury suggested that Birmingham itself should undertake the whole of the expense, then he doubted very much whether that would be a cheaper scheme than that suggested by the Royal Commission.

The motion as amended was unanimously carried, amid applause.

TARRED ROADS A SUSPECTED CAUSE OF RIVER POLLUTION.

Complaints of injury to fisheries by pollution of streams reached the Board from many quarters, says the report of the Board of Agriculture and Fisheries on the salmon and freshwater fisheries during 1912. In one case discharges from a disused lead mine caused very extensive destruction of the young of salmon and trout, and in another the exceedingly poisonous outflow of waste product from tar works killed great numbers of both salmon and trout on the point of spawning. In both these instances the county council concerned took the matter up, and in other cases the Board's officers suggested means for preventing a recurrence of the evils complained of. Nevertheless, representations are constantly being made by fishery boards to the effect that additional powers are necessary to enable them to deal with pollutions effectively.

Though coming naturally under the general heading of pollution, the question of road tarring and of the effects attributed to it presents special features. The complaints of injury to fish from this source originated principally in the Southern counties, where mortality and disease (especially blindness) in trout and other freshwater fish were attributed to the washings from tarred roads. As a result of representations from fishery owners some of the road authorities in these districts have agreed not to treat their roads with tar, tar compounds, or other chemical substance until March, 1915. It will be interesting to observe whether the mortality of fish in the Southern chalk streams will be in any way influenced during the interval.

Mortality among fish is often too readily attributed to circumstances which have little connection with it. This fact is well illustrated by the mistaken diagnosis of the mortality of fish in the Hertfordshire Colne in May of last year. This mortality appears to have been attributed without hesitation to the inflow of storm-water from tarred roads. Inquiry proved, however, that no road-tarring had been done in the neighbourhood, and subsequently the injury was traced to a leak from an old gas-holder tank which had been discharging gas-water directly into the river. The Thames Conservancy successfully prosecuted the gas company, and the maximum fine of £20 was imposed. The damage in this case cannot be computed at less than several hundred pounds. The case, therefore, provided an illustration not merely of the readiness of the uninformed to draw too hasty conclusions, but also of the insignificance of the maximum penalty which can be imposed, even under the comparatively stringent by-laws made by virtue of the Thames Conservancy Act.

Up to the present, so far as the Board is aware, absolute proof of the poisonous effects of washings from tarred roads is still wanting. Great care and promptness have to be exercised in the collection of samples of water, and it frequently happens that means of collecting these samples properly are not available at the particular moment when they might be of considerable value as evidence. The Board is in communication with certain road authorities, and the question of a joint investigation into forms of tar preparation and their effect upon fish-life is under consideration, from which, perhaps, something of value will materialise.

The urban district council of Melton Mowbray have adopted the revised plans of Messrs. Dawson and Manfield for the erection, at an estimated cost of £2,150, of a refuse-destructor on the site of the old sewage works.

The Colne Corporation recently applied to the Local Government Board for permission to borrow £4,000 for new recreation-grounds at Judge Fields, owned by Lord Derby. At Friday's inquiry the town clerk stated that the earl had agreed to sell the land to the corporation at one-fourth of its value, which for building purposes was nearly £1,000 an acre.

The design and price submitted by the English firm of Sir John Jackson, Ltd., for a further extension of the harbour works at Rio de Janeiro have been accepted by the Brazilian Minister of Public Works. About one million and a half sterling is the estimated cost of the works. The great harbour which is now to be extended, and which was inaugurated in 1904, was also constructed by a British firm, Messrs. C. H. Walker and Co., of Westminster.

A Local Government Board inquiry has been held at Chesterfield, before Mr. Edgar Dudley, inspector as to an application from the corporation for sanction to borrow £1,950 for the widening and improvement of Newbold-road, and £2,100 for the purchase of land and the construction of a new road from Derby-road to Boythorpe-lane (at its junction with Bacon-lane) and for approval of the appropriation of the Three Tuns corporate property between the Market-place and Markham-road, for the purpose of a new street.

The death of Sir Alfred East creates a peculiar situation at the Royal Academy. He was elected to fill the place left vacant by the retirement of Mr. Yeames; but as his diploma had not been signed by the King, Sir Alfred was recognised merely as an Academician-elect. He was practically an Associate. Therefore, there are not two vacancies in the membership—only the one caused by Mr. Yeames's transference to the pension list of the Academy; so that on November 19 an Associate and a member fall to be elected in place of Sir Alfred East and Mr. Yeames.

OBITUARY.

Mr. Michel M. Le Brun, of the firm of N. Le Brun and Sons, architects, New York, died at his residence in Montclair, New Jersey, on September 27, after an operation. He was fifty-six years of age. Mr. Le Brun, together with his brother, Pierre Le Brun, who survives him, retired from practice on the completion of the Metropolitan Tower, in New York, of which they were the architects. Mr. Le Brun was an Associate of the Institute of American Architects.

The death occurred on Sunday at his residence at Calne, of Mr. Henry Herbert Smith, F.S.I., land agent for the Wiltshire Estates of the Marquess of Lansdowne, of Crewe, Mr. Charles Awdry, and others. Mr. Smith, who was 62 years of age, was the son of Sir William Smith, LL.D., D.C.L., F.R.S., the lexicographer, and was educated at Charterhouse. He was a vice-president of the Surveyors' Institution, of which he became a Professional Associate in 1875 and a Fellow in 1881, and he had been a regular attendant at its meetings, and frequently took part in discussions affecting the ownership and management of land. He was an authority on all questions of land arbitration. He was a member of the council of the Royal Agricultural Society of England, a Commissioner of the Lea Valley Drainage, and Gilbey Lecturer on the History and the Economics of Agriculture, Cambridge University, 1900-1903. He was also a member of the Land Surveyors' Club and the Land Agents' Society. Mr. Smith, who was the author of a work on "The Principles of Land Estate Management," was chairman of the Calne Petty Sessions, a member of the Calne Board of Guardians, county secretary of the Red Cross Society, and a governor of the Calne Secondary Schools. Mr. Smith married Emily, daughter of Mr. Arthur Hall, of the East Indian Civil Service, and leaves one son and two daughters. The funeral took place at Derry Hill, near Chippenham, yesterday (Thursday) afternoon.

The death occurred suddenly on Saturday of Mr. Andrew Thomson, Fife-Keith, for forty years head architect of the Duke of Richmond and Gordon. Mr. Thomson had suffered from heart-disease for a considerable time, but had been able to attend to his work, and was at his usual duties up to Friday night. He was found dead in bed on Saturday morning. He was seventy-three years of age. Mr. Thomson was a native of Buchan, and began life as a carpenter. Appointed an inspector of works to Messrs. Matthews and Mackenzie, architects, Aberdeen, he subsequently became chief assistant to the firm, and passed through his hands many of the present-day well-known architects, including Dr. Marshall Mackenzie, A.R.S.A. He was then appointed head architect to the Duke of Richmond and Gordon. His duties as such covered a very wide district, and entailed the preparation of plans and specifications often involving an expenditure of about £30,000. Mr. Thomson is survived by a widow, a son, and three daughters.

The National Council of the Club and Institute Union propose to build a convalescent home at Grange-over-Sands, at a cost of £15,000.

The plans of Messrs. A. Price and Sons have been adopted by the Cheshire Education Committee for a council school to be built at Holme Chapel.

A wing consisting of a billiard and ladies' rooms has been added to the Church Institute at Sleights, near Whitby, at a cost of £600. Mr. G. Wilkinson was the contractor.

Mr. Francis H. Kimball, of New York, is announced as the architect selected to design the new building of the Pan-American States Association in that city. The structure will be twenty-five stories high.

The Great Western Railway Company have accepted the tender of the Cleveland Bridge and Engineering Company, Ltd., Darlington, for the construction of a jetty for the shipment of china clay at Fowey Harbour, Cornwall. The jetty will have a length of 342ft. and a width of 49ft., and will be carried upon eighteen 6ft. cylinders.

Currente Calamo.

It is worth notice, in further confirmation of our remarks on this page last week, that in connection with the "hundred-and-ten-pound cottage," of which a good deal has been heard lately, the *Times* last Saturday gives the following particulars as regards cost. The annual cost has been calculated on the basis of a 4 per cent. charge for interest and sinking fund on £110, the value of the land being taken at £40 an acre, and as each cottage is allowed an eighth of an acre of land for a kitchen garden, this works out at £5 per cottage, or a ground-rent of 4s. per annum. The full particulars of cost are stated as follows:—

	Annual charge.
Cost, £110, at 4 per cent.	£4 8 0
Site, one-eighth acre of land at £40 per acre	0 4 0
Repairs	0 15 0
Insurance ...	0 1 6
	£5 8 6

Perhaps Mr. Lloyd George will tell us in his next speech what more he is going to do to "make the land available for cottages" when, as at present, the ground-rent of an eighth of an acre of land works out at four shillings a year! Double the builders' transfer duties, or something of that sort, as he did in 1909-1910.

His speech at Swindon on Wednesday included a budget of promises, but only one point deserves consideration, and that is a very serious one indeed. A new "Land Ministry," which is only to cost us £80,000 a year, is to raise wages, reduce rents, and enable everybody to buy land at his own price. The State is to build cottages if owners don't, and as for the money required, Mr. Lloyd George says:

> We have got a very nice little fund at hand—the insurance reserve funds. (Loud cheers.) We are going to give the first cut of the joint to the agricultural labourers. (Cheers.)

This is robbing Peter to pay Paul with a vengeance! This "very nice little fund" now nearly reaches ten millions, and has been rapidly accumulated out of contributions from the insured, in return for which they have not had, and will never have, one penny benefit. We have two cases at the moment under personal notice in which those who have been forced to pay, and we with them, and for them, could not, and cannot, choose their own doctors, as Mr. Lloyd George promised they should, and are now paying their own medical man out of their own pockets, except for a serious operation which one is undergoing in hospital. Such is the perversity of human nature that these, and thousands of others like them, do not see why servants and working men in the towns should be sweated to provide Mr. Lloyd George's "first cut off the joint!"

Mr. J. F. Lancaster, of Burnley, and others who are experiencing difficulties with regard to closing orders, and their legal advisers, have doubtless noted the judgment of the Appeal Court given yesterday week in the case of Arlidge v. the Local Government Board, which has been dragging its slow length along these two years. In January, 1911, the Hampstead Borough Council made a closing order against Mr. Arlidge in respect of 83, Palmerston-road, on the ground that the premises were unfit for habitation. Mr. Arlidge appealed to the Local Government Board, taking up favourable reports as to the state of the house from a highly reputable local firm of surveyors, and the then president of one of the sanitary societies. The L.G.B. insisted on a public inquiry, which Mr. Arlidge refused to attend on apparently reasonable grounds. Later on Mr. Arlidge obtained an order from the Divisional Court, directing the L.G.B. to show cause why their order dismissing Mr. Arlidge's appeals should not be quashed. In December last year the rule was argued and discharged. Mr. Arlidge went to the Court of Appeal, and the case was argued last July before Lord Justices Vaughan Williams, Buckley, and Hamilton. Judgment was postponed till after the Long Vacation, and last Thursday the Court of Appeal decided by a majority to allow the appeal, quash the Order of February, 1912, and send the case back to the L.G.B. to determine in the manner provided by law.

It was pleaded by the L.G.B. that it only followed its ordinary rules of procedure in respect of these documents; but Lord Justice Buckley properly pointed out that its rules might be inoperative because ultra vires or inconsistent with natural justice. "It is one thing," said the judge, "to depart from the procedure adopted at common law, and another, and a very different thing, to adopt a procedure which is inconsistent with the principles of natural justice on which English law is based." "Of course," said the judge, "an Act of Parliament may be so worded as expressly to authorise a procedure inconsistent with the principles of justice recognised by the common law of England—Parliament is omnipotent." We know that by this time, unfortunately; but even Parliament is not likely to defy the principles of common justice for ever. The battle is coming—sooner than some of us expect—and it may prove a sterner one than our fathers had to fight against other despotisms. It is worth while, therefore, to hearten ourselves with words like those of Lord Justice Buckley.

Employers are under a sort of statutory duty in regard to their safe custody of the Insurance Cards of the workers while in their possession. This arises out of regulations made by the Commissioners under the Act. These provide that an employer shall keep the card of an employee during the current week of service and up to the affixing of the stamp. They also state that by consent of the worker the employer can retain the card during the current quarter. In this way large contractors and builders have the custody of hundreds of cards, which they must hand over to the contributors on the termination of the services or at the end of the current quarter, or when requested. Now, the legal meaning of this "safe custody" has not yet been determined. We know of a case in which burglars broke into the premises of a large firm, and, finding no better booty, carried off a lot of these duly-stamped Insurance Cards. We are told that the official inspectors consider these employers are liable to make good the stamps thus stolen. The firm, of course, refuses to pay insurance taxes twice over. The Government have already had the money for the stamps once, and we should say that the workers' accounts could be cleared up by some proper certificate. But in law it would seem that an employer's duty as to the safe custody of these cards would be discharged if he took as much care of them as he did of similar documents of his own. He would, of course, be liable, as a bailee without reward, for gross negligence causing loss, but he can hardly be held responsible for an unforeseen burglary.

Mr. G. Bernard Shaw said several very useful things at the Three Arts Club on Monday in his lecture on "The Three Arts: Music, Art, and Drama." It is perfectly true that the anomalies in the value of people are staggering. The artist takes himself or herself to the market and finds that competition is intensified by the blackleg—by the young artist, for instance, who, really kept by his parents, or living on the competence inherited from them, does work for next to nothing—nay, even pays the sharks who employ him to do that work. To some extent, as Mr. Bernard Shaw said, the man or woman who can cultivate their talent to the point of special ability may despise and disregard unfair competition. But they are few. For the rest of us the only way of escape is by combination—by the methods of trade-unionism. We must make up our minds what is a subsistence wage, and in no circumstances accept less. We must make it a point of honour not to take less, and must try to enforce that by every means in our power. That, with ourselves, is the fundamental principle of the Registration Bill.

We confess we are hardly surprised that Camberwell and Croydon, and possibly other boroughs, are indisposed to pay big contributions towards the saving of the Crystal Palace till more information is forthcoming as to future prospects. The general scheme for the management of the Palace under the Board of Trustees which is to be constituted proposes that the purchase shall be completed in the names of the Lord Mayor for the time being, Sir David Burnett, Sir William Treloar, and Sir Richard Stapley, who will hold the property in trust, and carry on the scheme, as far as possible, till the Palace and park are vested in the corporate trustees under the Act. Funds for the first year of management will be found by creating a mortgage on the ground-rents of the estate. The trustees propose to carry on and develop the existing Schools of Art and Engineering, with a view to the ultimate establishment of other schools of a similar character, such as a School of Architecture and a school for training young persons for life in the British Colonies. The trustees will enter into arrangements for the usual fêtes and gatherings to be continued, and, except for those occasions, limited to fifty a year, the park will be open free to the public. The admission charge to the Palace on ordinary days is to be sixpence, as against 1s. at the present time, and season tickets will be issued. All this is good in its way, but we cannot see that the prospects of success are bright, and we do not like the policy of mortgaging the grounds to start with. It seems to us only too likely to prejudice the future rights of the public in the Palace and the park.

On the whole we are not sorry to see it stated that it is highly probable there will be no winter exhibition at the Royal Academy this year, in consequence of the death of Sir F. Eaton, the secretary. It will be recalled that a show of miniatures and pictures by foreign artists working in England—such as Holbein, for example—had been projected. We had understood, as we stated on this page in our issue of August 8 last, that such

an exhibition would probably be confined to one room, and we expressed our doubts then whether so limited a display would be worth seeing, as it was extremely unlikely owners of objects of real beauty and value would lend unless the selection was entrusted to competent experts. On the whole, the R.A. had better take a season's rest and wait till its new secretary gets into harness. Then, we trust, a little more wholesome activity and prompter recognition of the needs of the times will be manifested than we have been used to of late years at Burlington House.

West Ham is leading the way with its electrical undertaking, and all interested should get a copy of its "Bi-annual Bulletin" for the current month, which is published by its Electricity Department. The borough, among other things, now charges electric vehicles for all owners, and it is stated that the cost of energy at current rates varies from one-third to one-half the cost of petrol required for motor vehicles of the same carrying capacity. If this is so, surely, ere long, in every Metropolitan borough West Ham's enterprise will be emulated, and we shall soon see the last of the stinking, noisy motor-'buses and other destroyers of our roads and dangers to human life? In addition there are fully-illustrated particulars of the use of electricity in factories, laundries, etc., wherever it is being substituted for gas and steam, with considerable economy of cost and space. Appended to the "Bulletin" there is a list of vacant factories and factory sites in West Ham, which many of our readers would do well to study. There are few businesses it would not pay well to move into West Ham, with the exceptional facilities for cheap power this up-to-date borough offers.

We are very glad that at the Birmingham City Council on Tuesday Mr. Neville Chamberlain's resolution, approving of the recommendations of the Royal Commission on Inland Waterways for the appointment of a Central Waterway Board to acquire and maintain the four canal routes known as the Cross, but without acting as carriers; and, further, that should the Government decide to unify and improve the waterways named, the council would be prepared favourably to entertain a proposal to bear some of the cost of improvements, was carried unanimously. Birmingham, as Mr. Neville Chamberlain pointed out, being 100 miles from the sea, is greatly handicapped owing to the high railway freightage rates. Unless Birmingham was prepared to take the lead, and to say to the Government and the country that they were in earnest by undertaking to put their hand in their pocket, they would have the whole thing shelved, and another generation would pass before another opportunity occurred. Birmingham and Midland firms are moving to the coast, and others will follow unless some such scheme as that recommended by the Royal Commission is carried out. So will manufacturers and traders in other inland towns have to do if sectional interests are allowed to block the waterways a past generation provided. We need hardly point out what such a series of migrations mean to property owners; and that is why we recommend to all concerned the serious study of Mr. Neville Chamberlain's speech on Tuesday, from which we give as lengthy extracts as our space will bear on another page.

The current number of the "Cambridge Magazine," an undergraduate production, contains an allegory which we must leave our readers to interpret for themselves. The Rich Man died, and found himself in a luxurious smoking-room. He touched the bell, and a perfectly-trained flunkey brought him a wonderful cigar and the most delicious white wine he had ever tasted. He lazily noticed that the room had no windows, and he thought he would like a little fresh air. He passed into the next and equally magnificent room, and there, too, he found no windows. By now he had a distinct desire for the open. In the third room also there were no windows. He began to walk faster. He wanted to see a cloud, although never in his life had he experienced such a desire. He started to run through rooms and rooms; there was no end to them. He grew frantic, and rushed headlong, as it seemed to him, for miles. At last he sank exhausted into a seat in a room papered in pale green, and hung with oil paintings by Royal Academicians, framed in costly gold. He rang an electric bell feverishly. Another perfect waiter appeared. "I want to go into the garden. Show me the way, quick." "Sorry, sir, but it's against orders," was the respectful answer. "Against orders!!! What, isn't this Heaven?" "No, sir!"

COMPETITIONS.

BATH SECONDARY SCHOOL. At the last meeting of the City of Bath Education Committee the town clerk reported that the President of the Royal Institute of British Architects had nominated Mr. H. T. Hare, F.R.I.B.A., as assessor for the designs of the new secondary school.

BLACKBURN. With regard to the plans submitted in a local competition for the new fire-station for the Blackburn Corporation, the adjudicator, Mr. F. Gatley Briggs, F.R.I.B.A., of the firm of Messrs. Briggs, Wolstenholme, and Thornely, Central Buildings, Blackburn, has made the awards as follows: First premium of £100, Mr. W. Stirrup, F.R.I.B.A., 14, Richmond-terrace, Blackburn; second, of £50, Mr. John Hayhurst, Richmond-terrace; and third, of £25, Mr. Fred Parkinson, Richmond-terrace.

BRADFORD.—Respecting the designs received by the Bradford health committee in the architects' competition for the laying-out of the Southfield estate at Odsal—an estate of 50 acres—on which the corporation propose to build 600 houses for the working classes, of four types of dwelling, with twelve shops in addition, the adjudicator, Mr. Henry T. Hare, F.R.I.B.A., Gray's Inn-square, has made the awards as under: First, £300 premium, Mr. Hubert S. East, A.R.I.B.A., 14, South-square, Gray's Inn, W.C.; second, £200, Messrs. Geoffry Lucas and Arthur Lodge, in conjunction with Mr. P. Badcock, 13, Gray's Inn-square, W.C.; third, £100, Mr. Patrick Abercrombie, Department of Civil Design, University of Liverpool. Fifty-nine designs were sent in. The site is a somewhat irregular one, bounded on the south by Halifax-road, and with an outlet to the north to the High-street, and a main road was suggested in the conditions, in a more or less settled position, joining up these two roads. The winning design, we understand, is planned on somewhat symmetrical lines, with a central semicircular open space, around which the shops are grouped with some of the better-class houses. The less-important roads more or less lead up to the centre, and have small open spaces or playgrounds at the angles. The scheme provides for 594 houses of the various types grouped in blocks of two, four, six, and eight. It is proposed that variety of appearance will be obtained by the different treatment of roofs, gables, and wall surfaces, and a varying building line, some of the blocks being set back 15ft. from the road, others as much as 20ft. and 25ft. respectively. Back roads are provided to all the houses, as required by the Bradford by-laws. It is calculated that some £125,000 will be required to complete the whole of the buildings.

DENBIGH.—The erection of the North Wales Sanatorium for tuberculosis patients will be proceeded with as early as possible. The sanatorium is to be built on a hillside site, about three miles from Denbigh. Designs for the sanatorium were invited from architects, and out of thirty-three sets, Mr. Edwin T. Hall, F.R.I.B.A., London, the professional assessor, awarded the first place to Mr. T. Taliesin Rees, F.R.I.B.A., Liverpool, and this choice was endorsed unanimously by the council of the Memorial Association. The sanatorium is to cost £20,000, and will give accommodation for 184 patients—154 adults and 30 children, and will be arranged so as to allow accommodation for a further 100 patients at some future date. The buildings will consist of eight blocks. There will be the administrative block, with the dining-room and kitchen accommodation behind; two nursing wards, one for men and the other for women; and two ambulance wards for patients who are able to walk about. Then there will be a children's ward and open-air classrooms. There will also be a medical superintendent's residence and rooms for the two resident physicians, and a laboratory. A laundry and a power station to produce electric light will complete the series of blocks. A filtration scheme of drainage will be provided, and the water-supply will be drawn from a reservoir formed by damming a brook which runs through the estate.

HENDON.—The urban district council propose to erect a swimming-bath and public hall adjacent to the public offices at the Burroughs, Hendon, and in connection therewith have decided to institute an open competition among architects for designs, the premiums to be fixed at £100, £75, and £50. Mr. R. Blomfield, A.R.A., President of the Royal Institute of British Architects, has been asked to nominate an assessor.

HIGH WYCOMBE.—This town-planning competition has been settled. The envelopes containing the names of the competitors were opened at the meeting of the town council on Tuesday, and the authors of the designs placed first, second, and third by the adjudicators were found to be:—First, E. W. Turner, L.R.I.B.A., Sheffield, £25; second, S. P. Taylor, Harrow-on-the-Hill, £10; third, A. J. Dexter, High Wycombe, £5. The plans are on view at the Guildhall from 11 a.m. to 7 p.m. to-day.

WARRINGTON. At the meeting of the education committee for Warrington on Monday night, the sites and buildings sub committee submitted a report recommending that a resolution inviting competitive designs for the school to be erected, at a cost of £14,000, in Lonely-lane, be rescinded, in order that the competition might be restricted to local architects, the committee to adjudicate on the plans. It was pointed out that this would save the appointment of an assessor and his fee. Several members opposed the principle of limitation, and the opinion was expressed that they could only get the best possible plans by throwing open the competition. The proposals of the sites and buildings sub-committee were defeated by the casting vote of the chairman (Mr. H. Roberts), and the competition remains, therefore, an open one.

The Bishop of Thetford dedicated last week and opened the new infants' department of the Church schools at East Dereham. Accommodation provided is for 144 children. The architect was Mr. John Burton, of Norwich and the builders were Messrs. W. and J. Larner, of East Dereham.

The dilapidated wooden bridge over the River Ouse at Magdalen, six miles south of King's Lynn, is being replaced by a bridge in three spans, of 100ft. each, of lattice steel girders designed by Mr. John Russell. The work is being carried out by Messrs. Archibald D. Dawnay and Sons, Ltd., for the Norfolk County Council at a cost of £6,000.

Building Intelligence.

CHESTER.—The Hydro Electricity Works were opened on Monday by the mayor. The works stand on the site of the famous old Dee Mills, near the bridge across the river. The corn mills, first mentioned in a deed of the period of the Norman Conquest, have been burnt down on four occasions, the last time in 1895, and, as they had become obsolete, they were finally discarded for milling purposes in 1908. The mills and water rights were acquired by the corporation of Chester in 1895, and were dismantled in January, 1910. While the large water-wheels were exposed to view it occurred to Mr. S. E. Britton, the city electrical engineer, that the water power might be used for generating electricity and thus supplement the city's steam-power installation. He drafted a scheme which he submitted to the corporation, who in turn consulted Mr. A. C. Hurtzig, of London, with the result that the works were erected. Messrs. James Gordon and Co. were the contractors.

CROYDON.—The new secondary school for boys in The Crescent was opened by the Mayor of Croydon on the 15th inst. The school provides accommodation for 114 pupils, and is designed on the central hall plan, the hall being 69ft. by 38ft., with a balcony 7ft. wide extending round two sides, giving access to the upper rooms. The whole of the class-rooms are grouped round this central hall, and most of them open directly out of it. Cut off from the centre block by corridors and screen doors are two wings, which contain workshops, gymnasium, chemical and physical laboratories, and a dining room and art room. The ground floor corridors are paved with terrazzo, the upper floor corridors, laboratories, kitchen, and dining-rooms with a special Doloment jointless floor; the hall, classrooms, and other floors being paved with grooved and tongued polished pitch-pine blocks. Mr. H. Carter Pegg, F.R.I.B.A., was the architect. The heating has been carried out by Messrs. Rosser and Russell, of London, and the electric lighting by Mr. E. C. Price, of Croydon. The building contract with Messrs. Wm. Smith and Sons, of Croydon, amounted to £14,493; and the furniture, in Canadian oak, has been supplied by Messrs. Bradford, of Manchester.

SARRATT.—On September 14, the dedication festival of Sarratt Church, Herts, the bells were "reopened," after having been retuned and rehung by Messrs. Warner and Sons, of London. They have been retuned upon Canon Simpson's five-tone principle, and rehung in a neat steel frame of unique design, and quite independent of the walls of the tower; the old frame of oak, which was rotten and was vibrating against the tower walls, having been cleared out. In the new frame two empty bays are in readiness for the addition of two smaller bells, and it is to be hoped that they will soon be forthcoming.

A new Wesleyan Sunday-school has been opened at Hellifield. Mr. W. Sanderland, of Settle, was the contractor.

The urban district council of Cleethorpes have decided upon a scheme for a marine lake of about 22 acres extent to be constructed along the King's Promenade.

The Prestwick Town Council has appointed Mr. Frank Pritty, C.E., of the city engineer's staff, Glasgow, to the post of burgh surveyor and master of works. There were over eighty applicants for the position.

Arrangements are being made to return to the donors £1,200 subscriptions sent to the Dublin Mansion House Committee to help the corporation to secure the gift of pictures offered by Sir Hugh Lane. Owing to the action of the corporation, the gift has been finally withdrawn from Dublin.

The church of St. Peter, Shaldon, near Teignmouth, which was consecrated only eleven years ago, has been condemned by Mr. W. D. Caroë, architect to the Ecclesiastical Commission as being in an unsafe condition. It is estimated that about £3,000 must be spent on the church to make it secure.

PROFESSIONAL AND TRADE SOCIETIES.

GLASGOW INSTITUTE OF ARCHITECTS.—The quarterly meeting of the Glasgow Institute of Architects was held on Friday, the 17th inst., in the secretary's chambers, 115, St. Vincent-street, Mr. A. N. Paterson, A.R.S.A., president, in the chair. The secretary reported the proceedings of the council with regard to the matters considered and dealt with since the previous general meeting, and of which the following were the principal items:—(1) Ancient Monuments in Scotland. The First Commissioner of Works and the Secretary for Scotland had been memorialised, and the representations of the institute had been given effect to; (2) correspondence with the town clerk in regard to proposed new bridges, alterations at the Tron Steeple, and new tramway shelters, and with the Merchants' House in support of their action in connection with the proposed demolition of the Briggate Steeple; (3) agreement as to certain matters regulating building contracts entered into between the institute and the Glasgow and West of Scotland Building Trades Employers' Council; (4) the laying out of Cathedral-square; and (5) with regard to the lectures intimation was made that definite arrangements regarding the first two had now been concluded. Mr. Lisle March Phillips, of London, and Sir John Stirling Maxwell, Bart., have undertaken to address the institute on Wednesday, December 10, and Friday, January 30. On the recommendation of the council the following were unanimously elected fellows of the institute, viz.:—Messrs. George F. Boswell, 19, Waterloo-street; and Andrew F. Bryden, 147, Bath street.

THE INSTITUTION OF CIVIL ENGINEERS.—The council of the Institution of Civil Engineers have made the following awards for papers published in the Proceedings, without discussion, during the session 1912-1913:—A Telford gold medal to Mr. James Mackenzie (Johannesburg); Telford premiums to Messrs. H. Hawgood (Los Angeles), J. K. Robertson (Bombay), G. S. Perry (Sydney, N.S.W.), and Gervaise Purcell, B.A. (Los Angeles); and the Crampton prize to Mr. William Mason, M.Sc. (Liverpool). The council have made the following awards in respect of students' papers read before provincial associations of students during the past session:—The James Forrest medal and a Miller prize to Mr. P. M. Chadwick, B.Sc. (Birmingham); and Miller prizes to Messrs. A. J. S. Pippard (Bristol), T. P. Geen (Bristol), C. E. Holloway, B.Sc. (Bristol), J. W. Burns (Glasgow), and B. A. E. Heilig (Birmingham).

INSTITUTION OF MUNICIPAL ENGINEERS.—A special meeting of members of this institution is to be held at No. 4, Southampton-row, W.C., at 1 p.m., on Friday, November 7, to consider some important proposed amendments and additions to the by-laws. These alterations were approved of at a special meeting held on April 23 last, and were also approved by the council on September 24. Under the proposed amended by-laws, if finally adopted, a mutual aid and defence fund will be created and a new class of Associates formed, who are defined as "persons who, although not engaged in the profession of municipal engineering or eligible for corporate membership, are, by their connection with the sciences and arts, or otherwise, qualified to concur with municipal engineers in the advancement of professional knowledge." Associates will not be entitled to the privileges of corporate membership. The new by-laws are to come into operation, if approved, on January 1 next.

THE INSTITUTION OF MECHANICAL ENGINEERS.—This society opens its proceedings to-day with a paper by Mr. R. B. Creak, on "Modern Flour Mill Machinery." General meetings have been arranged on November 20 and 21 in Manchester and London respectively, at both of which a paper will be read by Professor William Ripper on the "Cutting Power of Lathe Turning Tools," and while it is impossible as yet to say anything definite about subsequent meetings among the subjects under consideration, the following will probably be brought forward:—"Tests on Gas-Engines," "Some Modern Methods of Welding," and the "Development of Road Locomotion." The institution has been extending its premises, and in the course of the session a reception to celebrate the opening of the extension will be given by the president, Sir H. Frederick Donaldson, and Lady Donaldson. Papers to be read before the Graduates Association of the Institution include "Modern Methods of Steam Raising," by Mr. R. D. McGroarty (November 10); "Shipbuilding and Shipyard Practice," by Mr. W. J. Drummond (December 8); and "The Arrangement of Modern Engineering Shops," by Mr. H. C. Armitage (January 12).

LONDON MASTER BUILDERS' ASSOCIATION.—The ordinary meeting of the council was held on the 16th instant at Koh-i-Noor House, Kingsway, W.C., the president, Mr. Walter Lawrence, jun., being in the chair. The reports of the committees and proceedings of the conciliation boards were received and adopted. Several new members were duly elected, and applications for membership received. Correspondence relating to trade matters, etc., was considered and instructions given. Since the last meeting of the council a working rule agreement has been made with the United Builders' Labourers' Union.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.—The board of architectural education of the Royal Institute of British Architects announce that the designs submitted by the following students who are qualifying for the final examination have been approved:—Subject X.—(a) Design for a Classic Villa; Messrs. J. W. Bull, G. W. Callender, A. D. Clare, C. Dickeson, S. Fernyhough, E. Fincham, J. C. Fowell, G. E. Francis, R. Lone, A. E. Maxwell, C. G. Ripley, (Miss) M. Shewen, F. Williamson, W. C. Young. (b) A Pier at a First-class Watering Place: Messrs. F. A. Barley, A. J. Wood.

THE ROYAL ARCHÆOLOGICAL INSTITUTE.—This institution opens its session on November 5 with a paper by Mr. A. Hamilton Thompson on "Pestilences of the 14th Century in the Diocese of York," and has eight meetings between that date and July 1. On December 3 a paper will be read by Mr. F. E. Howard on "Mediæval Roofs," and the only other papers definitely fixed are by Mr. R. H. Forster on "The Excavation of Corstopitum (Corbridge) in 1913" (February 4), by Dr. A. C. Fryer on "Nicholas Stone's School of Effigy-Makers" (March 4), and by the Rev. C. E. Laing on "The Inscriptions Discovered in the Excavation of Bardney Abbey, Lincolnshire" (April 1). The summer meeting of the institute is to be held for eight days next year at Derby, from which place as a centre a series of excursions to places of archæological and architectural interest has been planned. Among the arrangements already made by the British Archæological Association mention may be made of the paper on November 6 by Dr. T. Cato Worsfold on "Constantinople and the Balkans from my Camera, with Scenes from the Recent War," and of that on December 4 by the president, Mr. Charles E. Keyser, on "The Three Churches of Ampney Crucis, Ampney St. Mary's, and Ampney St. Peter's, Gloucestershire." The London and Middlesex Archæological Society has already held several meetings, and only two more will be held this year, in the first of which Mr. Walter G. Bell will describe the origin and growth of the Fleet-street area, which is to be visited by the members, and in the second of which Mr. C. W. F. Goss will lecture on "The History and Antiquities of Bishopsgate." The "Historic London" Club proposes to visit, under the direction of Mr. Allen S. Walker, several of the City Companies, and is also studying the southern boroughs, its programme including Lewisham, Lee, Bermondsey, Rotherhithe, and Deptford.

Our Illustrations.

GRESHAM'S SCHOOL CHAPEL, HOLT, NORFOLK.

Sir Thomas Gresham founded this well-known school in 1555, and the buildings were entirely reconstructed in 1902,* since when developments have taken place with such success that now there are 230 boys in the school, and if further buildings were available the numbers would reach 300 pupils. Up to now Sunday services have been held in the school hall; but the foundation-stone of the chapel was laid last year by Sir Edward Busk, chairman of the Governors and Prime Warden of the Fishmongers' Company, who are the trustees of Sir John Gresham's estate. The accommodation provided for in the chapel forthwith to be erected, including the antechapel, will on special occasions seat about 600 worshippers, the usual stalls in the chapel proper allowing for about 360. The organ-screen, stalls, panelling, seating, and doors are to be of oak. The exterior is to be faced with stone and flint in the manner so characteristic of Norfolk work, while the roofs are to be covered with red hand-made tiles. The perspective drawing here reproduced also shows plans which are in execution to be somewhat modified. The tenders for the work are to be received in the course of the next few weeks. Messrs. John Wm. Simpson, F.R.I.B.A., and Maxwell Ayrton, A.R.I.B.A., of Verulam Buildings, Gray's Inn, are the architects. Later on we may possibly give some details of the work as actually carried out.

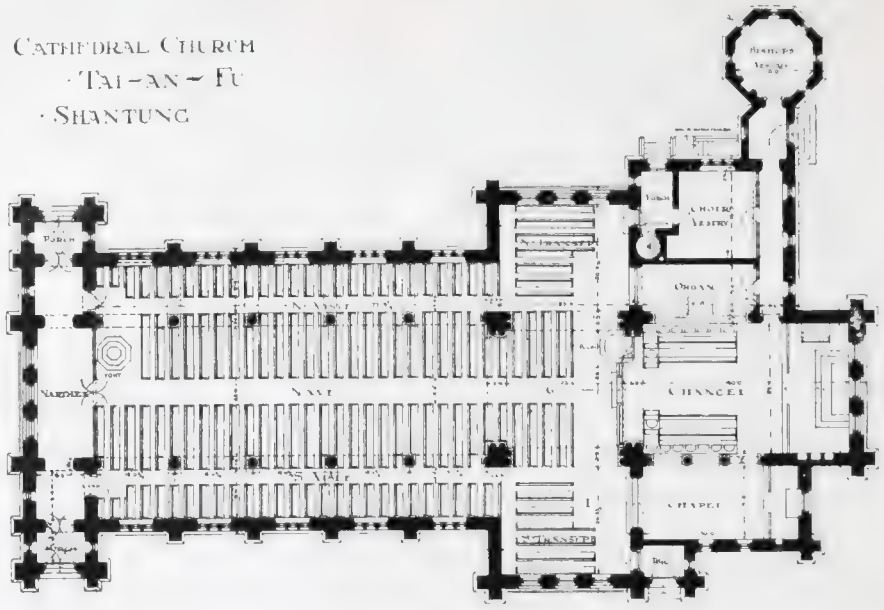
NEW CLUB HOUSE, TORONTO, CANADA, FOR THE TORONTO HUNT.

These picturesque and extensive premises, belonging to the Hunt Club, Toronto, are illustrated by the bird's-eye view which was hung on the line at the Royal Academy this year. A feature is made of the porte cochère and tower, which masks the principal entrance. Considerable accommodation is provided, befitting so important a rendezvous for the meet, besides the equipment of a first-class club. Up to the time of going to press the further promised particulars of the buildings have not come to hand. Messrs. Darling and Pearson, of Toronto, are the architects.

NEW CATHEDRAL: TAI-AN-FU, SHANTUNG, NORTH CHINA.

The site for this building faces one of the most important streets of the west suburb of Tai-An-Fu City, Shantung, China. The church consists of nave, north and south aisles, narthex, chancel, chapel, clergy and choir vestries, and organ-chamber, the bishop's vestry being situate in the north-east corner of the church. There are two main entrances, on the north and south sides, besides a special entrance to the chapel. There is also a separate entrance to the bishop's vestry on the east side. The font is by the narthex. The heating is by means of hot water, ventilated by means of radiators, with fresh-air inlets in the walls, and extract ventilators are placed in the roof. The exterior is to be of random rubble local stone obtained from the river-bed, and the dressed work of local blue-grey limestone. The interior will be faced with random-course stonework. All columns to the aisles and tower will be in local blue-grey limestone. The roof will be covered with red pantiles. The following are the principal dimensions:—Nave: length, 77ft. 10in., breadth 25ft., height 45ft. from floor to roof, total width across nave and aisles 48ft. 8in.; chancel: length 40ft., width 25ft., height 43ft. 6in. from floor to roof. A Norman style of architecture has been adopted by the late Mr. J. Francis Doyle and Mr. Sidney W. Doyle, architects, Harrington-street, Liverpool.

* Illustrations of the Gresham School were given in the BUILDING NEWS for August 15, 1902. Mr. Howard Chatfield Clarke was the architect, and he holds the capacity of consulting architect to the chapel committee now.



GROUND PLAN

LENNARDS' HOLIDAY HOME, WESTON-SUPER-MARE.

This building is in course of completion by the contractors, Messrs. H. W. Pollard and Son, of Bridgwater, and is intended to be occupied by employees of Messrs. Lennards, Ltd., who may be in need of rest and recuperation. The west front abuts upon the Promenade, or Beach-road, and the south main entrance on Clifton-road. The position, shape, and height of the building is restricted by the existing building-lines and rights of light to adjoining premises, so that the accommodation is necessarily confined to a narrow plan. The site is 41ft. by 145ft., and was given by Mr. Sheriff T. J. Lennard, J.P., of Bristol. Each floor is provided with similar self-contained apartments, with entry from the common staircase, which is constructed of concrete and glazed-brick-faced walls. All floors are of reinforced concrete, and the internal finish throughout is arranged for simple, inexpensive, but homely treatment and labour-saving. The cooking, hot-water services, and lighting will be by gas-fittings. The walls below the plinth are faced with limestone, and otherwise with local red brick, relieved by biscuit-coloured terracotta dressings, supplied by the Hathern Station Terracotta Company, of Loughborough. The main roof is covered with Delabole rustic slates, the porch and flat concrete roof being finished with asphalte. The floors of the staircase, hall, and balconies will be paved with marble terrazzo. Messrs. Bridgman and Bridgman, A.R.I.B.A., M.S.A., of Bristol, Torquay, and Paignton, are the architects.

DETAILS OF THE BIG SCHOOL, HAILEYBURY.

These working drawings comprise excellent details of this work as now being carried out. The general views and plan of the Big School were published in our issue for August 23 last year, with several particulars of the general scheme, and these exterior perspectives, which we then reproduced, were shown in the Royal Academy exhibition last summer. The sheet given herewith is one of three which the architects, Messrs. John W. Simpson, F.R.I.B.A., and Maxwell Ayrton, A.R.I.B.A., have kindly placed at our disposal. The masonry is all in selected Whitbed Portland stone. The scale of the existing buildings, with which the new work so admirably harmonises, is being followed in the columns and other details of these additions. The buildings thus added to formed the old East India College, and were converted to the use of the present foundation in 1862. It is interesting to refer to the fact that the columns of this old work are very fair copies of those of the Erectheion, and those in the new buildings are being carved from a cast of the actual capital in the British Museum. The first block of these extensions is now approaching completion, and the Big School itself is well in hand. The details represented on the accompanying double-page are so fully worked out in the drawing as to be perfectly clear, and, of course, are eminently practical and are very useful.

Mr. Claude Beynon, assistant surveyor to the Langport Rural District Council, has been appointed road surveyor to the Cheltenham Rural District Council.

A Church school has been formally opened at Dallington, East Sussex. Mr. J. Wall, of Bexhill, was the architect, and Messrs. Rogers and Son, of Bexhill, were the contractors.

The partnership hitherto subsisting between E. F. Hill and B. W. Thomas, carrying on business as architects and surveyors at Newbury, Berks, under the style of Hill and Thomas, has been dissolved.

Plans prepared by Messrs Settle and Brunditt for the sanatorium for tuberculosis patients which the Lancashire County Council propose to build at Pennington, adjoining the High Carley Hospital, have received the approval of the Local Government Board. The estimated cost, including cost of site, is £16,000.

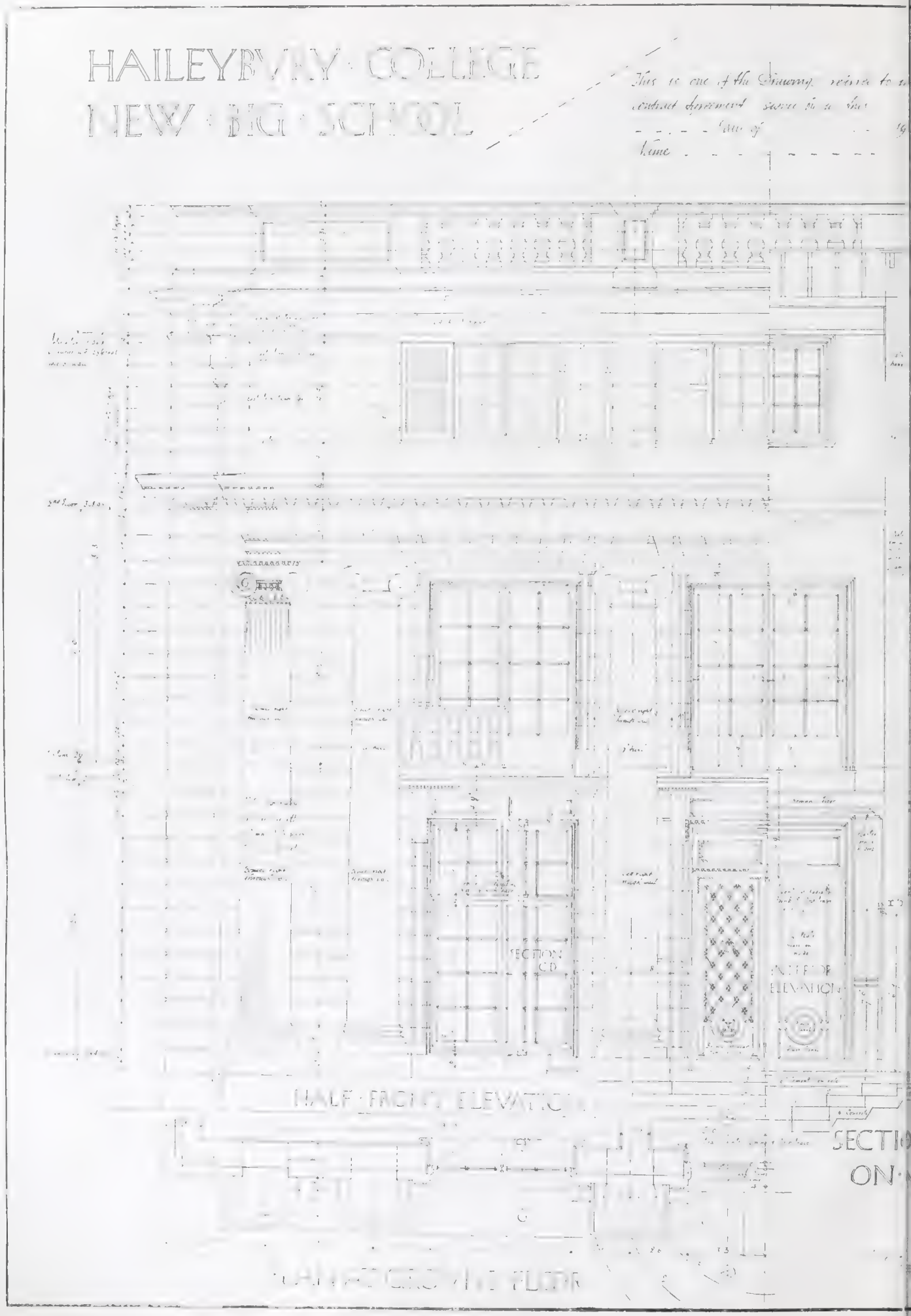
Mr. James Clark, J.P., house-painter and decorator, of St. Agnes, 18, Greenhill-gardens, Edinburgh, late of 124, George-street, Edinburgh, formerly secretary and president of the Master Painters' Association, who died on July 26 last, left personal estate in the United Kingdom valued at £3,585, of which £3,302 is in Scotland.

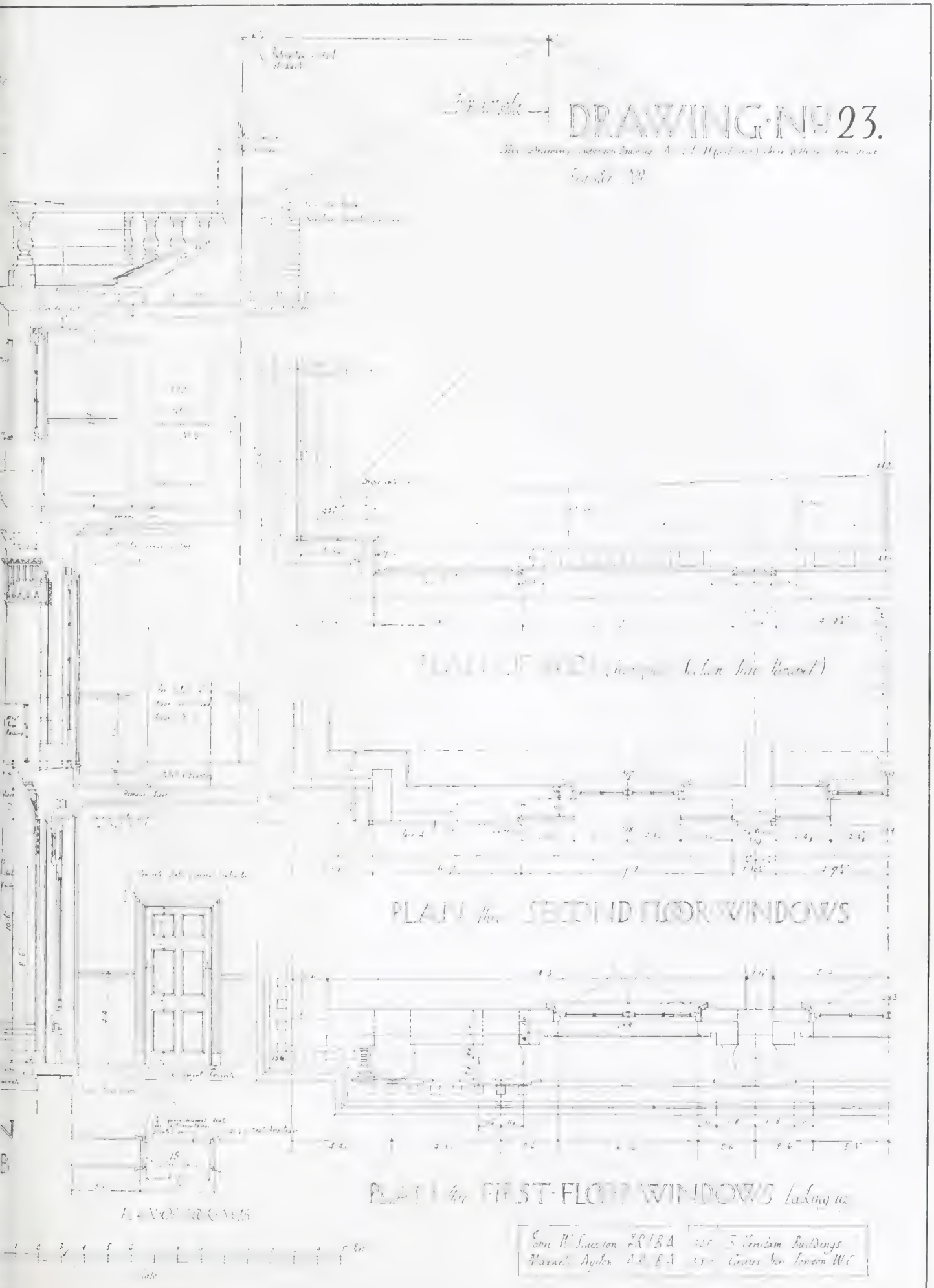
With the enlargement of the city boundaries, the Birmingham Corporation have found it necessary to undertake the rebuilding of six bridges in various parts of Greater Birmingham, of which one—that in King's-road, Hay Mills—is completed. The work, which will cost £30,000, is being carried out under the supervision of the city surveyor, Mr. H. E. Stilgoe.

A contract will shortly be let by the municipality of Antwerp for building an annexe to the Palais de Justice abutting on to the Avenue de l'Industrie and the Rue de la Justice. The work includes the construction of courts for the Conseil de Guerre, the Auditorat Militaire, Justices of the Peace, the Conseil des Prud'hommes, and the offices of several administrative services.

The archæological faculty of the British School at Rome will hold its annual meeting at the Society of Antiquaries' Rooms, Burlington House, on Tuesday, November 4, at 5 p.m. Sir Rennell Rodd, British Ambassador in Rome, will preside, and Mr. Arthur Smith will read a paper on "The Endymion Sarcophagus of Felix Hall." Good progress is being made with the buildings near the Villa Borghese, destined for the reconstituted institution.


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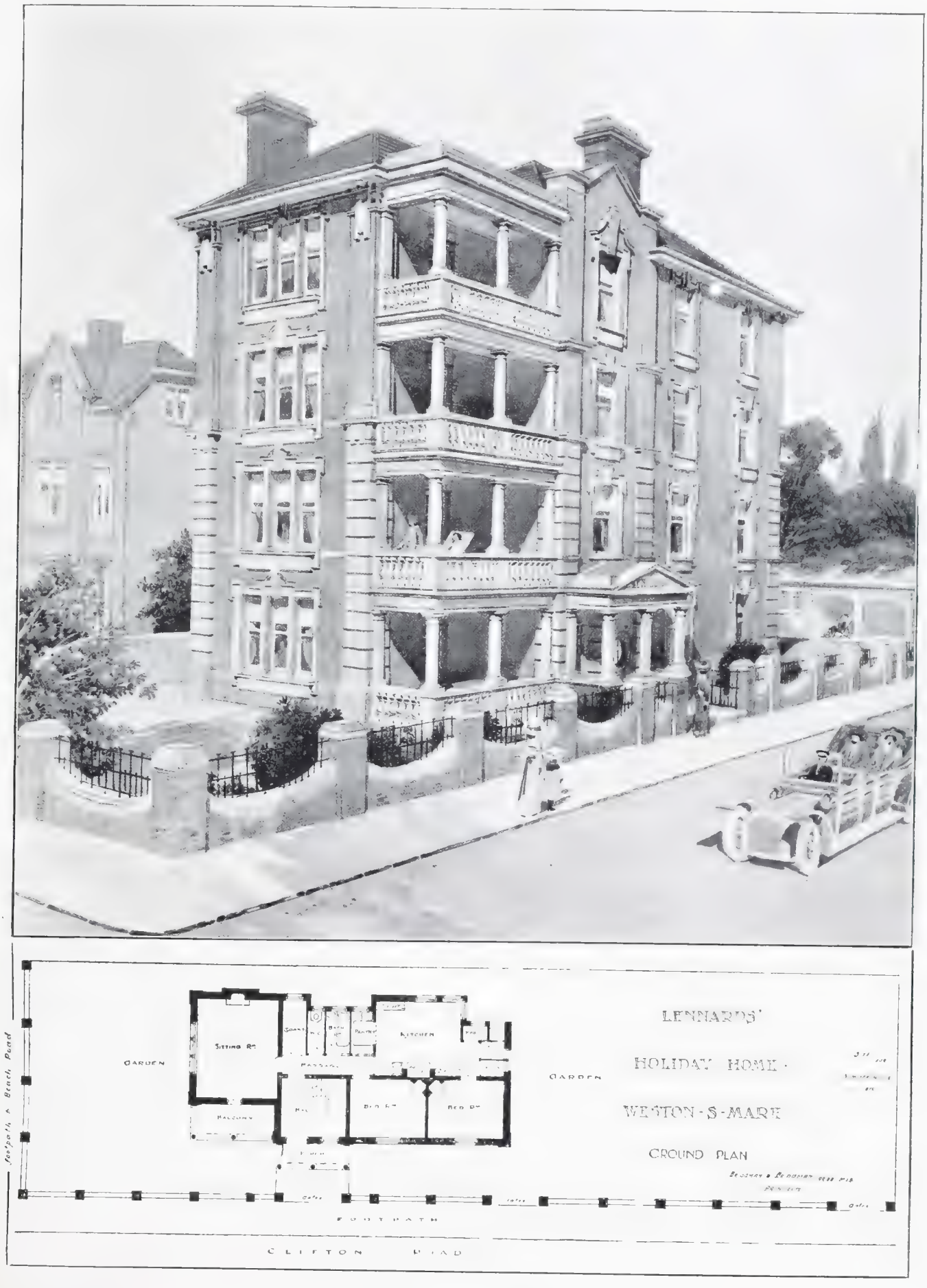

HAILEYBURY COLLEGE
NEW BIG SCHOOL
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DRAWING No 23.
PLAN of SECOND FLOOR WINDOWS
PLAN of FIRST FLOOR WINDOWS
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3 Verulam Buildings
Gray's Inn London WC

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NEW CATHEDRAL, TAI-AN-FU, SHANTUNG, NORTH CHINA.—Messrs. J. Francis Doyle and Sydney W. Doyle, Architects.



Messrs. BRIDGMAN and BRIDGMAN, Architects.

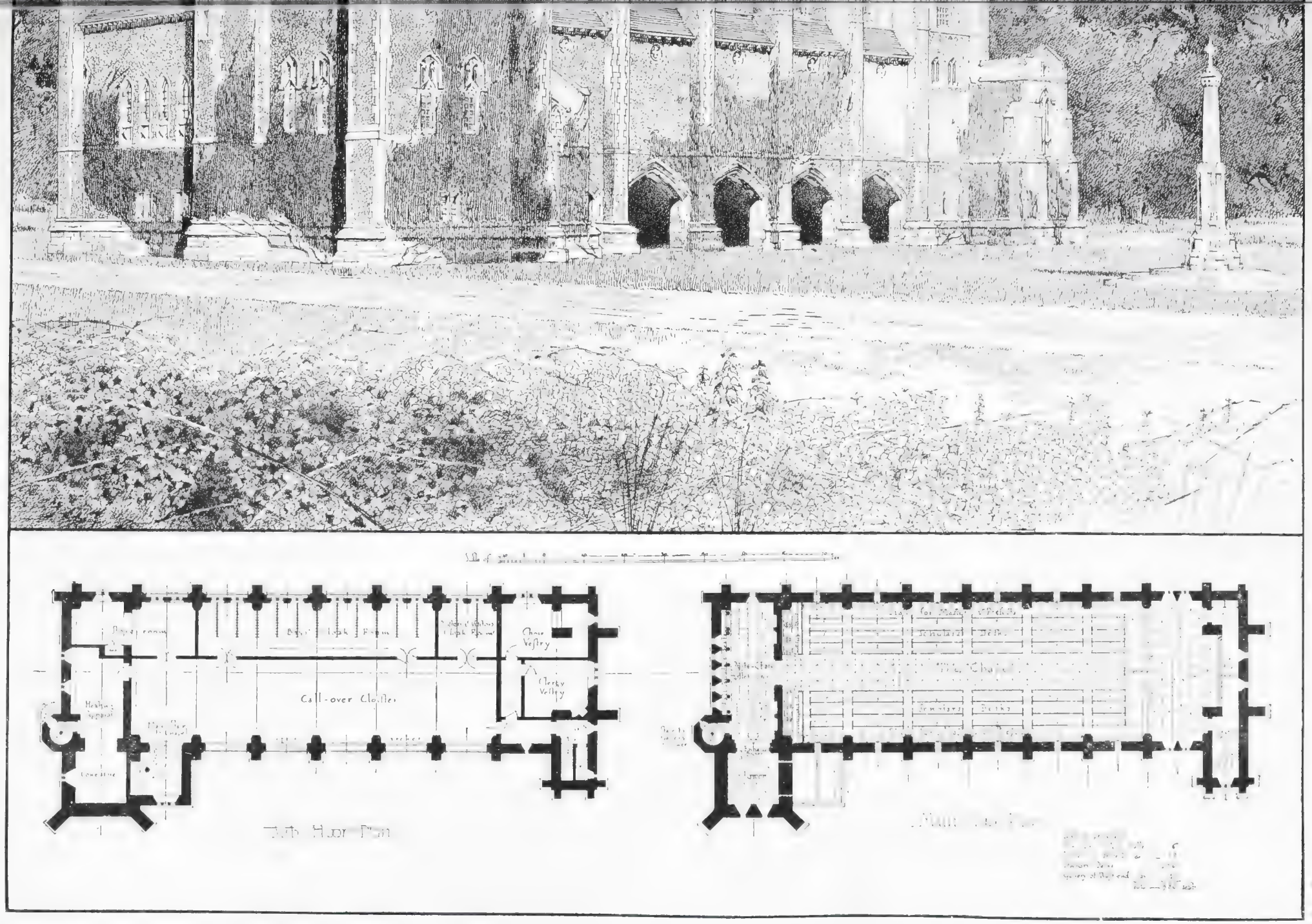


NEW CLUB HOUSE, TORONTO, CANADA, FOR THE T



NTO HUNT.—Messrs. DARLING and PEARSON, Architects.





GRESHAM'S SCHOOL CHAPEL, HOLT, NORFOLK.—Messrs. JOHN WM. SIMPSON, F.R.I.B.A., and MAXWELL AYRTON, A.R.I.B.A., Architects.

LEGAL INTELLIGENCE.

TRESPASS WITHOUT NOTICE TO AVERT DANGER.—Kirby v. Chessum.—In this action, reported in our last issue (p. 564), judgment was entered for the plaintiff for £20, but Mr. Justice Avory granted a stay of execution. The question of the liability of H.M. Office of Works, who had been joined as third parties, was argued on Friday. Mr. Justice Avory, in his judgment, said that the order for the work of underpinning the plaintiff's wall was given by the architect, who represented the Office of Works. If the order was to do the work irrespective of the consent of the owner of the land, the act was manifestly tortious, and no indemnity could be implied within the principle in "Sheffield Corporation v. Barclay" (1905). If the order was given subject to the owner's consent, as he found was the fact in this case, the defendants had not obtained that consent, and were responsible for the damage. The claim against the third parties must therefore be dismissed.

FATAL ACCIDENT AT BUCKINGHAM PALACE.—At Westminster Coroner's Court, on Friday, Mr. Ingleby Oddie held an inquest on Maurice Woodhouse, 55, a painter, of Field-road, Fulham, who was employed by Messrs. Leslie, contractors for the rebuilding of the front of Buckingham Palace, and was killed while at work on Tuesday morning. It appeared that Woodhouse, instead of going down from one staging to another by the scaffold ladder, which was only five feet away, took a short cut and attempted to go down by using his own ladder. He must have stepped on the loose end of some scaffolding that was being removed, causing the other end to tilt up. He fell through a hole only 2ft. 9in. wide. The foreman at the works said there were no instructions for rapidity over the job. There were plenty of men to get it done in time. A verdict of "Accidental death" was returned.

HOUSE-OWNERS AND THE LOCAL GOVERNMENT BOARD.—Arlidge v. Local Government Board.—This appeal, in which judgment was given in the Court of Appeal on Thursday in last week by Lords Justices Vaughan Williams, Buckley, and Hamilton, was argued last sittings. The Court was asked to decide whether the owner of a house which had been condemned as unfit for human habitation was entitled to see the report of the local inspector appointed under the Act, and to be heard before his appeal to the Local Government Board against the closing order was decided, or whether the Board had power to deal with the matter on the reports to them of their local inspector, following his public inquiry. Mr. William Arlidge is the owner of a house at Hampstead as to which a complaint had been made, and a closing order asked for, under the Housing and Town-Planning Act, 1909. The local inspector held two public inquiries, at which Mr. Arlidge gave evidence, and duly made reports to the Hampstead Borough Council, and they decided that it was a primâ-facie case for a closing order. There upon Mr. Arlidge appealed to the Local Government Board. Before his appeal came on for hearing, however, he was informed that the matter had been considered by the Board or some person properly appointed, who, acting on the information in the report of the local inspector, had decided to dismiss the appeal and confirm the order. Mr. Arlidge, who had spent a considerable sum in repairs, obtained a rule *nisi* for a certiorari to bring up the closing order to be quashed, on the ground that he had never been allowed to see the inspector's reports, and had not been heard, and therefore the order was improperly made. He desired to be heard as to the repairs executed since the notice had been served on him, and to show that the premises were no longer insanitary. The Divisional Court (Justices Ridley, Coleridge, and Bankes) were of opinion that the Local Government Board were not bound on an appeal to hear the appellant and his witnesses, and that it was competent to the Board to determine the question before them as to whether or not the closing order should be confirmed or discharged solely on the report of the inspector who had held a public inquiry, and on the perusal of written statements of the parties. The Court therefore discharged the rule. Mr. Arlidge appealed. Counsel for the applicant were Mr. Macmorran, K.C., Mr. Upjohn, K.C., and Mr. Brook Little; for the Local Government Board the Solicitor-General (Sir John Simon, K.C.) and Mr. Branson; and for the Hampstead Borough Council Mr. S. G. Turner.—By a majority of the Court the appeal was allowed, Lord Justice Hamilton dissenting, and the matter was referred back to the Local Government Board for reconsideration. In his judgment Lord Justice Vaughan Williams expressed the opinion that if an appeal was entered, the Local Government Board must decide it in their capacity of a statutory appellate tribunal in some more judicial way than merely sending a notice stating that "after an impartial and careful consideration" they dismissed the appeal. The refusal to give the appellant inspection of the reports on which the Board rested their decision was certainly wrong, and perhaps was the strongest evidence that could be given in support of a claim for a certiorari. The Local Government Board defended this refusal on the ground that reports to a public department were privileged from inspection, but it was contrary to natural justice that a man should not have an opportunity of knowing the contents of a report when there was a decision against him based on that report. In his opinion, following the judgments of Lord Loreburn in "Board of Education v. Rice," 1911, and of Lord O'Brien and Mr. Justice Madden in "Rex. v. Local Government Board," 1911, the appeal must be allowed.—Lord Justice Buckley concurred, stating that it was of the first importance that such proceedings should be conducted in such a way as to command public confidence. He thought very strongly that the appellant here was entitled, before a closing order was made, to be put in possession of the facts alleged against him on which the Local Government Board acted, and was entitled to an opportunity of upsetting them if he could. The report upon a public local inquiry was a public document, and it was quite wrong to aver that it was a privileged communication. The appellant was certainly entitled to see the inspector's reports. The appeal must succeed on that ground, and the closing order quashed. A decision of a Government Department was like the judgment of a Court. Not only must the proceedings be conducted openly, but the judge could not give his judgment with closed doors.—Lord Justice Hamilton read a dissenting judgment, in which he regarded the Local Government Board as "a statutory tribunal anomalous as compared with common law courts, created by the Legislature for a special class of appeals, and endowed by it with the power of formulating its own procedure."

A TRINITY-SQUARE SITE-VALUE APPEAL.—An appeal against a provisional valuation made by the Commissioners of Inland Revenue, under the Finance Act, 1909-10, of land in Trinity-square, E.C., was heard at the Surveyors' Institution on Wednesday by Sir Alexander Stenning, sitting as a Referee. The appellant was Miss M. E. Matthews, of Hove, who was until 1910 the owner of the freehold property, 5, Trinity-square, 1, Muscovy-court, and 11 and 12, Savage-gardens, Tower-hill, which was in that year purchased by the Port of London Authority as part of the site for the new offices they are erecting. Mr. W. Allen represented the appellant, and Mr. J. H. Shaw appeared for the Commissioners. Mr. Allen stated that the appeal involved the gross value of the property on April 30, 1909. The provisional valuation served in May, 1912, placed the gross value at £20,250. The full site value, the total value, and the assessable site value were all fixed at the same figure, and the appeal was against the total and the site value, on the ground that the gross value fixed by the Commissioners was insufficient. In July, 1910, Mr. R. A. Ellis, acting for the Port of London Authority, agreed with the representatives of Miss Matthews to purchase the property for £26,322 10s. and pay the vendor's costs, making in all £27,000. Not until the conveyance was it disclosed for whom he was purchasing. When the provisional valuation was served, the Commissioners had been informed of the sale; but, despite the fact that within about a year of April 30, 1909, the property had realised £27,000, they placed the value at £20,250. Gross value was defined under Section 25 of the Act as the amount which the fee simple of the land, sold at the time in the open market by a willing seller, free from encumbrances other than rates and taxes, might be expected to realise. This "gross value" had been interpreted by the House of Lords, in the case of "Herbert's Trustees v. The Commissioners of Inland Revenue," to be the full market value, free from all burdens, charges, and restrictions. The difference between the price at which Miss Matthews sold and the Commissioners' valuation was £6,750, so that Miss Matthews would be liable to pay increment duty of £949 for the rise in the value of land in a single year. The site, which had an area of 5,000 square feet, stood at the corner of Trinity-square, with a return frontage to Savage-gardens. In 1898, when the property produced a total rental of £830 a year, Sir David Burnett offered to rent the site on a building lease at £800 a year, while Messrs. S. Walker and Sons offered £20,750, plus an annuity of £150, representing another £1,800, and the owner's costs. He contended that the property was worth quite as much—probably a little more— as a cleared site than with the buildings that were upon it.—In support of the appeal, Mr. R. A. Ellis, who purchased the property for the Port of London Authority, said he had advised Lord Devonport, the chairman of that board, that £27,000 was the market value of the property. Sir David Burnett, F.S.I., the Lord Mayor of London, considered a fair value for the property in 1909 was £25,000. Mr. Samuel Walker valued the site in 1909 at £24,750, and Mr. J. R. Cooper estimated it at £25,725.—For the Commissioners, Mr. R. Ashford Dash, Superintendent Valuer of the London district, stated that the forecourt areas not being available for building, the authorities based their valuation on the estimate of £4 10s. a foot for the remaining 4,500ft., giving a total of £20,250. No one would have gone beyond, or even upt to, £4 10s. a foot in 1909, before the Port of London Authority came on the scene as possible purchasers. Mr. C. A. Lamb said he valued the property at £20,250 in 1909, when it was worth less than some years previously. Owing to the Government's land taxes, property had depreciated as regarded selling since 1906.—Mr. Howard Chatfeild Clarke, F.S.I., estimated the value of the site at £19,500.—Mr. Shaw, for the Commissioners, argued that the conditions of the sale in 1910, and also the offers made in 1898, in no way corresponded with the conditions laid down for the valuation of property under Section 25 of the Act. It was not for sale in the open market, and the owner was not a willing seller. Section 25 contemplated, not the price a person could obtain from the necessities of a person who wanted to buy, but the price which, if a person wanted to sell, he could obtain in the open market.—Judgment was reserved.

Mr. T. C. Ekin, Local Government Board inspector, held a public inquiry at the town-hall, Maidstone, on Thursday in last week, with reference to an application by the town council for power to borrow a sum of £6,120 for extensions to the electric-lighting plant. The town clerk (Mr. S. L. Monckton) and the electrical engineer (Mr. E. E. Hoadley) explained the proposals. It was stated that a profit of £1,182 was made on the electric works last year.

A delay has occurred, owing to recent strikes in the North of England, in the carrying out of the experiment of strengthening the foundations of St. Paul's Cathedral by cementing the subsoil of sand. Experimental borings have been made on the site of the old Post Office in St. Martin's-le-Grand, where steel tubes will be sunk. The work will be put in hand as soon as possible; but the result will probably not be known until the middle of January.

Mr. Arthur H. Baxter has been appointed head of the art department of the Battersea Polytechnic at a salary of £300 per annum, rising by four annual increments of £15 and two of £20 to £400 per annum, in place of Mr. A. H. Andrews, who has accepted an appointment in India. Mr. Baxter has been for twelve years master in charge of designs and crafts in the Liverpool School of Art. He has had practical experience in designs for craft-work and the interior decoration of buildings and steamships.

The members of the rural district council for Liskeard discussed on Saturday a report received from their surveyor stating that they could not carry out their contracts with the county council of Cornwall unless the roadmen had cottages. It was pointed out that if they decided not to build houses for the men working on the main roads, they would have to face the fact that the county council might take them over. It was eventually decided, for the present, to build six cottages for the district roadmen—viz., two at St. Neot, and one each at Bosconnoc, St. Martins, Morval, and Talland.

Whilst excavations were being made for the drains for the new gymnasium in the course of erection in the grounds of the Simon Langton Schools, Canterbury, last week, the workmen unearthed a good specimen of a Roman tessellated pavement. Unfortunately, before they realised the value of the find, the mosaic had been considerably damaged by the pick. Excavations on four previous occasions in the school grounds have reached, at a uniform depth of 7ft. from the present surface level, similar portions of tessellated pavement, the last occasion being some seven years ago. The original buildings of the monastery of the White Friars were evidently built on the site of a Roman villa.

STATUES, MEMORIALS, &c.

THE BATTLE OF LEIPZIG.—The monument erected about three miles from Leipzig to commemorate the centenary of the Battle of the Nations was dedicated on Saturday. The foundation-stone was laid just forty years ago; but the project hung fire for twenty years, when a young Leipzig architect named Clemens Thieme decided to do something towards the realisation of the scheme, and founded the German Patriotic League. Thanks to his determination and perseverance, in 1895 prizes were offered for the best designs for a monument. None of the designs submitted was considered satisfactory in every respect, and Professor Bruno Schmitz, the designer of the Kyffhäuser monument, was requested by the committee to submit plans. Work on the memorial was commenced on October 18, 1898, the foundation-stone being the same stone laid in 1863. The monument, which stands on an artificially-formed eminence, is just 300ft. high. It takes the form of a four-sided truncated pyramid, and is constructed of huge blocks of granite and porphyry quarried in the neighbourhood. In the centre of the base, in front, is a carved figure of St. Michael. The archangel stands resting on a shield, with his sword pointed down, while on his right and left hand in relief are the furies of war, carrying torches. Above the furies are figures of eagles, symbolising Victory, and Freedom. The only inscriptions on the memorial are the words "Gott mit uns" and "18 Oktober, 1813." In the interior of the monument is a crypt to the honour of the heroes who fell in the fight with Napoleon. The idea is symbolised by the figures of sixteen warriors, each on one side of eight pillars, represented with their heads bowed, their hands resting on their swords. Above the crypt is a hall of glory in which are four figures symbolising the virtues and qualities the possession and application of which resulted in the re-awakening of Germany. Each figure is 32ft. high, and is carved out of solid granite. In front of the monument is a large oblong artificial piece of water.

Paddington Borough Council, at its meeting on Tuesday, decided to expend £20,000 on the provision of public baths for the borough on a site near Manor-place, Harrow-road.

The Belfast Harbour Commissioners, at a meeting on Tuesday, decided to expend a sum of £45,000 in the erection of new wharves and jetties in the Musgrave Channel, adjacent to Queen's Island, for the fitting out of new vessels after they are launched. The expenditure is in addition to the sum of £70,000 which the Commissioners some time ago agreed to spend in the construction of a new deep-water wharf.

A Local Government Board inquiry has been held at Loughborough, Leicestershire, into an application of the corporation for sanction to borrow £14,000 for extensions to their electricity works. The scheme has been prepared by Mr. W. H. Allen, the borough electrical engineer. Messrs. A. E. King and Co., Baxter Gate, Loughborough, are the architects for the buildings.

The engagement is announced of Captain Arthur L. Mackinnon, Cameronians (Scottish Rifles), son of Brigade-Surgeon Charles Mackinnon, late A.M.D., and Mrs. Mackinnon, of 18, Grassington-road, Eastbourne, and grandson of the late Major-General John Nisbett, B.S.C., and Anne Frances, daughter of Mr. A. Marshall Mackenzie, A.R.S.A., LL.D., F.R.I.B.A., and Mrs. Mackenzie, of Coull, Aberdeenshire.

As an alternative to the new road from Kingston Vale to Esher advocated by the Road Board, and to the cost of which it has promised to contribute, Kingston-on-Thames Town Council has resolved to ask Parliament for powers for the widening of the existing main road from the top of Kingston Hill to the tramway junction at Eden-street, a distance of approximately a mile and a half. Twenty years ago Kingston spent many thousands of pounds in widening this road, but motor traffic has now rendered a further widening imperative.

The death took place at Aberdeen on Saturday night, after an illness of seven weeks, of Mr. Percy Bate, director of Aberdeen Art Gallery. He was educated at Maidstone Grammar School. After being senior assistant at Maidstone Museum, he was appointed curator of Holburne Museum, Bath. In 1900 he went to Scotland as acting secretary of the Royal Glasgow Institute of Fine Arts, which post he held until December, 1911, when he was appointed to Aberdeen Art Gallery as lecturer and author. Mr. Bate was forty-five years of age and leaves a widow and one son.

Our Office Table.

Mr. John W. Simpson, F.R.I.B.A., secretary of the British section, writes that at the Assembly General of the International Permanent Committee of Architects, held recently in Paris, it was resolved that the tenth international congress of architects should be held at St. Petersburg in the spring of 1915. The preliminary programme of subjects for discussion is as follows:—

(1) The Responsibilities of Architects. (2) Architects' Schedules of Remuneration. (3) The Appointment of Official Architects to Government and Municipal Departments. (4) Copyright as affecting Architects. (5) Women as Architects. (6) The Duties and Privileges of the Architect's Profession. (7) National and International Public Competitions and the Position of an Architect placed first in an International Competition or entrusted with Work in a Foreign Country. (8) The "Staffelbauordnung," or Regulations affecting Building Construction applicable to the Respective Zones or Districts of a Town. (9) Cheap Dwellings. (10) National Characteristics in Architecture. (11) The Evolution of the Theatre during the last Twenty Years. (12) The Preservation of Historical Monuments, and its Compatibility with the Economic, Hygienic, and Social Requirements of Towns. (13) An Exhibition of Plans and Models of Modern Theatres. (14) An Exhibition of Ancient Russian Architecture.

Of the foregoing proposals, Nos. 13 and 14 have been definitely accepted, and intending exhibitors in this country are requested to communicate with Mr. Simpson, 3, Verulam-buildings, Gray's Inn, W.C., as soon as convenient. Observations and suggestions which which may reach him with reference to the other matters for discussion will be considered by the British section with a view to their definite adoption by the International Committee at its assembly in May next. The congress promises to be of great interest, and Mr. Simpson will be glad to hear from British architects who may wish to contribute papers on any of the subjects above mentioned.

Mr. Mervyn Macartney, in a letter to the *Times*, calls attention to the slow progress which is being made by the Royal Commission on Ancient Monuments, over which Lord Burghclere presides. It has been in existence just five years, and during this period has completed the survey of two counties. At this rate its labours will not be brought to a close before the year 2080, when by far the greater part of the historic monuments will have ceased to exist. Mr. Macartney urges that a policy of decentralisation should be adopted, so that a uniform and complete survey of the United Kingdom may be made within a reasonable time and a permanent record issued.

"The Houses of the Egyptian Dead" was the subject of Mr. Banister Fletcher's second lecture at the British Museum, on "Egyptian Architecture," given on Thursday afternoon in last week. By means of lantern views the author illustrated and described the Royal tomb chamber in the heart of the Pyramid of Cheops. The Pyramids, he remarked, were the most extravagant of all ancient buildings; for the relative return in the higher beauties of art was small compared with the labour, expense, and amount of material: small, too, was their utility, for they failed in the object for which they were designed. The governing idea in the various houses of the Egyptian dead, whether pyramid, mastaba, or rock-hewn tombs, was to provide for the permanent preservation of the body until the time when it should be once more rejoined by the soul. The peculiar pathos which attached to the Pyramids was that they were so soon rifled by Persians, Romans, and Arabs. The mortuary chapels attached to the Pyramids were full of significance in the light they threw on the religious rites in connection with the dead. Of the thirty-nine rock-cut tombs in the Theban Mountains, the tomb of Khnem Hotep was of special interest; for its architrave, cut out of the living rock, and its sixteen-sided, fluted, and tapering columns had been considered to be an imitation of tree trunks, and in their turn the prototype of the Greek Doric order.

In the course of an address given at the opening of the Art and Crafts Exhibition at the town hall, High Wycombe on Monday, Professor W. R. Colton, A.R.A., member of the standing committee of advice for education in art, remarked that England was absolutely blind to modern fine art, unless it was grossly eccentric, and indifferent to development in modern industrial art. Whatever prosperity our art industries might have today was obtained either by turning out cheap goods indifferent in design and execution, or by making imitations of the old examples. No organised assistance was given us by the State. We had no Ministry of Fine Arts, and no museums of modern industrial art. The French Government was both practical and imaginative in looking after the serious business of art. In England, on the other hand, no public funds were available to buy modern examples of fine or practical art; we had neither money to buy modern examples nor room to exhibit and warehouse them. The Victoria and Albert Museum had gradually divorced itself from modern and living work, and was becoming a museum of examples of certain periods rather than a catholic collection of the fine examples of all periods useful to the modern designer. He urged the desirability and importance of founding museums of modern industrial art in London and the great provincial towns.

The urban district council of Broadstairs received at the last meeting a letter from Mr. A. Foster, a local architect, in which he advanced reasons, quoted illustrations, produced photographs, and enclosed plans, on behalf of the substitution of a model clause issued by the Local Government Board for the present building by-law No. 27, which lays down that the party-wall must be carried through the roof. He favoured the substitution of the model clause on the grounds that (1) the party-wall as at present built constituted a menace to health, as it was very difficult indeed to make the same weather-tight. Dampness arose owing to the rain soaking into the wall and passing on to the internal plaster and wood. (2) Architecturally it was bad, as it was practically impossible to design houses of artistic appearance owing to the harsh division made by the party wall dividing a part of the house into units which must be treated separately instead of as a whole. (3) Although the present by-law was primarily for protection against fire, it was debatable whether the same was efficient unless the height was greater than 15in., and in any case fire could easily pass from one building to another by means such as balconies. Summing up, the writer pointed out that the danger of dampness was greater than fire; many seaside towns did not insist upon a party-wall being carried through the roof; and there were many reasons for altering the by-law in order that the buildings of the town could be made more weather-tight, healthy, and artistic. The chairman agreed with much in Mr. Foster's letter on the subject of beauty and the question of fire, and suggested that the letter should be referred to the general purposes committee. This was carried.

At a meeting at Newcastle-on-Tyne last Saturday, a demonstration of the new electrolytic treatment of cases of industrial lead poisoning was given by Mr. T. Maltby Clague, of Newcastle. The investigations had been undertaken by Sir Thomas Oliver, M.D., whose knowledge of lead and other industrial poisonings had made his name famous. The old treatment of pads in an electric bath had the defect that they did not know how much of the current passed through the man, and how much was lost in the water. The new method was to have two baths, one for the feet and another for the hands and arms or other parts of the body. By this method they secured a controllable current to pass through the body, and they had succeeded in getting out considerable quantities of lead from all the men whom they had treated. Sir Thomas Oliver also gave an address on the subject of lead-poisoning. He suggested that instead of the weekly hot-water bath for leadworkers after work required by the Home Office, there should be substituted an electrolytic bath. He stated that, under this treatment, the blue

line in the gums, which was a characteristic indication of lead-poisoning, disappeared. The members of the institute afterwards visited the brassworks of Messrs. Walker, Parker and Co., Ltd., Newcastle. The members were entertained to luncheon by the sanitary committee of the Newcastle Corporation. The lord mayor in submitting the toast of "The Royal Sanitary Institute" said that the membership was now 4,500.

The Ruislip Manor Cottage Society, formed to lay out the estate of King's College, Cambridge, at Ruislip, Middlesex, comprising some 1,300 acres, has developed into the National Cottage Society, with offices at 33, Henrietta-street, Covent Garden. The society is being registered for the purpose of taking up land, and building, letting, and selling small houses and cottages, on the same lines as at Ruislip, so that the pleasant surroundings which in most towns and villages are obtainable only by the well-to-do, can be secured for those earning small salaries or weekly wages. It proposes also to form local cottage societies and to act as the agent and builder for the erection of cottages for landowners and others, as well as a clearing house or intermediary in the case of persons or societies desiring to avail themselves of the financial aid granted by the State under existing or future legislation for the promotion of cottage building. The architect of the society is Mr. Courtenay M. Crickmer, who won the prize design for a pair of workmen's cottages at the Ideal Home Exhibition. The cost of the cottages would vary in different localities, but £175 each is an estimated average price.

Owing to the prompt action of the official in charge at the offices of the Law Land Company, Ltd., at Norfolk-street, Strand, what might have been a serious fire was averted. Shortly before 7 p.m. on Sunday evening an outbreak of fire was caused by a defect in the electric light main. Immediately on this occurring the attendant called the brigade on the private fire telephone, which connects the company's offices with the Whitefriars Station. Within three minutes a large force of the brigade and salvage corps was in attendance, and owing to their skilful work the fire was confined to the basement of one building.

The new catalogue of the National Radiator Company, Ltd., 439 and 441, Oxford-street, London, W., is a most useful compendium for architects and the heating trade. A great number of new goods are shown, among which we may mention the following: Steel baffle plates for ventilating radiators (pp. 26 and 27); vento heaters for indirect heating and ventilation (pp. 40 and 41); Ideal radiator tops (p. 43). No. 3 F series boilers (pp. 82-87); these are the first of a new type of "Ideal" boiler, of which there will be three smaller series available within the next few months. These will range from 10 to 100 square feet of heating surface: all the boilers in this series will be completely insulated with steel jackets. Smoke pipe and elbow, as made at the Hull works (p. 91). Wall radiators fitted in storage cylinders (p. 103); the convenience and economy of this method of hot-water supply are explained. Ideal concealed regulating-valve (p. 108); the simplicity, neatness, and convenience of this valve will be recognised by all architects and engineers. There are also included some additional data at the end of the book, and all the information, as far as possible, is brought up to date. The pocket size, which is found very convenient by so many customers, is wisely retained, and the limp cloth adds to the usefulness of this business-like booklet.

It was announced by the Lord Mayor of Dublin on Monday that the Chief Secretary intends immediately to appoint a Departmental Commission to inquire into the housing of workers in Irish cities and towns.

The rural district council of Whittlesey appointed at their last meeting Mr. Ruddle, of Peterborough, as architect for the twelve workmen's dwellings they decided to build on land purchased from the trustees of the United Charities.

MEETINGS FOR THE ENSUING WEEK.

FRIDAY (TODAY).—Glasgow Architectural Craftsmen Society. "The Execution of Reinforced Concrete Work." by Robert Park, 8 p.m.

SATURDAY.—Incorporated Clerks' Association. Visit to Sir Robert Rowand Anderson's Offices, 15, Rutland-street, W.C., 3 p.m.

MONDAY.—Society of Engineers. Address by the President, Mr. Alexander Haswell, at Society Rooms, 17, Victoria-street, S.W., 7.30 p.m.

Architectural Association. Annual Meeting. Address by the President, W. Curtis Green, F.R.I.B.A., and Distribution of Prizes, 8 p.m.

FRIDAY, Oct. 31.—Design Institution of Engineers. "The Difference between a Drainage Sewer and Roof-Rain Sewer," by [illegible].

SATURDAY, Nov. 1.—Institution of Municipal and County Engineers. Metropolitan District Meeting. Visit to the Houses of Parliament, and to [illegible] Hampton Court, Essex.

Mr. Thomas Arthur, of Whitburn, near Bishop Auckland, has been appointed parish surveyor of Langholm.

Mr. J. S. Wooddisse, highway surveyor to the Shardlow Rural District Council, is to have his salary increased to £250 rising to £300 per annum.

The parish church of Lock Kirkby, Lonsdale, was destroyed by fire early on Wednesday morning. The damage, which is estimated at £5,000, is covered by insurance.

A large permanent [illegible] is about to be erected in the Euston road opposite to Kings Cross Station. Building operations will be commenced almost immediately and the [illegible] to be opened at Christmas, 1914.

The progress with the work of refronting Buckingham Palace has been so good that it was found practicable at the end of last week to dispense with night work. The remainder of the operations will be concluded in daylight only.

The contract for the second section of the new Welland Canal has been awarded to Messrs. Baldry, Yerburgh, and Hutchinson, of 21, Queen Anne's-gate, S.W., and Arlington House, Quarry-lane, Mansfield, Nottinghamshire. The tender was accepted at £1,100,000.

A Local Government Board inquiry has been held into an application of the Chertsey Rural District Council for sanction to a loan of £1,770 for the purchase of land at Chobham and the erection of working-class dwellings thereon. Mr. H. Beeney, surveyor to the council, has prepared the plans.

Prince Arthur of Connaught will open the new Middlesex Guildhall on December 19. Mr. James S. Gibson was the architect, and Mr. James Carmichael, of Wandsworth, the contractor. The building was illustrated, from Mr. Gibson's selected design, in our issue of February 3, 1911.

Lieut.-Col. G. E. Holman, V.D., L.R.I.B.A., of Messrs. Holman and Goodrham, architects, 6, King's Bench-walk, Temple, late Colonel Commanding 17th Battalion County of London Regiment, is now slowly recovering from the operation, and expresses grateful thanks to the numerous friends who have written, telegraphed, called, or sent messages.

Mr. A. C. Madge, sanitary inspector to the Rochford Rural District Council, presented at the last meeting a scheme of sewerage and sewage-disposal for the populous portion of Rochford. Such scheme provided for a population of 2,600, and was estimated to cost £8,142. The proposal was referred to the sewage-disposal committee for consideration.

The death has occurred at Bridgend of Mr. Theophilus Creswick, who was among the oldest civil engineers in the country, and one closely identified with the early development of the iron and coal industries of South Wales. For a time he was an ironmaster and colliery owner in West Glamorgan, and until recent years was consultant engineer to the Cardiff Railway Company.

The Arbroath Town Council have resolved to construct an ornamental island on Brothock Bridge, the widest thoroughfare in the burgh. The island will be placed exactly in the centre of the Square, will be oval in form, and the fountain which has long stood in a corner of the Square is to be removed from its present position and put in the middle of the island. The suggestion has been made that the proposed Burns statue might also be set up on the island. The cost of the improvement will be over £1,200.

Trade News.

WAGES MOVEMENTS

WAKEFIELD.—Over [illegible] the demand of Mr. F. E. Hurst, [illegible] on Wakefield has been settled. The [illegible] per week will be [illegible] June 2nd, 1914 [illegible] 1914.

IPSWICH.—The [illegible] carpenters' [illegible] at Ipswich [illegible] and has caused considerable trouble in the town. [illegible] Thirteen [illegible] interested in [illegible] present [illegible] Monday. [illegible] the [illegible] at Ipswich [illegible] effected [illegible] were directly concerned.

Mr. E. M. Lee has prepared [illegible] an electricity scheme for Teignmouth and Shaldon involving an expenditure of £20,800.

At Oxford University Mr. R. S. Troup, of the Indian Forest Service, has been appointed assistant to the Professor of Forestry (Sir William Schlich) during the present Michaelmas Term.

An exhibition of drawings in support of the Manchester School of Architecture is now on view at the rooms of the Manchester Society of Architecture in the Geographical Society's building at 16, St. Mary's Parsonage, in that city.

Mr. Robert Maynicke, of the firm of Messrs. Maynicke and Frank, architects, died at Bedford Hills, Mass., on September 29 in his sixty-fifth year. Mr. Maynicke had been prominently identified with architectural practice in the city of New York for a number of years, and was an active member in the councils of the Architectural League.

The City Corporation had under consideration at their last meeting the Cloth Fair improvement. The Improvements and Finance Committee reported that they were of opinion that it was not desirable to enter on the large scheme suggested. They recommended that the Sanitary Committee should deal with the matter and report to the Court. This was agreed to.

The David Livingstone centenary celebrations took place at Barnet on Saturday. A memorial consisting of a bronze portrait of Livingstone in high relief, set in a circular panel upon a carved mural tablet, was unveiled by Mrs. Livingstone Wilson, the only surviving daughter of David Livingstone. The memorial is fixed on the front of the house in Hadley Green where Livingstone lived in 1857, and where he wrote his "Missionary Travels and researches in South Africa."

Mr. Lancelot A. Phipson of Hog Hill, Rose-X writes pointing out that the corporation of Coventry have bought a large timber house at the corner of Jordan Well and Whitefriars-street, in that city, which they are about to demolish. Unless some man of energy and taste comes forward Mr. Phipson fears that it will be torn and hacked to pieces in the usual wanton manner, and sold for firewood or what not; whereas, the oak being still sound, it could be once more put together and last as many more centuries as it has already stood, and that probably at a less cost than to build an ordinary flimsy framework of common deal.

Mr. T. C. Ekin, one of the inspectors of the Local Government Board, held an inquiry last week at the Guildhall into an application by the corporation of Norwich for consent to borrow £25,000 for purposes of their electricity undertaking, and £5,470 for the purpose of widening and diverting the River Wensum. The necessity for extension of the electricity plant and work was explained by Mr. F. M. Long, the city electrical engineer. The town clerk explained that at a point just below Duke's Palace Bridge the River Wensum makes a sharp turn and almost forms the letter S, and is 53ft. wide, and at this point the contemplated river widening and straightening, the subject of the inquiry, was intended. It would be carried out from plans prepared by Mr. A. E. Collins, the city engineer. From New Mills to Cow Tower, a point just above Bishop Bridge, there were buildings upon both banks of the river, but above and below these points there was low-lying ground, which was at intervals disastrously flooded. On the last occasion 3,650 persons were affected representing a population of over 15,000 and parts of four blocks of buildings just above Duke's Palace Bridge fell into the river.

LATEST PRICES.

IRON.

Steel Joists, Belgian and German (ex steamer, London)	per ton	£6	2	6	to	£6	5	0
Steel Joists, English		7	10	0	,,	7	12	6
Wrought-Iron Girder Plates		7	0	0	,,	7	5	0
Steel Girder Plates		7	2	6	,,	8	2	6
Bar Iron, good Staffs		6	5	0	,,	8	10	0
Do., Lowmoor, Flat, Round, or Square		20	0	0	,,	0	0	0
Do., Welsh		5	15	0	,,	5	17	0

Boiler Plates, Iron—
South Staffs ..... 8 0 0 ,, 8 15 0
Best Snedshill ..... 9 0 0 ,, 9 10 0
Angles 10s., Tees 20s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £8 15s to £9.
Ditto galvanised, £14 to £15 10s. per ton.

Galvanised Corrugated Sheet Iron—

	No. 18 to 20.	No. 22 to 24
6ft. to 8ft. long, inclusive Per ton. gauge	£13 0 0	£13 10 0
Best ditto	13 0 0	14 0 0

Wire Nails (Points de Paris)—

3 to 7	8	9	10	11	12	13	14	15	B.W.G.
8/3	8 9	9/3	9/9	10/3	11/-	11/9	12/6	13/6	per cwt.

	Per ton.				Per ton.		
Cast-Iron Columns	£7	10	0	to	£9	0	0
Cast-Iron Stanchions	7	10	0	,,	9	0	0
Rolled-Iron Fencing Wire	8	5	0	,,	8	10	0
Rolled-Steel Fencing Wire	7	5	0	,,	7	10	0
,, ,, ,, Galvanised	8	15	0	,,	9	5	0
,, ,, ,,	5	0	0	,,	5	5	0
Cast-Iron Sash Weights	9	15	0	,,	—		
Cut Floor Brads	16	0	0	,,	—		
Corrugated Iron, 24 gauge							
Galvanised Wire Strand, 7 ply, 14 B.W.G.	14	5	0	,,	—		

B.B. Drawn Telegraph Wire, Galvanised—

0 to 8	9	10	11	12	B.W.G.
£10 10s.	£10 15s.	£11 0s.	£11 5s.	£11 15s.	per ton.

Cast-Iron Socket Pipes—

3in. diameter	£6	2	6	to	£6	7	0
4in. to 6in.	6	0	0	,,	6	5	0
7in. to 24in. (all sizes)	5	7	6	,,	6	0	0

[Coated with composition, 5s. 0d. per ton extra, turned and bored joints, 5s. 0d. per ton extra.]

Pig Iron—	Per ton.
Cold Blast, Lilleshall	110s. 0d. to 117s. 6d.
Hot Blast, ditto	70s. 0d. ,, 75s. 0d.

Wrought-Iron Tubes and Fittings—Discount off

Standard Lists f.o.b. (plus 2½ per cent.)—	75 p.c.
Gas-Tubes	72½ ,,
Water-Tubes	67½ ,,
Steam-Tubes	65 ,,
Galvanised Gas-Tubes	62½ ,,
Galvanised Water-Tubes	57½ ,,
Galvanised Steam-Tubes	

OTHER METALS.

Spelter, Silesian	Per ton	£20	10	0	to	£21	0	0
Lead Water Pipe, Town		24	15	0	,,	—		
,, ,, ,, Country		25	10	0	,,	—		
Lead Barrel Pipe, Town		25	15	0	,,	—		
,, ,, ,, Country		26	10	0	,,	—		
Lead Pipe, Tinned inside, Town		26	15	0	,,	—		
,, ,, ,, ,, Country		27	10	0	,,	—		
Lead Pipe, Tinned inside and outside Town		29	5	0	,,	—		
,, ,, ,, ,, Country		30	0	0	,,	—		
Composition Gas-Pipe, Town		27	15	0	,,	—		
,, ,, Country		28	10	0	,,	—		
Lead Soil-pipe (up to 4½in.) Town		27	15	0	,,	—		
,, ,, ,, Country		28	10	0	,,	—		
[Over 4½in. £1 per ton extra.]								
Lead Shot, in 28lb. bags		24	15	0	,,	—		
Copper Sheets, sheathing & rods		89	0	0	,,	89	10	0
Copper, British Cake and Ingot		79	10	0	,,	80	0	0
Tin, English Ingots		188	17	6	,,	189	2	6
Do., Bars		189	17	6	,,	190	5	0
Pig Lead, in 1cwt. pigs (Town)		21	15	0	,,	—		
Sheet Lead, Town		24	5	0	,,	—		
,, ,, Country		25	0	0	,,	—		
Genuine White Lead		31	15	0	,,	—		
Refined Red Lead		25	0	0	,,	—		
Sheet Zinc		20	0	0	,,	—		
Old Lead, against account		19	5	0	,,	—		
Tin	per cwt.	10	10	0	,,	—		
Cut nails (per cwt. basis, ordinary brand		0	11	6	,,	—		

TIMBER.

CONSTRUCTIONAL.

Yellow Pine Deals, Quebec, per standard:— 1st quality		£38	0	0	to	£45	0	0
,, ,, ,, 2nd ,,		26	0	0	,,	32	0	0
,, ,, ,, 3rd ,,		16	0	0	,,	18	10	0
Spruce Deals: St. Johns		10	0	0	,,	11	10	0
,, ,, Miramichi		9	10	0	,,	10	10	0
,, Boards: Swag		11	0	0	,,	12	0	0
Red Deals: rchangel 1st quality		21	0	0	,,	24	0	0
,, ,, ,, 2nd ,,		16	0	0	,,	19	0	0
,, ,, ,, 3rd ,,		12	0	0	,,	14	0	0
,, ,, St Petersburg—								
,, ,, ,, 1st quality		16	10	0	,,	18	0	0
,, ,, ,, 2nd ,,		14	10	0	,,	15	10	0
,, ,, Wyburg & Ulcaborg		12	10	0	,,	15	0	0
Gefle, Gothenburg, and Stockholm		13	10	0	,,	17	0	0
White Deals: Crown		14	0	0	,,	15	10	0
,, ,, Seconds		11	10	0	,,	13	0	0
Flooring: White and Planed— 1st and 2nd quality mixed		10	15	0	,,	11	15	0
1st, 2nd, & 3rd quality mixed		10	5	0	,,	11	0	0
Red Planed, 1st quality		11	10	0	,,	17	0	0
Pitch Pine: Prime Deals and Boards		18	0	0	,,	23	0	0
Lignum Vitæ	Per ton	7	0	0	,,	14	0	0

	Per cubic foot.						
Yellow Pine Logs (waney board)	0	5	0	,,	0	5	6
Pitch Pine Logs	0	2	0	,,	0	2	6
Birch: Quebec Logs	0	2	3	,,	0	2	9
Oak: Austrian Wainscot	0	7	0	,,	0	8	0
Mahogany: Gaboon	0	2	0	,,	0	2	3

FURNITURE AND HARDWOODS.

Teak: Burmese, per load, 50ft.	£20	0	0	to	£25	0	0
Teak: Java, per load, 50ft.	16	0	0	,,	21	0	0
	Per cubic foot.						
Oak Planks: U.S.A., imported	0	1	9	to	0	2	6
,, Boards ,, ,, Prm.	0	3	0	,,	0	3	6
,, ,, ,, ,, Mdm.	0	2	6	,,	0	2	9
Sequoia (Californian Redwood)	0	2	4	,,	0	3	6
Birch: Quebec logs	0	2	3	,,	0	2	9
,, ,, sawn planks	0	1	3	,,	0	2	0
Oak: Austrian Wainscot	0	7	0	,,	0	8	0
Walnut: Prime boards and planks	0	6	0	,,	0	6	6
Walnut: Mdm. ,, ,,	0	3	6	,,	0	4	6
Greenheart: Hewn logs	0	3	3	,,	0	4	0
Cedar: Cigar box	0	4	9	,,	0	5	6
Satin Walnut: Imp. sawn boards, prime	0	2	4	,,	0	2	9
Orham: Imp. sawn boards, prime	0	2	0	,,	0	2	3
Mahogany: St. Domingo, Cuba, and Honduras	0	6	0	,,	0	9	0
,, African, Assinee, &c.	0	5	0	,,	0	6	6
,, Lagos and Benin	0	4	6	,,	0	6	0
,, Sekondi and Cape Lopez	0	3	0	,,	0	4	0
,, Gaboon	0	2	0	,,	0	2	3
Satinwood: West Indian	0	10	0	,,	0	14	0
Rosewood Per ton	8	0	0	,,	12	0	0
Lignum Vitæ ,,	7	0	0	,,	14	0	0

STONE.*

Red Mansfield, in blocks per foot cube	£0	2	4	
Darley Dale, ditto ,,	0	2	3	
Red Corsehill, ditto ,,	0	2	4	
Closeburn Red Freestone, ditto ,,	0	2	0	
Ancaster, ditto ,,	0	1	10	
Greenshill, ditto ,,	0	1	10	
Chilmark, ditto (in truck at Nine Elms) ,,	0	1	10½	
Hard York, ditto ,,	0	2	0	
Ditto ditto 6in. sawn both sides, landings, random sizes per foot sup.	0	2	8	
Ditto ditto 3in. slab sawn two sides, random sizes ,,		1	3	

*All F.O.R. London.

Bath Stone, delivered on road waggons, Paddington Depot per foot cube	0	1	7½
Ditto, ditto, Nine Elms Depot ,,	0	1	9½
Beer Stone, delivered on rail at Seaton Station ,,	0	1	0
Ditto, delivered at Nine Elms Station ,,	0	1	6

Portland Stone, in random blocks of 20ft. average:—

	Brown Whit Bed.	White Base Bed
	Per foot cube.	
Delivered on road waggons at Paddington Depot, Nine Elms Depot, or Pimlico Wharf	£0 2 3	£0 2 1½

SLATES.

	in. in.	£	s.	d.	per 1,000 of
Blue Portmadoc	20×10	12	12	6	1,200 at r.stn
,, ,,	16× 8	6	12	6	,, ,,
Blue Bangor	20×10	13	2	6	,, ,,
,, ,,	20×12	13	17	6	,, ,,
First quality	20×10	13	0	0	,, ,,
,, ,,	20×12	13	15	0	,, ,,
,, ,,	16× 8	7	5	0	,, ,,
Eureka unfading green	20×10	15	17	6	,, ,,
,, ,,	20×12	18	7	6	,, ,,
,, ,,	18×10	13	5	0	,, ,,
,, ,,	16× 8	10	5	0	,, ,,
Permanent green	20×10	11	12	6	,, ,,
,, ,,	18×10	9	12	6	,, ,,
,, ,,	16× 8	6	12	6	,, ,,

BRICKS.

(All prices net.)

First Hard Stocks	£1	15	0	per 1,000 alongside, in	
Second Hard Stocks	1	11	0	,, ,, [river.	
Mild Stocks	1	9	0	,, ,, ,,	
Picked Stocks for Facings	2	5	0	,, livered at rly. stn.	
Flettons	1	10	0	,, ,, ,,	
Pressed Wire Cuts	1	18	0	,, ,, ,,	
Red Wire Cuts	1	14	0	,, ,, ,,	
Best Fareham Red	3	12	0	,, ,, ,,	
Best Red Pressed Ruabon Facing	5	0	0	,, ,, ,,	
Best Blue Pressed Staffordshire	3	15	0	,, ,, ,,	
Ditto Bullnose	4	0	0	,, ,, ,,	
Best Stourbridge Firebricks	3	14	0	,, ,, ,,	
2½in. Best Red Accrington Plastic Facing Bricks	4	10	6	,, Net, delivered in full truck loads in London.	

"Accrington Best Red Plastic Facing per 1,000 Bricks £2 10 0

3½" ditto Second Best Plastic ditto	2	2	6
Ditto Ordinary Second Bricks	1	11	3
Ditto Plastic Engineering Bricks	1	17	6
Sewer Arch Brick not more than 3½" in thickest part	2	0	0
3½" Chimney Bricks fit for outside work	2	6	0
3½" ditto ditto through and through	2	0	0

3½" Beaded, Ovolo and Bevel Jambs; Octagons; 2¼" and ½" radius Bullnoses; Stock patterns 3 7 6

Accrington Air Bricks, 9"×2 course deep, each	0	0	6
Ditto ditto 9"×1 course ,,	0	0	3

Accrington Camber Arches:—

3 course deep, 4½" soffit, per foot opening	0	1	3
4 ditto 4½" ditto ditto ditto	0	1	8
5 ditto 4½" ditto ditto ditto	0	2	1
6 ditto 4½" ditto ditto ditto	0	2	6
3 ditto 9" ditto ditto ditto	0	2	1
4 ditto 9" ditto ditto ditto	0	2	11
5 ditto 9" ditto ditto ditto	0	3	9
6 ditto 9" ditto ditto ditto	0	4	6

Net free on rail or free on boat at works.

GLAZED BRICKS.

HARD GLAZES, (per 1,000.)

	White, Ivory, and Salt Glazed. Best.	Buff, Cream, & Bronze. Seconds.	Other Colours.	Second Colours.
Stretchers—	£12 7 6	£10 17 6	£13 17 6	£17 17 6	£12 7 6
Headers—	11 17 6	10 7 6	13 7 6	17 7 6	11 17 6
Quoins, Bullnose, and 4½in. Flats—	15 17 6	14 17 6	17 17 6	21 7 6	15 17 6
Double Stretchers—	17 17 6	16 7 6	20 17 6	24 7 6	17 17 6
Double Headers—	14 17 6	13 7 6	17 17 6	21 7 6	14 17 6
One side and two ends, square—	18 17 6	17 7 6	21 17 6	26 7 6	18 17 6
Two sides and one end, square—	19 17 6	18 7 6	22 17 6	26 17 6	19 17 6
Splays and Squints—	17 7 6	15 17 6	21 17 6	24 17 6	17 7 6

Plinth and Hollow Bricks. Stretchers and Headers—
5d. each 4d. each 6d. each 6d. each 5d. each
Double Bullnose, Round Ends, Bullnose Stops—
5d. each 4d. each 6d. each 6d. each 5d. each
Rounded Internal Angles—
4d. each 3d. each 5d. each 5d. each 4d. each

MOULDED BRICKS.

Stretchers and Headers—
8d. each 8d. each 8d. each 8d. each 8d. each
Internal and External Angles—
1/2 each 1/2 each 1/2 each 1/2 each 1/2 each
Cill Bullnose, Stretchers and Headers—
5d. each 4d. each 6d. each 6d. each 5d. each

Majolica or Soft Glazed Stretchers and Headers Per 1,000	£22 17 6
,, Quoins and Bullnose	27 17 6
Compass bricks, circular and arch bricks of single radius £6 per 1,000 over above list for their respective kinds and colours	Not exceeding 9in. by 4½in. by 2½in.
Camber arch bricks, any kind or colour, 1s. 2d. each	

Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.

*These prices are carriage paid in full truck loads to London Stations.

	s.	d.		
Thames Sand	7	6	per yard,	delivered
Pit Sand	7	0	,,	,,
Thames Ballast	6	0	,,	,,

	s.	d.			Per ton, delivered
Best Portland Cement	36	0	to	41	0
Ground Blue Lias Lime	21	0	per ton delivered. Exclusive of charge for sacks.		

	s.	d.			Per yard, delivered
Grey Stone Lime	13	6	to	14	0

Stourbridge Fireclay in sacks 27s. 0d. per ton at railway station.

TILES.

	s.	d.	Dlvrd. at
Plain red roofing tiles	42	0	per 1000 ry. stn.
Hip and Valley tiles	3	7	per doz. ,, ,,
Broseley tiles	50	0	per 1000 ,, ,,
Ornamental tiles	52	6	,, ,, ,,
Hip and Valley tiles	4	0	per doz. ,, ,,
Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000 ,, ,,
Ornamental do.	60	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	0	,, ,, ,,
Selected "Perfecta" roofing tiles:—Plain tiles (Peake's)	46	0	per 1000 ,, ,,
Ornamental do.	48	6	,, ,, ,,
Hip tiles	3	10½	per doz. ,, ,,
Valley tiles	3	4½	,, ,, ,,
"Rosemary" brand plain tiles	48	0	per 1000 ,, ,,
Ornamental tiles	50	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	8	,, ,, ,,
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 ,, ,,
Hand-made sand-faced	45	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	6	,, ,, ,,
Hartshill" brand plain tiles, sand-faced	50	0	per 1000 ,, ,,
Pressed	47	6	,, ,, ,,
Ornamental do.	50	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
alley tiles	3	6	,, ,,

OILS.

Rapeseed, English pale, per tun		£28	15	0	to	£29	5	0
Do., brown	,, ...	26	15	0	,,	27	5	0
Cottonseed, refined	,, ...	29	0	0	,,	30	0	0
Olive, Spanish	,, ...	39	10	0	,,	40	0	0
Seal, pale	,, ...	21	0	0	,,	21	10	0
Cocoanut, Cochin	,, ...	46	0	0	,,	46	10	0
Do., Ceylon	,, ...	42	10	0	,,	43	0	0
Do., Mauritius	,, ...	42	10	0	,,	43	0	0
Palm, Lagos	,, ...	32	5	0	,,	33	5	0
Do. Nut Kernel	,, ...	35	0	0	,,	35	10	0
Oleine	,, ...	17	5	0	,,	19	5	0
Sperm	,, ...	30	0	0	,,	31	0	0
Lubricating U.S.	per gal,	0	7	0	,,	0	8	0
Petroleum refined	,, ...	0	0	6½	,,	0	0	6½
Tar, Stockholm	per barrel	1	6	0	,,	1	10	0
Do., Archangel	,, ...	0	19	6	,,	1	0	0
Linseed Oil	per gal.	0	2	2½	,,	—		
Baltic Oil	,, ...	0	2	5	,,	—		
Turpentine	,, ...	0	2	7½	,,	—		
Putty (Genuine Linseed Oil)	per cwt.	0	9	0	,,	—		
Pure Linseed Oil "Stority" Brand	,,	0	10	0	,,	—		

GLASS (IN CRATES).

	15oz.	21oz.	26oz.	32oz.
English Sheet Glass: Fourths	2d. ...	3d. ...	3½d. ...	4½d.
Thirds	2½d. ...	3½d. ...	4½d. ...	5½d.
Fluted Sheet	2½d. ...	3½d. ...	6½d. ...	7d.
Hartley's English Rolled Plate:	⅛in.	3/16in.	¼in.	
	2½d. ...	2½d. ...	3d.	
Figured Rolled and Repoussine	White.	Tinted 3½d. ...	5d.	

TRADE NOTES.

Under the direction of Mr. G. M. Tune, architect, Llangollen, Boyle's latest patent "Air pump" ventilators have been applied to P.M. church schools, Chirk.

The report of the British Uralite Company (1908) Ltd. submitting the balance-sheet and accounts to June, shows that the company has made a profit of £3,691 8s. 7d. compared with £2,881 the previous year.

CHIPS.

At the last meeting of the Liverpool Education Committee it was agreed to borrow £16,275 for the erection and furnishing of a council school in Netherfield-road, £7,896 for additions to the school in Windsor-street, and £4,150 for the purchase of a school site in Whitelodge-road, and also to build a permanent school for 1,200 children in Barlow's-lane.

Plans have been completed for the erection of an addition to the museum and art gallery at Paisley. The new building will measure 115ft. by 44ft., and will be situated to the east of the existing gallery. It will be divided into four compartments, en suite, and will be lighted from the roof. The late Mr. Peter Coats had offered to meet the cost of the new structure, and his trustees, being satisfied of his intention, are giving effect to it.

The parish church of Ramsholt, on the bank of the River Deben, East Suffolk, an aisleless edifice with a lofty round tower, was reopened last week after renovation. The walls have been replastered, a new roof has been placed over the nave, new oak doors and other woodwork provided, and the churchyard has been laid out afresh. The builder was Mr. Wright, of Walton, near Felixstowe. The works have been carried out at the cost of the Dowager Lady Guilter, whose estate agent, Mr. Peter Hay, supervised operations.

PERSONAL.

LIEUT.-COL. G. E. HOLMAN, T.D., of Messrs. Holman and Goodrham, Architects, 16 Temple Place, late Colonel Commanding 15th Batt. London County Regt., is now by the blessing of God, slowly RECOVERING from the effects of an, at times, terrible illness. To the numerous friends who have written, telegraphed, called, or sent cards, &c., Mrs. Holman begs to say that it has become impossible to answer each one separately at this stage, although it is hoped that, on complete recovery, every such message will receive its reply. Mrs. Holman expresses her grateful thanks to all.

PILKINGTON & CO.

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190 & 192, CREEK ROAD, DEPTFORD, S.E.

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POLONCEAU ASPHALTE

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ACID-RESISTING ASPHALTE.
WHITE SILICA PAVING.

Seyssel Asphalte direct from the Mines.

TELEPHONE NOS.: NEW CROSS 1102 (2 Lines).

FOR

Olivers'

Seasoned

Hardwoods,

APPLY TO—

WM. OLIVER & SONS, Ltd.,

120, Bunhill Row, London, E.C.

TENDERS.

. Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

BATTERSEA, S.W.—For the installation of heating apparatus at the Northcote-road fire station, for the London County Council :—

May, J. and F.	£141 4 3
Comyn, Ching, and Co., Ltd.	135 0 0
Deane, E., and Beal, Ltd.	130 9 0
Davies, Bennett, and Co.	125 15 6
Cannon, W. G., and Sons, Ltd.*	125 0 0

* Accepted.

BATTERSEA, S.W.—For the equipment of the gymnasium at Northcote-road fire station, for the London County Council :—

Spencer, Heath, and George, Ltd.	£138 3 10
Ayres, F. H., Ltd.	135 17 10
Bussey, G. G., and Co. (accepted)	133 13 6

BROADSTAIRS.—For making-up York-avenue, for the Broadstairs and St. Peter's Urban District Council :—

Paramors, Ltd., Margate	£294 8 0
May, J. T., Broadstairs	195 0 0
Griggs, G., Dumpton Farm	175 0 0

Surveyor's estimate, £153.

CLERKENWELL, N.—For rebuilding a part of the Clerkenwell fire-station, for the London County Council :—

Holliday and Greenwood, Ltd., Battersea	£19,477 0 0
Monk, A., Lower Edmonton	18,135 0 0
Ashby and Horner, Aldgate	17,098 0 0
Godson, G., and Sons, Kilburn-lane, W.	16,896 0 0
Bowyer, J. and C., Ltd., Upper Norwood	16,340 0 0
Grover, J., and Son, New North-road, N.	16,326 0 0
Downs, W., Walworth	16,177 0 0
Kerridge and Shaw, Cambridge*	15,242 0 0

* Accepted. (Architect's estimate, £16 518.)

DOCKFIELD, SHIPLEY.—For the erection of twenty-one houses, for the urban district council. Mr. W. H. Dawson, Manor House, Shipley, surveyor. Accepted tenders :—

Masons :—
W. Pitts and Sons, Leyburn-grove, Shipley.
Joiners —
Cryer Bros., Market-street, Shipley.
Plasterer :—
Holmes, W., Baildon.
Plumber :—
Firth, H., Teale-court, Shipley.
Slater —
Thornton, T., Otley-road, Shipley.
Painter :—
Midgley, J. R., Shipley.

DUNFERMLINE.—For the erection of a central library, for the public library committee. Mr. J. Shearer, 1, Bonnar-street, Dunfermline, architect. Accepted tenders :—

Mason and brick —
Baxter, J., Inverkeithing.
Steel :—
Fleming Bros., Glasgow.
Carpenter and joiner :—
Anderson and Henderson, Glasgow.
Glaziers —
Smith, C. R., and Co., Dunfermline.
Plumbers —
Thomson, A., and Co., Dunfermline.
Asphalte —
Bradshaw's Asphalte Co., Edinburgh and Glasgow.
Slater —
Robertson, J., Dunfermline —
Plasterers —
Wemyss, G. R., Glasgow.
Tile and Marble —
Field, W., Edinburgh.

ENFIELD.—For water tower and tank at Botany Bay, Enfield, for the Metropolitan Water Board :—

Construction of water tower :—

Wall, C., Ltd.	£1,861 16 11
Lorden, W. H., and Son, Ltd.	1,853 0 0
Coles, A. N.	1,740 8 10
Moss, W., and Sons, Ltd.	1,698 17 7
Fairnead, A., & Son (accepted)	1,624 13 6

Supply and erection of steel tank :—

Piggott, T., and Co., Ltd.	515 0 0
Thompson, J.	498 10 0
Walker, C. and W., Ltd	496 0 0
Blakeley, F., Sons and Co., Ltd.*	359 0 0

* Accepted.

FARMFIELD.—For fire protection works at the Farmfield Reformatory, for the London County Council :—

Tarring, B. B., Weybridge	£304 0 0
Wallace, R., Merstham	89 0 0
Wickens, T., Charlwood (accepted)	78 10 0

Architect's estimate, £83.

KENNINGHALL, NORFOLK.—For hot-water system with radiators, to be erected in the parish church :—
Gunton, Sons, and Dybail, Norwich (accepted).

KEYNSHAM.—For works of sewerage in Albert-road, for the urban district council :—

Thomas, J., Roch-road, Keynsham (accepted)	£247 10 0

(Lowest tender received.)

LONDON, W.C.—For fitting a shopfront at No. 61, Leather-lane, Union Buildings area, for the London County Council :—
Sims and Woods, St. Pancras £100 0 0
(Accepted.)

MANSFIELD.—For additions to Broomhill schools, for the education committee. Mr. T. P. Collinge, A.M.I.C.E., Exchange-row, Mansfield, borough surveyor. Quantities by the surveyor —
Pallance and Blythe, Mansfield £158 0 0
(Accepted.)

MANSFIELD.—For additions to Carnegie Free Library, for the Free Library Committee. Mr. T. P. Collinge, A.M.I.C.E., Exchange-row, Mansfield, borough surveyor. Quantities by the surveyor —
Greenwood, J., Mansfield £939 0 0
(Accepted.)

NEWCASTLE-ON-TYNE.—For erection of nurses' home, two villa blocks, and isolation hospital at the City Asylum. Mr. John W. Dyson, 22, Blackett-street, architect. Mr. S. Addison Smith, Emmerson Buildings, Newcastle, quantity surveyor :—

Kirk and Brown	£22,249 18 0
Ferguson, J. C.	21,980 0 0
Middlemiss Bros.	21,813 0 0
Weir, W. T.	21,500 0 0
Lowry, J. and W.	21,989 0 0
Davidson, S. F.	20,928 15 6
Lumsden, T.	20,890 9 0
Douglass, G.	20,739 13 4
Mauchlen, G. H.	20,650 0 0
Pringle, A. (accepted)	20,325 0 0

All of Newcastle.

NORWOOD PARK, S.W.—For the provision of conveniences at Norwood Park, for the London County Council :—

Bowyer, J. and C., Ltd., Upper Norwood (accepted)	£614 0 0

In lieu of tender from another firm which has gone into liquidation since acceptance of its tender at £589.

PARK PREWETT.—For the superstructure of the new asylum at Park Prewett, near Basingstoke, for the Hampshire Joint Asylums Visiting Committee. Messrs. George T. Hine and H. Carter Pegg, Westminster, architects. Quantities by Mr. L. A. Francis, 8, John-street, Adelphi, W.C. —

Pethick Bros., Ltd., Plymouth	£344,444 0 0
Leslie and Co., Ltd., Kensington-square	317,719 0 0
Perry and Co. (Bow), Ltd., Westminster	309,000 0 0
Holloway Bros., Westminster Bridge	299,780 0 0
Allen and Co., Grosvenor-road, Westminster	297,000 0 0
Thomas and Edge, Woolwich	295,857 0 0
Bowen, J., and Sons, Ltd., Birmingham	290,400 0 0
Lorden, W. H., and Sons, Ltd., Upper Tooting	290,265 0 0
Lovatt, H., Ltd., Darlington-street, Wolverhampton	289,950 0 0
Foster and Dickeee, Ltd., Rugby	289,000 0 0
Pattinson, W., and Sons, Ltd., Westminster	286,443 0 0
Mussellwhite & Son, Basingstoke	282,000 0 0
Willcock, H., and Co., Wolverhampton	281,190 0 0
Wallis, G. E., and Sons, Ltd., Maidstone	273,949 0 0
Moss, W., and Sons, Ltd., Loughborough	271,944 0 0
Blake, W. E., Ltd., Bloomsbury	267,641 0 0
Roberts, S., Ltd., Plymouth	265,512 0 0
Rowbotham, T., Birmingham	258,777 0 0

* Accepted.

RETFORD.—For rebuilding the Packet Inn, for the Worksop and Retford Brewery Co., Ltd. Mr. W. Southall, M.S.A., architect. Quantities by the architect :—

Dennis, Gill, and Son, Doncaster	£2,337 0 0
Hopkinson, T., and Son, Retford	2,325 0 0
Leverton, C. A., Worksop	2,290 0 0
Palmer, H., Retford (accepted)	2,210 0 0

Plumbing (separate) :—

Markham, C., Retford	272 7 3
Green, T., Worksop (accepted)	259 1 10

TO CORRESPONDENTS.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

It is particularly requested that all drawings and all communications respecting illustrations or literary matter, books for review, etc., should be addressed to the EDITOR of the BUILDING NEWS, Effingham House, 1, Arundel-street, Strand, W.C., and not to members of the staff by name. Delay is not infrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

. Drawings of selected competition designs, important public and private buildings, details of old and new work, and good sketches are always welcome, and for such no charge is made for insertion. Of more commonplace subjects—small churches, chapels, houses, etc.—we have usually far more sent than we can insert, but are glad to do so when space permits on mutually advantageous terms, which may be ascertained on application.

RECEIVED.—R. K. and Co., Ltd.—W. G. B.—G. E. and Son.—W. H. S. and Son.—S. W. F. and Co., Ltd.—L. K. and Sons, Ltd.—G. J. and Son, Ltd.—F. M. and Co.—B., Ltd.—S. H. T.—R. C. and C. Co., Ltd.—W. F. M.—A. H. and Son.—J. C. M., Ltd.—E. S. and B.—S. D. and Co.—E. P. A. and Son.—W. and K.—E. of S.—O. L. Co., Ltd.—F. W. M.

A. M. S.—No.

MASON.—Thanks, no.

D. T. W.—That is the proper name.

ABACUS.—The method is correct enough, but very old.

PARTNER.—The only course open seems to be arbitration.

P. C. A.—We really have no time to make tests of material.

DECORATOR.—You will find a list of works on concrete advertised on p. xvii of this week.

BUILDER.—It is imported by Messrs. Grant and Hardy, Wilmington, Hull.

J. T. T.—Write the Sun Insurance Co., Ltd., Threadneedle-street, E.C.

BOND.—The five issues published this year contain many reproductions of Albert Dürer's drawings, and can be had from our office for 1s. 10½d. post free.

W. H. WOOD.—The only thing that can be done is to get as much of the bloom off as possible with a hard brush, and then apply a solution of hydrochloric acid in the proportion of half a pint of acid to a pailful of hot water, well washing off with hot water, finally applying a coat of naphtha. With some bricks and tiles, an application of either acetic, tartaric, or citric acid is found more successful. The subject has been treated many times in these pages, and more hint may be gleaned from p. xxxv and xxi, Vol. LXXII.; p. 78, Vol. XCIX.; p. 685, Vol. C.; p. 795, Vol. CI.; and p. 202, Vol. CIII.

LIST OF COMPETITIONS OPEN.

Oct.	31—Houses and Planning, York	£100, £50, £25	F. W. Spurr, City Engineer, Guildhall, York.
Nov.	1—Royal Palace, Sofia, Bulgaria		Section d'Architecture au Ministere des Travaux Publics, Sofia.
,,	1—Law Courts, Sofia, Bulgaria		Section d'Architecture au Ministere des Travaux Publics, Sofia.
,,	18—Destructor, Schaerbeek-lez-Bruxelles		Service de l'Ingenieur, 30, Rue de la Ruche, Brussels.
,,	20—Band Pavilion, West Cliff, Folkestone (limit of cost £20,000). (Edwin T. Hall, F.R.I.B.A., 34, Bedford-square, W.C., Assessor)		A. F. Kidson, Town Clerk, Folkestone.
Dec.	20—New Offices for Board of Trade, &c., Whitehall Gardens, S.W. R. Blomfield, M.A. (Oxon), A.R.A., P.R.I.B.A. J. Belcher, R.A., and Sir Aston Webb, C.V.O., C.B., R.A., Assessors] Sketch Designs, ten will be Selected,		
1914.	with £300 Honorarium each		The Secretary, H.M. Office of Works, Storey's Gate, S.W.
Jan.	2—Manchester Royal Exchange, Additional New Buildings and Alterations. Open to all architects in U.K. Not more than 12 architects of repute have been specially invited; each of whom will receive one hundred guineas. The three selected architects will receive one hundred guineas each. Author of design placed first will be appointed. (J. S. Gibson, F.R.I.B.A., Assessor)		Rich. J. Allen, Master, Royal Exchange, Manchester.
,,	2—Departmental and Courts Buildings, Ottawa (T. E. Collcutt, J. H. G. Russell, and J. O. Marchand, Assessors). Double Competition, five unsuccessful competitors in second to receive 3,000dols. each		R. C. Desrochers, Department of Public Works, Ottawa, Ont.
Feb.	1—Municipal Technical Institute, Pool Meadow, Coventry		G. Sutton, Clerk, Education Office, 44, Bayley-lane, Coventry.
,,	15—Savings Bank, Verona (Five Assessors)	£1,200, £600	The Savings Bank, 1, Via Garibaldi, Verona.

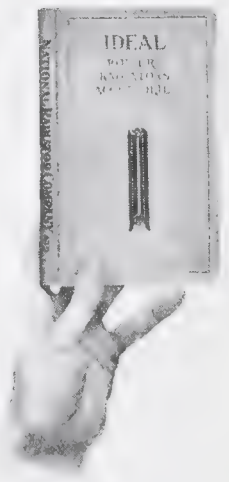
LIST OF TENDERS OPEN.

BUILDINGS.

Oct.	24—Three Cottages, Bratton Clovelly, Okehampton	Rural District Council	F. J. Worden, Archt., Town Hall, Okehampton.
,,	25—Town Hall and Technical School, Omagh	Urban District Council	J. M. Robinson, Archt., 7, Market Buildings, Londonderry.
,,	25—Two Shops, Aberkenfig	J. T. Jones	P. J. Thomas, Archt., Bridgend.
,,	25—Primary Hall and Club-rooms, Fairlight Hall, Tooting	Ragged School Union, &c.	W. E. Johnson, Archt., 11, Heathdene-road, Streatham, S.W.
,,	27—Cottages (26), Offenham	Evesham Rural District Council	E. H. Wadams, Clerk, Union Offices, Evesham.
,,	27—Drill Hall, Glastonbury	Territorial Force Association	A. J. Pictor, A.R.I.B.A., Bruton.
,,	27—Bakery, Green-lane, Stannary, Halifax		Walsh and Nicholas, Archts., 10, Harrison-road, Halifax.
,,	27—Masonry Archway, Trelewis	E. Lewis and Sons	W. Kinsman, 3, Taff-street, Pontypridd.
,,	27—Workshops and Glass Sheds, Warwick-road, Kensington	Borough Council	The Borough Engineer, Town Hall, Kensington.
,,	27—School for Defective Children, Dundee	School Board	Maclaren, Sons, and Soutar, Archts., 10, Reform-st., Dundee.
,,	27—Tresselled Approach to Bridge, Deeping St. Nicholas	Spalding Rural District Council	W. T. Smith, Sur., Pinchbeck.
,,	27—Waunllwyd School House, Alterations to, Ebbw Vale	Education Committee	H. Waters, M.S.A., Market Chambers, Ebbw Vale.
,,	27—Additional Classrooms, Branksome Heath School, Poole	Town Council	S. Newman, F.R.I.B.A., Boro' Sur., Municipal Buildings, Poole.
,,	27—Refuse Collecting Depot, Poynernook-road, Aberdeen	Town Council	W. Dyack, M.I.C.E., Burgh Sur., Aberdeen.
,,	27—House and Stables, South Stack, Holyhead		Nee and Gordon-Roberts, Bank Chambers, Holyhead.
,,	28—Lunatic Asylum, Alterations to Laundry, Jersey		The States Engineer's Office, Jersey.
,,	28—St. Richard's School, Holbeck		Simpson and Sons, Archts., Cunliffe-ter., Manningham, Bradford.
,,	28—Children's Infirmary, Alterations to, Upper Norwood, S.E.	Lambeth Guardians	J. L. Goldspink, Clerk, Brook-street, Kennington-road, S.E.
,,	28—Nine Pairs of Cottages, Fishpond-lane, Holbeach	Urban District Council	F. Burdett Ward, M.S.A., 8, South Brink, Wisbech.
,,	28—Buildings, Extension of, Warrington	Electricity and Tramways Com.	S. P. Silcock, Archt., 6, Egypt-street, Warrington.
,,	28—Three Schools, Vieille Rue de la Porte du Sas, Ghent		Bureau des Travaux, Ghent, Belgium.
,,	28—Preacher's Parlour, Wesleyan Church, Praze		Goodman and Philp, Stewards, Praze, S.O., Cornwall.
,,	28—Workhouse Infirmary, Alterations to, Birkenhead	Guardians	E. Kirby and Sons, Archts., 5, Cook-street, Liverpool.

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Ornamental Tile Work.

MACHINERY AND JOINERY.

Although there is a science of comparative anatomy, well organised, and having its professors and textbooks, there is not one of comparative building construction on similar lines. Yet, what a necessary science this is, and how valuable a work on such a subject would be to the architect! As the biologist must trace the growth of an organism from its rudimentary beginnings to its highest known stage of development, and compare the complete structure of one animal with another of a different species, so, if we wish to know all that can be known about our present modes of construction, we must acquaint ourselves with the causes which originated them, the various changes they have undergone, and the wants they were made to satisfy. In Nature, the study of the origin of living things is by some still hopelessly mixed up with, and fettered by, so-called supernatural considerations; but, fortunately, the study we now advocate is based on no higher consideration than the work of human hands guided by human ingenuity.

Of old, rooms were "wainscotted" that is, the walls were lined with wood panelling, in framing, from floor to ceiling. Why was this way of finishing a room abandoned for the modern one of covering the walls with stamped paper? Again, why is the old plan of wood panelling nowadays reverted to in some cases, as may be seen in illustrations in this journal from time to time? Old methods of construction pass away and leave us their technical terms, and these we apply to other methods having nothing in common with them. For instance, our wallpapers at 1s. 6d. or 2s. a piece have their "dadoes" and their "friezes," though these are nothing like what gave origin to these names. Habit enslaves us mentally as well as physically. It is only a mind of an original cast that can realise things were not always as they are, and that what we are accustomed to under certain conditions may be wholly inapplicable under different circumstances. We once laid an inexhaustible supply of water from a hillside to a country mansion, and it became a duty to "waste" the water in flushing w.c.'s and sinks. Yet a young plumber who had been brought up in a city asserted that we were not "practical" because we refused to adopt water-waste preventers and other appliances of a similar kind, the use of which was enforced by water corporations where water is scarce. Similarly, when we decided to have a wooden dado in an entrance hall instead of a paper one, the paperhanger said we were copying the paper one in wood, not knowing that the name "dado" was copied from the old wood panelling which the paper displaced.

Again, in the tools used by workmen in the building trades, what a change from the rudimentary flint flake, fixed with a thin strip of skin into a wooden handle, to the "general joiner" of the shops! Yet the connection between them can be traced in successive steps. Or, not to go beyond hand tools, compare an axe of the Stone period with a universal plane! Fifty years ago a good joiner had his tool-chest fitted with a complete set of "hollows and rounds" for moulding. Now one tool will do the work of fifty such planes. A circular saw running two miles a minute, reckoned on its circumference, is several steps in advance of a primitive bone saw; yet all these can be traced in a continuous and consistent series. At first sight there is little apparent connection between a field plough and a joiner's plough—the horse in the first instance making it appear that there was really no connection; but this is not so, for in colonial days in New England, New York, and Pennsylvania, the plough plane was worked by two men or a horse fastened to a staple fixed in front of the plane to pull it, one man guiding the plane. This way of ploughing was generally used when the wood was oak, and the grooves wide and deep. Even technical names are frequently derived from something not obvious at once. Sawn timber in America, for instance, is called "lumber." This name was first used in Boston in 1663, because the ships when unloaded lumbered the quay with it, there being no timber-yards at the time.

It is claimed for these early colonists that they built and worked sawmills before there was one in England, where pit sawing was a common industry. Certainly until after 1768 machine sawing was not done here, because mobs destroyed the machines, so that sawyers should not be thrown out of work. Chippendale furniture, wainscot panellings, and the cabinet-work of the leading English mansions were constructed before a sawmill was erected here. The first sawmill was of rather curious construction, the saw being held on the upward stroke by a spring pole overhead, and it was worked up and down by a beam, called "the pitman," which was attached to a crank on the mill-wheel. For two hundred years this arrangement persisted, and the capacity of a mill was limited to one upright saw, the power being either water or wind. Compare the production of a primitive mill of this kind with that of a circular saw 6ft. in diameter, and driven by an engine indicating 150H.P. Here over 50,000 square feet of 1in. yellow-pine boarding will be turned out in ten hours, wasting 25 per cent. of the wood; or if a band-saw is used, with one-half the power, the turn-out will be close on 40,000ft., with a waste of only 12 per cent. Every reader, of course, knows that with a very thick log an overhead saw must be used, and as it is next to impossible to fix it exactly over the saw running in the frame, the waste of timber will be greater than when one saw only is used. In calculating the waste of wood from any saw, the sawdust produced is not only to be taken into account: there is also the waste in planing and tying-up the stuff after, and this is much less with a band-saw than with a circular saw. The labour is also less, for the cut is more nearly a plane surface. It is obvious that frequent sharpening and gumming will reduce the diameter of a circular saw: hence the invention of inserted teeth, which preserve the diameter. From a very rude beginning—merely square pieces of steel—these have grown to be chisel-pointed, with rotary locking holders, so that worn teeth can be knocked out and new ones inserted instead in a few minutes. In this country it is not usual to saw a frozen log; but it is common enough when winter comes in the States, and, as the work is much harder, the chisel-points and swaged holders are made a gauge and a half heavier than the saw-plate, to stand the increased strain. Saw-buckling is common with frozen timber, for there is a tendency to run out of the cut, and the saw may become damaged by being strained. Returning to joiner's work and tools, it may be said that the principal hand-saws are known as "cross-cut" and "rip." What is the difference between them? Disston defines the perfection of a saw to be that which cuts the fastest and smoothest with the least exertion on the part of the workman. We need not quarrel with this definition, and we also agree with him that many good mechanics cannot file a saw properly. "Rip-saws" have from three to five and a half points to the inch, and "cross-cuts" from four to twelve points. To rip properly, the saw tooth must be filed straight across, and the saw thrust should be at an angle of about 45deg. with the wood. The "cross-cut" has no pitch. In filing each tooth, it is double-bevelled to about 45deg., this bevelling being reversed on every alternate tooth. It is generally supposed that hand-saws are 26in. long, and rip-saws 28in.; but this is not so, the names of these

saws having relation to the set of the teeth, and not to the length of blade. A panel saw is an ordinary hand-saw shorter than 26in., and with teeth set for cross-cutting. A tenon, or back, saw is used for fine bench-work and in mitre boxes, the teeth being set like those of the "cross cut."

Having noted some changes in wood



Fig. 1.

working tools, the construction of some carpenter's and joiner's work—which has varied, too—may now be dealt with. In our issue of the 3rd inst. we illustrated a "Thanet" gable as developed in flint and brickwork, and we now give a Worcestershire gable in oak and plaster on brick. Few builders are aware of the fact that over two thousand gallons of water fall as rain on one hundred square feet of horizontal surface every year in England, and that it is necessary, if a house is to be a dry residence, that provision be made for carrying off this rainfall. A few days ago we noticed a public building where there was no protection for the walls such as we suggest, and water streamed down them from the gable copings, parapets, and window-sills; in fact, the whole of

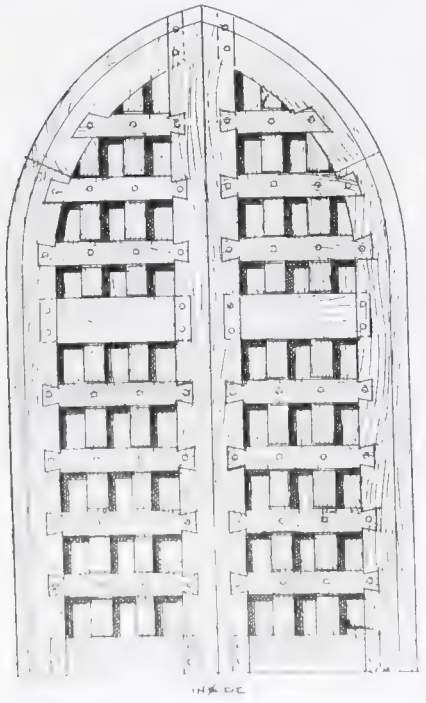


Fig. 2.

the fronts facing the south and south-west were deluged with rain. Now examine our sketch (Fig. 1), and note the precautions taken to protect the walls. Here this was absolutely necessary, much of the exposed wall face being of oak. There is in the first place a bold projecting verge to the roof; then a board, supported by brackets, forms a weathering to the first horizontal piece of framing. It throws the rain off the wall-face, to drop on the other weatherings or to the ground. Again, on the next stage of the framing there is another weather-board, supported by three brackets, and finally there is a shed-roof of tiles which projects sufficiently to cover a bay-window on the first floor. All this is old work, and it shows what pains were taken to insert weatherings and shed-roofs where possible, so as to keep the walls dry. There were several gables like this here, and every one of them was protected in the same way. It is a matter of the utmost importance that, even in stone buildings, the copings of gables or parapets, the cornices, strings, and window-sills should all be designed to throw off water from the wall face. The oak framing in

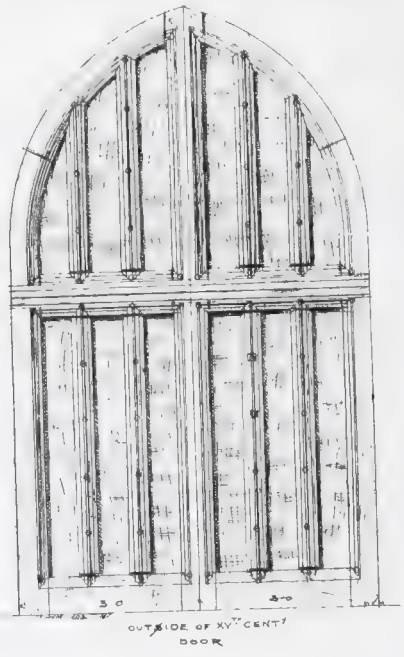
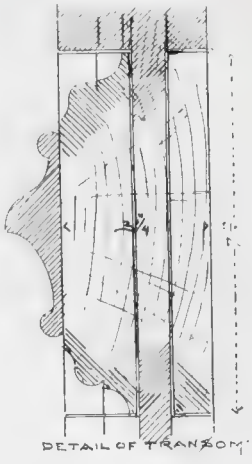


Fig. 3.

our sketch was 5in. by 5in. in section. That in a suburban house is usually of "deal" 4in. by 1in., and this probably sapwood. It is therefore sham, and it is seldom protected from driving rains by a weathering of any kind. The little shed-roof over the window, and the weather-boards and verges, in our sketch were not designed to look pretty: they were necessitated by the construction of the gables.

We shall now proceed to consider the construction of some good doors; but before doing so, it will be necessary to explain what a "batten" door was a hundred and fifty years ago; for though it has completely disappeared from modern work, its construction was to a great extent copied—unconsciously, we think—by architects of the Gothic revival. A batten door, according to an old dictionary, is one that seems to be wainscot, but is not; in other words, it looks like a framed door, but there is no framing about it. There are stiles and panels just like a modern framed and panelled door; but the panels are not let into grooves in the stiles and rails, and the whole thing is, in fact, sham. Inch-and-a-half boards are, or were, glued-up to the full size of the door as if the workmen were making a drawing-board—and on this board they nailed imitation stiles and rails, without any real framing whatever. When this sham panelling was fixed to one side of a door, it was a "single batten" door, and when both sides were decorated alike, it became a "double-batten" door. The principle involved here was that any decorative work should be planted on, and that there should be no mortising and



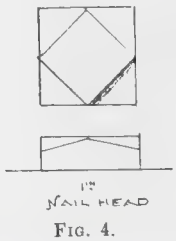


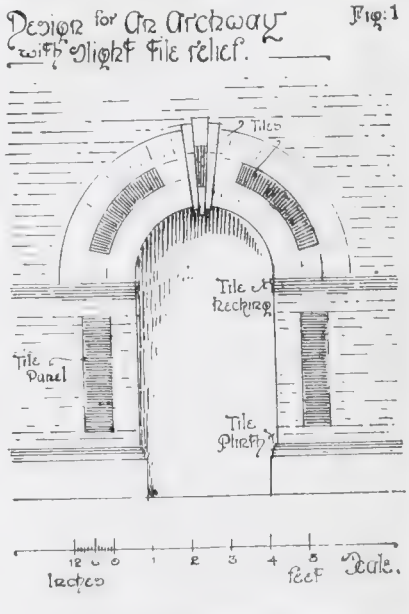
Fig. 4.

tenoning apparently to save labour. Our illustration (Fig. 2) shows a 15th century door which is practically a batten door, Fig. 3 being the back of it, and Fig. 4 the moulded transom to a larger scale.

ORNAMENTAL TILE-WORK.—III.

ARCHES.

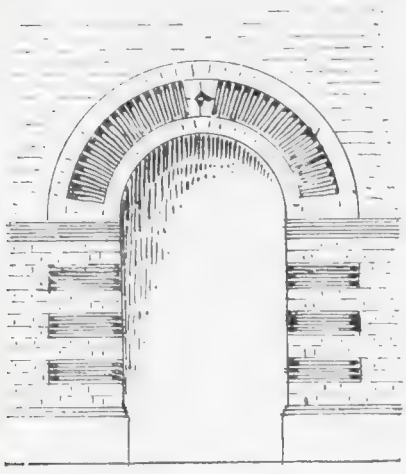
The sparing and judicious use of a little tile-relief in arch-work, whether in a main background of brick or roughcast, can be



made the means of affording quite a strong variation in materials, both simple and pleasing in result. Fig. 1 illustrates a combination with brick by the formation of segmental panels in the centre portions of the arch, between two 9in. rings of brick work. Equality of spacing can practically be obtained by the 8½in. ends of the 10½in. tile, presented towards the face. In a 9in. wall the slight projection of the tiles on the inside can be used as a key for plaster—an

occasional one having the end knocked off and left with rough edges as a further aid in this respect. It also admits of a slight pro-

Fig. 2



A Broad Tile Panel Arch, with fluted effect.

jection being allowed the tile panel on face, if desired, thus affording a little more relief and prominence. The projection of alternate tiles in the latter manner, producing a rusticated effect, affords another pleasing

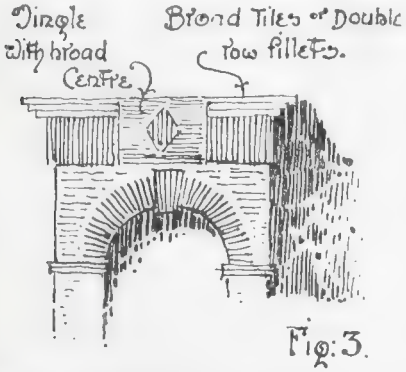
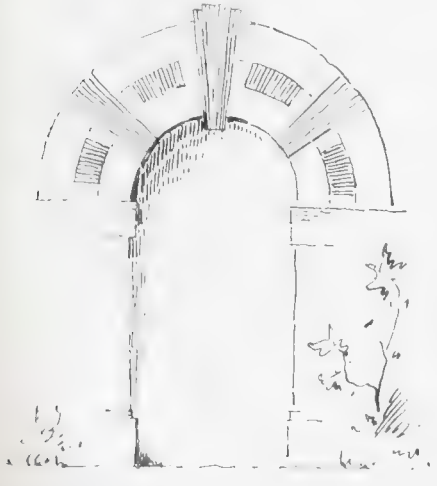


Fig. 3.

method of dealing with arch work of this character. The centre of the key blocks can also be readily picked out with a little tile-work in a similar manner, as shown. The same segmental system of tile panelling, but within 4½in. rings of brickwork, is illustrated



Divided Arch, with Small Panels. Fig. 4.

by the succeeding figure, No. 2. The tile is here shown with the greatest length towards the face. If occurring in 9in. work, the 8¾in. depth given is very little difference to that of the brickwork, and can be readily filled with plaster. Another method is to recess the whole tile panel, on face, the odd quarter of an inch. Although slight, it is quite enough to afford further variation without too coarse an effect. The customary raised or recessed effects of either brick- or tile-work are, as a rule, often too much, thus producing a coarse feeling in design. Very little projection or recession is quite sufficient, with such ornament, in obtaining the



Fig. 5.

requisite break of light and shade. The latter type of tile panel would also look well with alternate tiles sunk as shown by the illustration. The same system applied to the broad tile quoins of an archway or a vertical panel is productive of quite a large amount of simple decoration, the feeling produced being very similar to that of Doric fluting, when judiciously used. Simple tile-work of this nature can be readily used at little more cost than plain brickwork; at the same time, it affords a large amount of relief from the monotony produced by plain brick alone. Its value as an harmonious adjunct of the same material—differing merely in shape, form, or low tones of colour—cannot be over-estimated. It is this principle of what might be termed a species of half and quarter tone

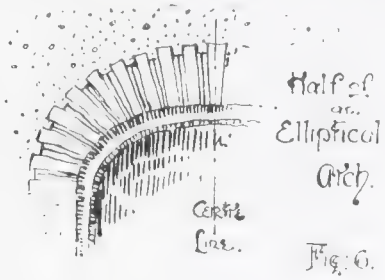


Fig. 6.

relief in ornament, as compared with brick, which makes the tile such a delightful and valuable accessory. It is capable of so much slightly graded variation, when carefully used, without possessing any of those stronger contrasts too often coarse in effect. Such as produced by brick and stone, etc., or even brick, when the latter is too violently contrasted in lurid colours. These facilities, carefully considered, admit the production of architectural work in modulated tones of harmony which have certainly not been sufficiently appreciated by the generality of practitioners.

Fig. 3 illustrates a simple type of arch,

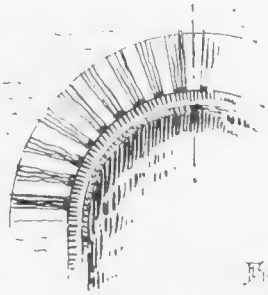


Fig. 7.

with a frieze and headpiece of slight projection, a greater variety of effect and relief being obtained by the simple method of reversion of the tiles, apart from that obtained by slight projection as well. These are points worthy of special note and adoption, on other lines of development, in tile decoration. Such work is particularly attractive, forming simple, but nevertheless extremely pleasing, features, set either in brick or roughcast. Deep brick arches, divided up but through by key blocks of tile, the intermediate spaces containing smaller tile panels, also affords one of the best methods of relief in this section, such as illustrated by Fig. 4.

Another method for simple flat arch-



A Square Bay in Brick.

Fig. 8.

consists of introducing a single tile between each brick, as illustrated by Fig. 5. A further extension of this principle is shown by the succeeding illustration, No. 6. A couple of tile-ends appear on face, either 6½in. or 8¾in., thus breaking in from the 9in. brick, producing a rusticated appearance. Used also in clusters of three or four tiles about a brick width, as shown by Fig. 7, with slightly serrated inside edge, it produces another design. Fig. 8 illustrates a little

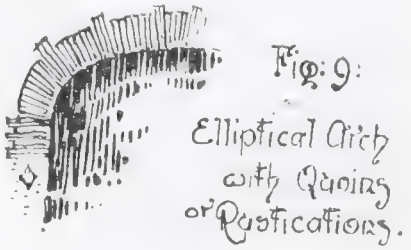


Fig. 9: Elliptical Arch with Quoins or Rusticatings.

simple tile relief of the latter description by an elevation as applied to a small bay in conjunction with ornamental brickwork. Some of the most effective results, however, are obtained by arch-construction carried out entirely in tile-work, set either in brick-work or roughcast. The form illustrated by Fig. 9, with slight occasional quoins or rusticatings, forms a simple but plain variation. Herring-bone arches carried round in continuous line also afford a further species of relief in this material. A better method



Sketch for Entrance or Porch. Fig. 10.

and relief of this character is shown by illustration No. 10, diamond-shaped key and impost blocks being introduced by reversed tiling.

Tile relief of the nature generally illustrated here would be particularly adaptable

to rough concrete-block work, which could in many instances be covered with roughcast. A great deal of the tile work as illustrated could also be set in cement, prepared in blocks, previous to transmission to the site; all ready for quickly working up and incorporating with the concrete blocks. As a matter of fact, so used it would be particularly adaptable to concrete sectional work, and might very well solve the problem for a good deal of decoration or relief in this medium also. The latter is one which will without doubt be largely utilised for many classes of work in future. It certainly requires, at the same time, some consideration for a system of simple relief and ornament which cannot be obtained in the natural material itself to a fine scale.

W. G. Kerry, Architect.

(To be continued.)

LONDON COUNTY COUNCIL.

At Tuesday's meeting of the County Council the General Purposes Committee recommended that authority be sought in the next session of Parliament in the Council's General Powers Bill, to enable Metropolitan borough councils to include in any estimate of the expenses of the cost of paving, sewering, repairing, and flagging works carried out in connection with new streets a commission not exceeding £5 per cent. in addition to the estimated actual cost. It was further proposed that powers be sought to enable the Council to charge part of the cost of acquiring insanitary property for the purpose of a new school site against the Dwelling House Improvement Fund, and to enable a Metropolitan borough council to contribute towards the cost.

The recommendation of the Improvements Committee that the Government be requested to undertake the promotion of a Bill seeking Parliamentary authority for the completion of the Mall to Charing Cross improvement, in accordance with the scheme approved by the Council, was agreed to, Mr. Dawes, M.P., withdrawing a hostile amendment.

The Highways Committee reported that expenditure had already been sanctioned on capital account not exceeding £18,600 in respect of the trackwork required in connection with the construction, on the underground conduit system of electric traction, of the authorised tramways in High-street, Wandsworth, between Putney Bridge-road and York-road. The new bridge over the Wandle, on the route, is being executed under the direction of the Improvements Committee by Messrs. John Mowlem and Co., Ltd., and is now well advanced. The Committee recommended that the short length of conduit track work over the Wandle bridge be laid forthwith, in order to avoid disturbing the new carriageway paving which is about to be laid down. As a result of negotiation, Messrs. John Mowlem and Co., Ltd., who, in addition to the work of reconstructing and widening the bridge in question, are at present executing tramway work for the Council in Bromley-road, are prepared to construct the tramways on the bridge, and between the bridge and a point near Garratt-lane (about 100 yards in length) on the basis of an additional charge of 15 per cent. on the contract rates for the Bromley-road tramway works. They recommended that this offer, amounting to about £1,150, be accepted.

The Improvements Committee recommended that the widening of Tooting Bec road between Bromley-road and Elmbourne-road, begun in 1911, be completed by the acquirement of further property, at a cost of £3,085. The entire widening will increase the width of this main thoroughfare for 550ft. from 40ft. to 54ft. They also recommended a continuation of the widening of Wardour-street, Oxford-street, which has already cost £28,100, at a further outlay of £2,700, the object being to make this street of an ultimate uniform width of 36ft. It was reported that the widening of Church-street, Kensington, has been completed at a cost of about £66,300, and the Kensington Borough Council was authorised to proceed with the works of laying pipes and paving.

The Improvements Committee reported that there was let in July last to the Kingsway and Central Estates Company, on lease for ninety-nine years, at an annual rent of £2,900, a site on the east side of Kingsway, at its junction with Aldwych. Negotiations are also proceeding for the letting of the adjoining site. The Committee has had before them elevations submitted by the architects to the intending lessees of the buildings proposed to be erected on the sites in question, and on the adjoining plot extending eastward to Houghton-street. In view of the importance of securing that the buildings to be erected on these sites shall be of such a character as to be worthy of the exceptional position which they will occupy, and having regard to the important bearing which the design of the building must necessarily have on the treatment of the building to be erected on the opposite corner of Kingsway and Aldwych, they recommended the employment of Sir Ernest George, A.R.A., as consulting architect at a fee of £700.

The Committee recommended the approval of the drawings submitted for buildings proposed to be erected on a site between Kingsway and Kean-street, with elevation in Portland stone; of buildings to be erected in Mare-street, Hackney (elevations in red brick and Portland stone or Carraraware), and Queen's-road, Peckham (elevations in artificial stone and red brick).

The Parks Committee recommended the extension of Kilburn Grange by one additional acre, at a cost of £4,350. The Finance Committee, however, reporting on the proposal, stated that, having regard to the high cost of the land in question, and the relatively small addition to the park, the Council would not be justified on financial grounds in agreeing to the proposal.

The Council have approached the City Corporation on the question of a further extension of trams in the City. The Council desire to proceed with three schemes: (1) To continue the line from Farringdon-road along Farringdon-street to Ludgate Circus; (2) to continue the Whitechapel route as far as Aldgate, outside the Metropolitan Railway Station; (3) to run a branch line down Mansell-street and proceed by way of Tower Hill to Mark-lane Station. The committee of the Corporation is willing to recommend the first scheme to the Court of Common Council if the London County Council will make a widening between Charles-street and Charterhouse-street. As to schemes 2 and 3 the Corporation would consent if the hay market were abolished and the Council withdrew the portion from the Tower Bridge Approach to Mark-lane. Negotiations are also proceeding between the London County Council and the Stepney Borough Council for the removal of the existing tramway terminus at Whitechapel High-street, Aldgate, and the extension of the tramways to Mark lane by way of Mansell-street, which will need to be further widened.

THE EVOLUTION OF ARCHITECTURAL ORNAMENT.*

This is a reprint of a series of articles published in the New York *Architectural Record*, to which an appendix is added consisting of a chapter on some Alexandrian capitals which the author sketched in 1911. There are no less than 235 illustrations, many quite new, and all selected with intelligent reference to the subject-matter.

Mr. Middleton has adopted a classification by means of which each of the principal types of ornament may be traced in sequence. This is a workmanlike and satisfactory method—far better, in our opinion, than the not unusual attempts to treat the subject historically, period by period, or country by country, taking one phase or style at a time, and dealing simultaneously with all the various types of ornament used during the same epoch. It is easy, perhaps, for the trained architect to follow the last method, but, as Mr. Middleton says, ornament is no mere matter of concern to architects alone, but enters the province of all who work in the field of decorative design, whether on buildings, or in jewellery, or china, or dress, or glass. All such will, we are sure, prefer the classification Mr. Middleton has chosen.

Mr. Middleton begins with ornament which has a foliage basis, dealing in turn with the anthemium and the acanthus, and so on with all the forms of the Classic and the Gothic schools that were derived from foliage, though not unseldom having no apparent connection with it now. Then we go on to ornament with a linear basis, and then to that based on animal forms, minor enrichments being left to the last.

The labour spent on the volume must have been considerable, even with the assistance of several collaborators, whose services the author acknowledges. Of its value there is no doubt. Others might have given as much work and time to the task, but few would have dealt with so plentiful a store of material with such lucidity. That charm, however, and the refreshing absence of fantastic theories and purposeless digressions, is only what we have all come to expect, thanks to its characterisation, of all Mr. Middleton's contributions to the current literature of architecture.

* The Evolution of Architectural Ornament. By G. A. T. Middleton, A.R.I.B.A., M.S.A. London: Francis Griffiths, 34, Maiden lane, W.C.

BERMUDA CATHEDRAL.

The main fabric of the cathedral, Hamilton, Bermuda, which was designed by Edinburgh architects, and largely built by Edinburgh workmen, is now nearly finished, and plans of the subsidiary buildings, including vestries and cloisters, are in course of preparation. The building of this cathedral was brought about by a fire in 1884, which completely destroyed a church which preceded it on the same site, known as Trinity Church.

The work was entrusted to Messrs. Hay and Henderson, architects, Edinburgh, who prepared designs for a cruciform church of an Early English type. When the church was designed it was not known that it was to be the cathedral of the diocese, and the arrangement of planning was consequently not on a cathedral scale. The nave was finished and dedicated in 1894, and on the death in 1906 of Mr. Henderson, the surviving partner of the architects' firm, the completion of the work was entrusted to Mr. H. O. Tarbolton, F.R.I.B.A., of Edinburgh. It was then decided to raise the church to the distinction of a cathedral. With this in view, the planning of the eastern portion of the edifice was considerably changed, and Mr. Tarbolton was invited to visit Bermuda, and arrange for the necessary remodelling of the plans, and to give his advice regarding the completion of the work and the decoration of the interior of the building. The length of the cathedral from east to west is nearly 200ft., and across the transepts about 90ft. The tower is 143ft. high, and 32ft. square. Both the external and internal facework of the building are of native limestone, built in courses averaging 2ft. long by 6in. high. This stone, which constitutes the geological formation of the islands, is a natural grey coral, which cuts easily when first quarried, but hardens when exposed to the weather. The dressed stone and main piers throughout the structure are from quarries in Nova Scotia. The stone used for the interior moulded work has been quarried in Caen, Normandy, with the addition of Indiana limestone, which harmonises with the Caen stone, but for positions of special exposure is more suitable. Numerous monetary gifts to the cathedral have enabled portions of the oak screens, choir-stalls, and sanctuary fittings to be provided, and the marble work in the chancel and chancel aisles has been executed and laid. The high altar is of bronze, with a marble reredos over, containing a bas-relief in Carrara representing the Ascension, supported by niches containing statues of the Disciples. About £80,000 has already been expended over the cathedral, and a considerable sum is still necessary to complete it and provide for further internal decoration.

The Union Jack Clubhouse opposite Waterloo Station, S.E., is about to be further enlarged from plans by Mr. Walter Cave, F.R.I.B.A.



IMPERIAL HOUSE, KINGSWAY, CONTROLLED BY THE LAW LAND CO., LTD.

Messrs. Trehearn and Norman, Architects.

IMPERIAL HOUSE, KINGSWAY.

This building, which is one of the many eligible premises controlled by the Law Land Company, Ltd., consists of a basement, ground, and eight floors above, especially designed for showrooms and offices. The whole of the space of each floor, which on the lower part of the building covers over 7,000 square feet, is available for letting without the obstruction of columns and piers which often hamper a tenant in setting out his offices. The building is Portland-stone faced, and was designed by Messrs. Trehearn and Norman, of Sardinia House, Kingsway, and erected by Messrs. King and Arnell, of West End-lane, Hampstead. The situation, which is midway between Kemble-street and Aldwych, on the west side of the street, is certainly the best in Kingsway, and the advantage of the building having its back on to Kean-street will be readily appreciated when taking into consideration the advantages of a through light, and, moreover, in the case of the ground floor, a back entrance can be

obtained. The entrance hall is an exceptionally fine one, and leads directly on to the main staircase and passenger lifts, of which there are two, both driven by electricity, and running at a speed of over 320ft. per minute. The light and air wells are exceptionally large, and the maximum amount of light is obtained by the use of white glazed bricks. Lavatory accommodation has been carefully considered, and amply provided for. The building is heated by a system of hot-water radiators, with a separate system for the lavatories, so that hot water is obtainable both winter and summer. The whole of the constructional steelwork has been made and fixed by Lindsay's Paddington Ironworks, Ltd., North Wharf, Paddington, W. The lifts are by Messrs. Smith, Major, and Stevens, Ltd., of Battersea, S.W. All plans and quotations can be obtained either at the building itself, or from the office of the Law Land Company, Ltd., at 30, Norfolk-street, Strand.

THE ARCHITECTURAL ASSOCIATION.

The sixty-sixth annual meeting of the Architectural Association was held on Monday evening at the headquarters, 18, Tufton-street, Westminster. The new President, Mr. W. Curtis Green, F.R.I.B.A., occupied the chair and wore the beautiful silver badge and blue riband presented at the close of the last session by his predecessor in office, Mr. Gerald C. Horsley, and executed by Professor Lanteri.

Forty nominations for membership having been read, Messrs. O. H. Collins, J. A. Johns, and W. H. Whitehead were elected as members. On the motion of the President, and amid loud applause, Mr. Reginald Blomfield, A.R.A., P.R.I.B.A., was reinstated in membership. A vote of condolence with the widow and family of the late Mr. Ernest A. Runtz, for more than a quarter of a century a member of the Association, and an active worker in the old Lyric Club, was proposed by the President and agreed to in silence.

THE DISTRIBUTION OF PRIZES AND CERTIFICATES

given in the Day and Evening Schools during the past session was then made by the President, in accordance with the following list:—

D. E. Cruikshank—Bamster Fletcher Bursary.
A. S. G. Butler—A.A. Travelling Studentship.
W. W. Locke—Andrew Oliver Prize (second place A.A. Travelling Studentship).
R. M. Piggott (£30) and R. C. Clark (£20) Saxon Snell Scholarship.
Piet De Jong—Herbert Batsford Prize.
W. H. Lloyd—History Prize and Freehand Prize, both first year Day School.
F. P. M. Woodhouse—Construction Prize, first year Day School.
I. A. Eschawzier—Studio Prize, first year Day School.
N. F. C. Day—Special Vacation Work Prize given by Mr. H. P. G. Maule, first year Day School.
J. Burford—Travelling Studentship, second year Day School and A.A. Two Years' Certificate.
A. Stanhope Forbes—Special Prize given by Mr. H. P. G. Maule in connection with Travelling Studentship, and A.A. Two Years' Certificate.
M. T. Waterhouse—End of session study, second year Day School, Special Prize given by Mr. H. P. G. Maule, and A.A. Two Years' Certificate.
R. S. Wallace—Travelling Studentship, third year, Day School, and Second Prize Test Subject, third year Day School.
H. J. H. Dickson—Winner of Jarvis Scholarship, value £75, Second Prize, third year Day School, Travelling Studentship Prize; Materials Lecture and Prize, Hygiene Lectures.
E. Hall Philp—First Prize, Test Subject, third year Day School, and Prize, Internal Construction.
H. J. Tebbutt—Prize for Greatest Progress, third year Day School; Prize, Advanced Construction.
F. A. Addey—Second Prize for Progress, third year Day School.
E. A. D. Tanner—First Prize, Evening School; Prize, Renaissance Architecture.
[illegible] Second Prize, first year Evening School; Prize, Elementary Physics; Prize, Elementary Construction; Prize, Greek and Roman Architecture.
H. V. S. Meek—Scholarship, second year Evening School, Free Pass to third year; Prize, Mediæval Architecture.
D. J. Gordon—Travelling Studentship, fourth year Evening School, Certificate Board of Architectural Education, four years.
J. B. M. Walch—First prize, fourth year Evening School.
E. George—Prize, Mediæval Architecture, A.A. Two Years' Certificate.
A. S. Barnett—Prize, Steel Construction.
P. Butt, C. J. Brooks, J. H. Jacob, A. S. Farmer, D. C. L. Derry, H. F. Gossling, and M. D. N. Koch—A.A. Two Years' Certificate.
H. D. Archer, A. B. Lloyd Roberts, H. Fellowes Prynne, W. Hacker, and F. W. Dorsett—Board of Architectural Education Certificate, four years.

Mr. Curtis Green then delivered

THE PRESIDENTIAL ADDRESS.

Since the founding of the Architectural Association in 1847 it has been, he remarked, the custom to give up the first evening of the session to talk about ourselves and our interests, about the work that is done and that which is yet to do. The handing on of the traditions of the Association undiminished and, if possible, enriched, is a trust in which we are all concerned; they are part of the creed of a great body of English-speaking architects.

CHANGES IN THE COUNCIL.

By changes in the House List the Council loses the services of Messrs. Tapper, Brewer, and Bolton, who have given generously of their ability and time to the affairs of the Architectural Association. Mr. Brewer continues on the editorial staff of the "Sketch Book," and also remains on the School Committee. The Council is strengthened by the return of Mr. F. D. Clapham and by the addition of Mr. Slater and Mr. Mackenzie. Mr. Slater has succeeded Mr. Cart de Lafontaine in the arduous labour of editing the Journal, and Mr. Cart de Lafontaine becomes an ordinary member of Council.

A LESSENED MEMBERSHIP.

Our membership shows a decline of fifty during the year. We have lost by death a number of distinguished members. To those losses we must add the annual drain—unusually large this year—of those who fall out by the way, either through ill-fortune or because they have found more congenial outlets for their activities. We have enrolled sixty-six new members, and our membership is now 1,556. Any calling has its waves of popularity. It is noteworthy that architecture is no longer the easy means of livelihood it was for a time, and that as the standard of education goes up the number of recruits to the ranks goes down and their quality improves. Parents are now suspicious of the tag, "And if your son of dulness you suspect, a parson make him or an architect." And as the nature of the calling is understood the winnowing process will be more thorough.

FINANCE.

As regards finance the position of our school in this respect is very different from that of others. Other recognised schools of architecture have behind them the resources of a University, of a Government Department, a county council, or a wealthy corporation like the Royal Academy. The Association has obligations to its members, wider obligations to maintain its School of Architecture at the highest pitch of efficiency, and has obligations to those who man the ship and are dependent upon it for a livelihood. Its resources are practically limited to the annual guinea and half-guinea that its members pay as their subscription, and this is absorbed by general working expenses. The school is not profitable, so that the margin of expenditure over income is far smaller than it ought to be. We are able to pay our way by careful perhaps too careful—stewardship; but we are unduly hampered in many directions in the school by lack of funds. We have the cordial support of our parent, the Royal Institute of British Architects, in carrying out their programme of education, and we feel confident that they will eventually see their way to making an adequate grant towards that work. We are allied by mutual concessions with the Royal Academy Architectural School, and are the reservoir from which the school draws its talent and its prize-winners. The Association provides the material, the environment, and the necessary freedom for natural development. It has built up the most considerable school in the country, and it is of inestimable value to the profession as the only representative school that is managed in the interests of architecture by architects, without outside control. Endowed institutions in London have tacked on to their other educational facilities schools and classes in architecture; but with them architectural education is a matter of pure secondary importance. It has been left to architects to build up for themselves the most considerable school in the country. They have seen that, within certain limits, and with the fatherly guidance of the leaders of the profession, a great school of architecture can only be run by men who are still students themselves. The allocation of part of the Henry Jarvis Bequest to the school by the trustees, at the recommendation of the Royal Institute of British Architects, and the legacy of the late Mr. William Glover, are events that we gratefully record this year. We have made several minor improvements to our premises during the session out of the general funds.

AN ENLARGEMENT OF PREMISES FORESHADOWED.

The Council has for two years been giving consideration to the question of premises, which will become acute with the expiration of part of our lease in two or three years' time. This will give us the opportunity to put our house in order and extend and rearrange the space, which is now insufficient and inconvenient, whether we consider it for school purposes or for our own meetings. The Council has invited Mr. H. Austen Hall, who has already done so much for the Architectural Association, to prepare a scheme for extending and altering the premises. We do not think the present time is one in which we can begin a campaign for this purpose; but our policy is to know what we want and to be ready to put forward a definite proposition when the time is ripe. The work that is done here will sooner or later receive the recognition it deserves.

THE SCHOOL OF ARCHITECTURE.

There are now sixty-four students in the Day School. The two events of the school years have been the addition of a Third Year's Course in the Day School, and the retirement of Mr. Maule from the headmastership, a position he has filled with so much advantage to the school for the last ten years. The Council are happy in having secured Mr. Robert Atkinson to take his place, and believe that the work which Mr. Maule has laboured at so strenuously and with such unselfish devotion will be carried forward by Mr. Atkinson one step further towards the end we have in view. Mr. Atkinson has begun under the happiest auguries. The Third Year Course, for which he has been responsible from the first, has been an unqualified success; beginning with twelve students, it now numbers twenty-three, two of last year's men having decided to stay on for another year before passing on to the R.A. Schools and to office experience. I feel sure that as the work done in the third year becomes more known men will join it in increasing numbers. Mr. Atkinson is fortunate in his staff—in Mr. Varndell, from whose work here we are learning by experience to expect great things; in Mr. Alan Potter, Master of the First and Second Years; in Mr. R. W. Cable, who pilots the Third Year's men; and in Mr. Buyers Scott, in charge of the Evening School. I do not suppose the history lectures have ever been in better hands than those of Mr. Theodore Fyfe, Mr. W. H. Ward, and Mr. Aymer Vallance. The Council attach great importance to the water-colour class, under Mr. H. F. Waring's guidance; having decided that it was advisable to limit the number of those attending it, they joined almost to a man, so that it was last year impossible for anyone else to take advantage of it. Another event in the history of the School must be recorded—the appointment of a Registrar. Our Registrar, Mr. Scott Holmes, has had to create this position—no easy task for a layman unacquainted with a school of architecture. It is early days for us to reap the benefit of Mr. Scott Holmes's labours; we are beginning to do so, and I feel sure that the Registrar will become indispensable to the Association and to the cause of architectural education. Those who, in the service of art are giving the best of themselves to education are, in spite of the discouragement through which they can only just "slog on," doing a great work; they are laying a foundation for others, and perhaps for themselves, on which achievement may securely rest. We wish all success to these gentlemen, and particularly to Mr. Atkinson in his new duties. They

have, and we must let them feel that they have, every member of the Association backing them up.

The exhibitions have been very successful, particularly the exhibition of French drawings, held in May. It is possible that the Association will pay a return visit to Paris next year on the occasion of an exhibition of English drawings which it is proposed to hold there.

The library has been more used this session. Mr. W. G. Newton, the hon. librarian, has initiated a change whereby the larger and more valuable books now in the reference library are to be moved to the bookcases in the upper gallery, where there will be a large table and a good light. Acting upon Mr. Atkinson's advice, the Council is spending considerable sums on books for the use of students of the School.

VISITS AND EXCURSIONS.

The Spring Visits Committee arranged a number of interesting visits to new buildings, finished or in course of construction. These visits keep us acquainted with one another's ideas and methods, and are healthy occasions for all concerned. The annual excursion in August made their headquarters in Rouen. A foreign programme is a pleasant variety every few years; I am afraid it involves much more work for the indefatigable hon. secretaries, Mr. Talbot Brown and Mr. Hennings, to whose assistance Mr. Clapham has now come as London hon. secretary. To those like myself who were present it is a pleasant one to look back upon. The younger men, I am afraid, regard the excursion as little more than an expensive week's travel, and do not come in any number; if more of them put this to the test of experience they would find there are compensations even for comfortable quarters and a well-arranged programme. Just as it is well to play games with those more skilful than oneself, so it is better to visit great buildings with those who bring a trained and mature mind to bear on them.

INSURANCE.

Early in the session the Architects' and Surveyors' Approved Society was founded. Considerable financial support was afforded by the various institutions concerned in the formation of the Society, the Association making a donation of £20, and, in addition to this, granting the new Society the free use of an office in these premises. The Council understands that the Society, which has a committee of its own of representatives of the two professions concerned, is working very successfully, having a membership of upwards of 1,800.

I have already spoken at some length of our affairs, which cover a wide field; I have not touched some of the most interesting sections, such as the Camera, Sketch, and Debate Club, where men are encouraged to give expression to their views in debate, unhampered by the ordeal of seeing their utterances in print. The club does much to stimulate students with their cameras and sketch-books. Then there is the Athletic Club, with all its branches, which looks after the holiday and sporting side of our existence—one of the utmost importance, for the work that we can do is dependent upon proper recreation. If future legislation is to encroach upon our personal liberty, I should like to see it take the form of prohibition of all work on Saturdays, and enforced attendance at the cricket or football field, unless on exeat for sketching and measuring. (Prolonged applause from the students at the back of the meeting hall.) Architects are nothing if they are not good sportsmen; if we sit down and consider it, we are conscious of neglected personal talent which only needs the right atmosphere to develop. The right atmosphere can be found on our club ground at Elstree. The club has secured delightful grounds of its own, and built a spacious pavilion; from what I have seen of it it is admirably managed by the committee. It is in a very flourishing condition, save only that it is in urgent need of handsome donations to pay off the debt on the ground, amounting to several hundred pounds.

THE ESSENTIAL QUALITIES OF THE STUDENT.

I might now follow, as a shadow, Past-Presidents of the Association, and discourse on what an architect should be, what he should know, how the technical knowledge should be gained, and how the artistic qualities necessary to the formation of an architect may be developed. I shall not attempt this; the modern student chooses his own school and goes to the fountain-head of the school for knowledge. Moreover the facts he has to master may be read in the syllabus of the Board of Architectural Education. This syllabus embodies the wisdom of a long line of distinguished men, and deserves the closest attention; it is a bare statement of the qualifications necessary for the practice of architecture, and is silent on the qualities necessary in the man. It supplies the details, but not the background. It is of this background that I propose to speak, bearing in mind that we are living in the 20th century—a time of apparent contradictions and unsolved problems. Nowadays equipment is only a matter of proper guidance and of continuous hard work, and, in the words of Pericles, "Our trust is not in the devices of material equipment, but in our good spirits for battle." A limpet-like tenacity to hold on through disillusion and failure, the courage to face the facts and to use them, combined with that humility of mind which wins the confidences of the Mistress Art, are necessary to those whose destiny it is to serve her, for architecture is not merely an exacting mistress, she is elusive, rejecting sometimes even those having on the wedding garment. "Many knock at this door and ask for her and turn away in despair," and this, perhaps, from not realising that if we are to vitalise tradition it must be for new uses and by bringing new gifts. The goal lies ahead, not behind.

THE WEAKNESS OF ARCHITECTURAL REVIVALS.

Outside our own ranks there is little superficial encouragement. The Indian poet might have had architecture in his mind when he wrote: "It seems that there is a break in the chain of light, and that one of the stars has been lost." And, after describing the search for that which, through neglect, was lost to sight, he continues, "Only in the deepest silence of night the stars smile and whisper among themselves. Vain is this seeking! Unbroken perfection is over all." That is no bad suggestion of the position following after the fall of the first of the arts from her pre-eminence. It is noteworthy that architecture touched the lowest point during the most remarkable century in history. In the 19th century channels of thought and methods of work changed fundamentally. It became the turn of science and invention to advance the race. The 19th century moved to a new impulse—scientific, not artistic; the scientific mind necessarily regards tradition with suspicion, yet, serene as are the heights of science, she cannot supplant the arts in their ultimate supremacy over the mind. Mr. Thompson, the scientist, writes: "Routine skill, scientific skill, and artistic skill form an ascending series of human power and activity. For true art, in whatever occupation it may be developed, is the final and highest expression of our whole character, powers, and personality—whether the artist be a handicraftsman, a headcraftsman, or both." That is a generous admission from science, and one that, I think, would not have been made sixty years ago.

With every considerable change, however beneficent it may ultimately be, there is always an evil time to live down; such a time of change we are passing through, and the sacrifices involved sometimes appal us. During this time there have always been men in perfect correspondence with architecture, though their output has been small compared to what it might have been had they lived at a time secure in the possession of a tradition and assured of a constant demand and constant appreciation. It is early yet to see clearly what the 19th century has done for art; it may be, in the words of Walter Pater, writing of the 15th century in Italy: "By hastening the decline of art by withdrawing interest from it, and yet keeping unbroken the thread of its traditions, it had suffered the human mind to repose itself, that when day came it might awake, with eyes refreshed, to those ancient, idea forms."

The new industrial system, the most far-reaching product of the last century, has yet to make good, if I may use an Americanism. It replaced wherever possible the delicate skill of the human hand by inhuman machinery, and the best craftsmen of the day turned all their great ability to perfecting these new machines, to the apparent undoing of the older arts; in the 15th century came the books, in the 19th the machine. Both were revolutionary, both have come to stop, and have to be hitched to the star of architecture. We do not give way to pessimism, or undervalue the opportunities that are ours. We are confident in the certainty of the ultimate supremacy of art.

In the revivals of the last century there were both a necessity and a weakness—the necessity of satisfying a need and of expressing new thought in forms to which the eye was by happy association accustomed, and the weakness inherent in human nature of looking backward instead of forward. In a country with a history like that of Europe the tendency is to live on the past, first on one phase of it and then on another. The changes were at such a pace that even culture tended to regard all things and principles of art as inconstant modes or fashions. All that is of the past. We are recovering our balance; we have learned that revivals are merely stop-gaps; that a thing can only be done once, and that we cannot recreate the past. That curious haunting sense of magic surrounds and is inseparable from the life as well as the art of the Greeks, the Mediæval craftsmen, and the masters of the Renaissance. Those who still put their hope in revivals are not in love with architecture, but with their own idea of what architecture ought to be. "When the half-gods go the gods arrive," for it is our experience that there is always something better than we saw at first.

We are hoping for the time when we shall express ourselves in a common language, though it is possible we attach too much importance to this; and, in the meantime, it is well to recollect that other centuries have in periods of transition expressed themselves without the slightest cohesion of style. When the time was ripe, these experiments gave place to a common outlet congenial to it. Who is to say that the world is not the richer for the experiments of transition? We have for some time been seeking a common outlet by turning our attention to

THE SOURCES OF OUR INHERITANCE.

Anatole France predicts that: "The ages to come will repeat that fruitful art came to the sterile West from Athens and Rome, and those among us whom the voice of the day exalts will to-morrow be forgotten, because they ignored this. The hackneyed path which they press in crowds leads them to fortune and applause, but noble thought and noble language will not be trampled upon by them without taking their revenge."

THE CLASSIC SPIRIT IN ART.

The American artist, Kenyon Cox, has shown us how much easier it is to find a new way of being bad than to master the old way of being good, and that the new bad thing is, at any rate, sure to be noticed. He, too, pleads for the classic spirit; he says, "The classic spirit is the disinterested search for perfection; it is the love of clearness and reasonableness and self-control; it is, above all, the love of permanence and of continuity." Fortunately, history is now being written and taught as a continuous development; the old watertight compartments have broken down. Pagan and Christian art are no longer harshly opposed; we observe the identity and continuity of European culture. To this deeper view, the periods of quiescence or transition are not full stops; we have only recently learned that Greek art was the culmination of centuries; we have still some of us to realise that the Renaissance was the uninterrupted effort of the Middle Ages, and that Michelangelo and Piranesi were Romanticists on one side of their nature.

The classic spirit, then, embraces the whole field of excellence; it breathes alike in the classic temple and the Christian church, and pervades the best of our own work; it is

above the frailty of processes and systems, the accidents of time and material. That the evolution of style must be slow is obvious; to assume that it will be a return to any past phase of expression is illogical; to believe that it will be connected with all that is noble and lovely in the works of the past is reasonable. If ours is not a time congenial to the arts, it is one full of possibilities; we only pleased, too, to hear the President's plea that they should be sportsmanlike. The artist, like the sportsman, should learn to play the game for its own sake, because he enjoyed it, and not solely for its ultimate material rewards. This was of the essence of the architect's aim. Moreover, he should display the keen sense of honour and the comradeship that it engendered. Depend



NEW PROMENADE AT HUNSTANTON.—Designed by Mr. J. C. Walker, Town Surveyor.

advance because difficulties present themselves. We do not want for opportunities; rather do we want powers equal to our opportunities. If it is true that genius leaves no mark of effort, it is equally true that effort marks the great periods of art. We have precious gifts placed in our hands. Culture has been back to its sources to be clarified and corrected; it no longer represents this or that phase of the past. It is a conscious tradition representing the sweetness and light of the Classical world and the strength and daring of the Middle Ages. It is indebted to science for a wider horizon and, in a complex world, for the certain knowledge of the interrelatedness of things, and, not least, for a sense of pervading order to support our faith. Pater has said that the basis of all artistic genius lies in the power of conceiving humanity in a new and striking way; of putting a happy world of its own creation in place of the meaner world of our common days. That view has, perhaps, given too much prominence to the personal view of art, which characterises every transition stage. To close in the same didactic vein as I have fallen into, I will quote two verses of Mr. Roger Heath's:

Preserve our age from every eccentricity,
From subtle decadence and false aesthetic,
That we may follow beauty and simplicity,
Knowing the truly pleasant and poetic

And lest the powers of darkness should allure us
With popular ideas and siren rumour,
Give us this triad that shall save and cure us
Fresh air, cold water, and a sense of humour.

Mr. Reginald Blomfield said, as the junior member of the Association, he esteemed it a great privilege to propose a hearty vote of thanks to their President for his most admirable and extraordinarily suggestive address. Seldom had he listened to more pregnant sentences, more full of thought and common sense than those which formed the latter part of the presidential remarks. It had come upon him as a surprise that the Association had been in existence since 1847; it exhibited none of the characteristics of old age, and was evidently prosperous and progressive. One sign of growing youth was the appeal made to the Institute as the parent body for a larger allowance. Well, the parent body had many and heavy responsibilities, and while it regarded its children with pride and genuine sympathy, and rejoiced in their welfare, he could not say more than that the Institute would consider the case carefully, and that he hoped the appeal would not be made in vain. He must, however, point out that the A.A. School of Architecture was not the only one in London solely controlled by architects, for the schools of the Royal Academy were run upon similar lines. One or two points in the latter part of the address called for comment. It was a vital suggestion of the President that the architectural student must look not to the spirit of the age, but to the spirit of the ages, for inspiration. The student had not to take the line of his own day, but to fall into the line of a great succession, looking to the great past as well as forward into the future. He was upon it, the student would have many opportunities of cultivating these sportsmanlike qualities in his after professional life, and they would add much to its enjoyment and success. He agreed with the President's advocacy of a classic spirit; the essential factors in classic art were a simplicity and a directness of purpose directed by a certain serenity, and perfect balance of mind. If these suggestions were laid to heart, students would avoid the dullness of mere classic academics, and also the hustling and striving for originality for its own sake.

Mr. Gerald C. Horsley, ex-President, seconded the vote of thanks. The part of the address dealing with the work and policy of the Association had been most valuable, and this had been followed by a characteristic exposition of the way in which architecture should be studied, put in a fine literary setting. The influence of that address would not be confined to the crowded audience that evening, but would be circulated by the Press among students throughout all English-speaking countries.

Mr. E. Guy Dawber, past-President, also supported the resolution, observing that the address had been full of interest, suggestion, and thought. He believed that the Association and School would make great strides forward during Mr. Curtis Green's occupancy of that chair.

Mr. H. Austen Hall said they had heard none of the petty details of office work, such as they sometimes listened to, but the President had risen at once to the consideration of main principles. It was true the Association had attained to considerable years, but there were evidences all round of vitality and progress.

The vote of thanks having been carried by acclamation, the President responded, observing that they came to Mr. Blomfield as representing the parental Institute with the plea of Esau: "Hast thou not also a blessing for me, O my father?"

HUNSTANTON NEW PROMENADE.

The illustration here given shows the new promenade, with shelters underneath, erected near the pier at Hunstanton. It was designed by and carried out under the direction of Mr. J. C. Walker, the town surveyor. It has been built entirely of reinforced concrete, without a steel or timber beam or similar support.

The shelters are 200ft. long, 16ft. wide, the reinforcement being steel rods and Lock woven mesh. There are five 40ft. spans, each span being subdivided into four divisions.

The roof to the shelters, which forms the promenade, was constructed of 6in. concrete; the first 5in. was proportioned 4 to 1, the aggregate being all beach shingle carefully washed and graded, whilst the top was finished off with three parts ¾in. granite chippings graded down to dust to one of cement, and 5lb. of "Pudlo" to every 100lb. of cement.

It was decided to finish off the concrete with the addition of the waterproofing powder "Pudlo," and the result is most satisfactory. It will be seen that the promenade and shelters are a decided improvement to the sea front.

The parish church of Wooler has just been enlarged, at a cost of £2,300, from plans by Mr. A. B. Plummer, F.R.I.B.A., Newcastle-on-Tyne.

A council school is to be built in Oxford-road, Horsham, at an estimated cost of £5,000, from plans by Mr. Roberts, architect to the Education Committee.

A Territorial drill hall has been opened at Barry, Glam. Messrs. Teather and Son, of Cardiff, were the architects, and Messrs. D. Davies and Sons, of Cardiff, the contractors. The cost was £5,000.

At the last meeting of the city council of York it was resolved, on the recommendation of the tramways committee, to seek Parliamentary powers for extensions to be made to Hull-road, Heworth, and Huntington routes, and for the extension of the Acomb route to Acomb, and of the Haxby-road system to White Cross-hill.

An Order has been made by the Local Government Board for Scotland authorising the Edinburgh Town Council to prepare a town-planning scheme, under provisions of the Housing and Town-Planning Act, in respect of an area of land situated partly within Edinburgh and partly within Leith, at Craigentinny. The triangular area of land referred to covers 7½ acres.

At a special meeting of Dundee Town Council objections were taken, on behalf of property owners in the east end of the city, to a proposal to establish, in connection with the gasworks, a tar-distillation undertaking. A councillor, Mr. W. H. Buist, said the proposal would interfere with the town-planning schemes, and, indeed, kill them. Mr. R. M. Noble, the gas convener, and Mr. Alexander Yuill, the gas engineer, declared that there would be no smell from the works. By 18 votes to 5 the council agreed to proceed with the scheme.

After much delay, a site has at last been found at Godalming for the memorial to Jack Phillips, the chief wireless telegraphist on the ill-fated Titanic, who was a native of the town. The site chosen is glebe land near Godalming parish church, and is three acres in extent, the greater part of which will be utilised by the corporation as a recreation-ground. The memorial has been designed by Miss Gertrude Jekyll and Mr. Thackeray Turner, and will take the form of a rectangular cloister 120ft. square. It will cost between £600 and £700.

At a cost of £1,800, extension and reconstruction work on the fabric of North Esk Church, Musselburgh, having been completed, reopening services took place on Sunday. In place of the former hall and rooms at the rear of the church, a main hall with accommodation for 670 persons, and a smaller hall to accommodate over 100, with other rooms, have been erected. An organ recess having been added to the church, ninety additional sittings have been provided, as well as rendering practicable sixty more, which the projection of the organ had previously "blinded."

The new Graduate College at Princeton University, and the Grover Cleveland Memorial Tower, which forms part of the group of college buildings, were dedicated on Wednesday with impressive ceremonies. There was a large gathering of present and past students and professors and teachers from all sections, besides representatives of English, German, and French learned institutions. The gifts for the erection and endowment of this new Graduate School amounted to nearly £600,000. The tower was presented to the University by the Cleveland Monument Association, which received contributions from all parts of the United States.

The new Central Carnegie Library at Stockport, built at a cost of £15,000, has just been opened. In the lending library the open-access system has been adopted, and there is room for 40,000 volumes. The general reading-room has stands for 30 newspapers, and tables and seating for about 100 readers. The reference library has shelving-space for 6,000 volumes, and seating accommodation for 40 readers. In addition, there are children's reading-room (capable of seating 120 children), a ladies' reading room, a magazine-room, and two lecture-halls. The architects are Messrs. Iverlshaw and Gass of Bolton whose design, selected in competition, was illustrated and described in our issues of October 28 and December 3, 1910.

Currente Calamo.

The decline of membership of the Architectural Association to the extent of a loss of fifty as compared with last year is, we trust, as Mr. Curtis Green said on Monday night, only one of "the waves of popularity"; and it is true, of course, that for more than one reason architecture at the moment is not the most attractive of pursuits to young men and their parents. But we had rather not have had to chronicle a decrease. A membership of 1,556 is altogether inadequate to the advantages the A.A.—and the A.A. alone—offers. Every young man entering the profession ought to make it his first care and pride to belong to it. It is true that endowed institutions in London and elsewhere have of late tacked on to their curriculum classes in architecture which, doubtless, attract local students, but not one of these has the prestige, the environment, or the good fellowship of the A.A.; neither can any other offer the close association with the men at the front which it enjoys. Moreover, this year it has one of the best of the many excellent Presidents it has ever elected to its headship, who refreshingly combines an utter freedom from the cant of the impressionist critic with the lucidity of the really well-informed and cultured elder student, round whom, whatever else be their defects, young English love to rally, and from whose firstfruits of accomplishment they derive encouragement and inspiration. Any hitherto unattached young man who, after reading Mr. Curtis Green's address last Monday, fails to seek admission to the genial companionship which is proud of him as their chief, will not do much hereafter, or, if he does, he will confess, one of these days, how much he missed during the early years of struggle for lack of the sympathy and fellow-guidance he failed to avail himself of.

For, as Mr. Curtis Green truly said on Monday, nowadays equipment is only a matter of proper guidance and hard work; and certainly half the battle of life is won by good spirits for the fight, and, whatever the pessimist may say about the uncongeniality of the times to the arts, or the mere phrase-monger may beat out into meaningless counsels of sophistry, the inspiring truth is as fresh and invigorating as ever. Men and nations perish, but Humanity lives on for ever; and he who best conceives its highest needs, and strives to meet them, careless of dead systems and styles, but responsive in every nerve to the vision of the happier world that might be if men could but realise it, will never add to the meannesses which revolt him and dwarf his energies. Comparisons are odious, but when we recall the raptures of some of the A.A. young men who, longer years ago than we care to remember, harangued their fellows so eloquently over the super-excellencies of the Gothic revival, and its pursuit as the only path of salvation, we hail with gladness Mr. Curtis Green's clear and inspiring definition of duty: "That the evolution of style must be slow is obvious; to assume that it will be a return to any past phase of expression is illogical; to believe that it will be connected with all that is noble and lovely in the work of the past is reasonable."

We are glad there is no doubt that the Lumsden case will be taken to the Lords. Particulars will be found in our Legal Column elsewhere. The facts, of course, are familiar to all readers. The material point was that it was proved to the hilt, and accepted by the Crown, that between Mr. Lumsden's purchase of the site and his sale of the property the value of the site had not altered by one halfpenny. In spite of this increment duty was demanded which practically levied an Income-tax of four shillings in the pound on his legitimate profits as a builder. Lord Justice Swinfen-Eady, who dissented from the other two judges in the Court of Appeal, took a rational view of the case, and even the Master of the Rolls admitted that the construction of the Act he felt bound to adopt did tax builders' profits. We reviewed the judgment at considerable length in our issue of August 8 last, and if any reader missed that number during holiday-time we advise him to get a copy while it is in print. On the decision of the Lords more hangs than many yet realise. Even so far nothing within our memory has dealt such a deadly blow at our industries.

A Royal Commission has been appointed to inquire into the relationship between the Railway Companies of Great Britain and the State in respect of matters other than safety of working and conditions of employment, and to report what changes, if any, are desirable in that relationship. The following are the Royal Commissioners:—The Earl Loreburn, G.C.M.G. (Chairman); the Earl of Derby, G.C.V.O.; Right Hon. Sir H. Primrose, K.C.B.; Right Hon. F. Huth Jackson, late President of the Institute of Bankers; Sir F. R. Upcott, K.C.V.O., late Chairman of the Board of Indian Railways; Sir W. Plender, late President of the Institute of Chartered Accountants; Mr. A. Balfour, late Master Cutler of Sheffield; Mr. R. E. Prothero, M.V.O.; Mr. D. J. Shackleton. Mr. E. W. Rowntree, of the Board of Trade, will act as Secretary to the Commission. All good men in their way. But the absence of any names of railwaymen, or of publicists who have studied railway questions—especially railway nationalisation—suggests that the appointment is either mere window-dressing, or that the Government, like ourselves, is less disposed to take over the railways than some were inclined to do, say, ten years ago. Probable developments in other directions rather suggest that other modes of traction are likely, year by year, to prove more and more formidable rivals.

Mr. Edwin Lutyens and Mr. Harold Baker, the architects selected by the Government of India to prepare designs for the more important buildings in the new Imperial capital, and to act generally as its principal architectural advisers, leave London on November 13, says *The Times*, to embark in the mail steamer Egypt at Marseilles en route for Delhi. The designs they have had in preparation for some time past will then be discussed with the Viceroy, and final decisions may be expected. Offices for them and for the engineering staff have been built on the Rasina hill, in proximity to the central point where Government House, the Council Chamber, and the large blocks of secretariats are to be erected. Sir Swinton Jacob, who was appointed in January last to assist Messrs. Lutyens and Baker, and to furnish advice as to Indian materials and the employment, where possible, of Indian craftsmen, has resigned on the ground that at his age he prefers to be free of official responsibilities; but he will be in India this cold weather, and has undertaken to give honorary advice and co-operation. It is the intention of the Government of India to select in his place an Indian master craftsman of architectural experience and repute. It is also proposed that the studio at Delhi for indigenous architectural work should be in Indian hands, as far as practicable. The decision that the expansion of the modern city should be southwards beyond the walls from the Ajmere to the Delhi gate has given much satisfaction locally, and many applications have been received for ground for buildings within the prescribed area.

Sir Hubert von Herkomer's paper last Sunday evening at the Playgoers' Club on the future of the Cinema was a valuable and suggestive one. Most people will agree with him that the public are getting sick of the sham sensationalism and "hair breadth escapes," and that it is time the "drug of the film" was banished from the cinema theatres. All will echo his commendation of the wisdom and good taste which have already combined to give us better things, such as the representations of standard drama, pictures of the Old Masters, natural history, and the marvels of science. We are not so sure that the "fine theatres" Sir Hubert alluded to are as yet by any means as common as they might have been. Things are improving, certainly, in that direction. We hope ourselves next week to illustrate one of the best and most complete cinema palaces yet designed, which includes some novel features, and in which the convenience of the public has been intelligently studied.

The German Emperor seems to have interfered drastically in the final stages of the recent competition for the new £200,000 building for the German Embassy at Washington. Yesterday week the official *North German Gazette* briefly announced that the Embassy will be built according to plans of the Court architect, Herr von Ihne. It seems that when Count von Bernstorff, the German Ambassador at Washington, had an audience with the Kaiser in Berlin on Tuesday week, his Majesty informed him that he was so displeased with the award of the prize by the jury which recommended the design of Herr Moehring, one of the best-known architects in Germany, that he had decided to consign the award, as well as 271 other designs viewed by the jury, to the waste-paper basket, and simply commission Herr von Ihne to draw up new plans. The jury whose award has evoked the Emperor's disapproval included the Foreign Secretary (Herr von Jagow), Count von Bernstorff, and some of the leading architects of the Empire. The Emperor said Herr Moehring's design was "not suited to Washington." The German Press predicts great dissatisfaction among architects over the Emperor's action, which is attacked not only on account of its unconventionality, but also because the Court architect is not likely to do better. Herr von Ihne, who is said to be a personal favourite of the Kaiser, is architect of the new royal library and Kaiser Friedrich museum in Berlin.

Herr von Ihne, the architect whom the Kaiser has summarily entrusted with the new £200,000 Embassy—after sweeping the designs of 272 competitors into the dustbin—is really half an Englishman, seeing that his mother was of our nation, and that he himself

was born at Liverpool, where his father was for long a teacher of German. After that the father became Professor of English Literature at Heidelberg, where he had a picturesque residence on the right bank of the Neckar, over against the old Schloss. It was with him that Princes Eddy and George now the King—spent some time in learning German after their cruise in the Bacchante. In this way young Ihné was introduced into Court circles at Berlin, and he became an intimate of Count Seckendorff, Chamberlain to the Empress Frederick.

Bonny Scotland goes one better than the Scribes and Pharisees of old. Their fathers slew the prophets, and they built them sepulchres. Who built the sepulchres of Scotland's past men of might and valour we do not know, but in the Highlands to-day one District Committee, at any rate, breaks them up to pave the roads with. A local paper thus describes an "interesting discovery made in the wild and mountainous pass of Drumochter, some three miles to the south of Dalwhinnie, where Glasgow contractors are carrying on operations on that part of the Badenoch District Committee's roads in connection with the Central Road Board grant. The stones in a large cairn close by the Great North Road, between Perth and Inverness, were being utilised for road-metalling purposes, and while engaged in removing these stones the workmen, etc. . . . Further operations revealed a stone cist, or coffin, in the centre of the cairn. . . . The cist was formed of a large rough slab supported by rows of upright stones, suggestive of Pictish origin." Professor G. Baldwin Brown quite rightly declares in *The Times* that this naive description ought to have been headed, "Disgraceful Act of Vandalism," and reminds us that the Royal Commission on the Ancient Monuments of Scotland has constantly appealed to public bodies that have the control of the roads to forbid such intolerable acts, and has been constantly assured that orders are given which should make them impossible, yet here is a contractor allowed calmly to destroy to the bottom this notable prehistoric structure, belonging to a class that the Government and the country generally are bent on preserving.

In Boston by the City Ordinances of 1912, chapter 9, it was ordained that in future, after a given date all builders would have to be licensed, first having to pass an examination. According to the last "Monthly Letter" of the Master Builders' Association of Boston, the Board of Examiners of the Building Department are now engaged in the examination of builders for "persons to have charge and control of work." The indications are that before long the Board will determine, under section 9 of the ordinance, "that a sufficient number of persons have been licensed under the various classes." After thirty days have elapsed following posting of notice of such determination in the offices of the Building Department, and publishing of same in the "City Record," applications for permits to build are liable to be refused by the building commissioner unless the application contains the name of a duly licensed person. Contractors are advised to attend to this matter promptly, and thus avoid annoyance and delay later on. Our own builders' societies would do well to note that civic or State action of a similar nature is sure to come along here some day.

The contrast between Governmental and municipal activities as regards publicity here and on the other side increasingly strikes us. Here proffers of information are as rare as they are refreshing, and when it falls to our lot to solicit it, it is not seldom refused; frequently given grudgingly; and sometimes in a fashion after which the Almighty might condescend to enlighten a blackbeetle. They know better across the Atlantic, and that is one reason why American and Canadian cities forge ahead. Among the many friendly little budgets we get every week, one is on our desk now from the Saskatoon Board of Trade, which is issued weekly, and which almost induces the resolve to emigrate there at once. From the rest we pick out a few items in our own line this week. For the first nine months of the present year, Saskatoon's building permits aggregate upwards of three million dollars, not including the big Dominion Interior Elevator, which will cost 2,000,000 dollars, and the 25th Street Bridge over the river, which will involve an expenditure of over 400,000 dollars. Our brother builders evidently feel their bigness, for the Saskatoon Builders' Exchange has just passed a resolution requesting that the city council do hereafter submit to the exchange for their approval or improvement any proposed by-laws likely to affect builders. "It was felt that builders ought to have some say in such matters." Imagine the horror, here, of some of our sapient local Bumbles at such ideas! There are big jobs on in Saskatoon, too. Messrs. Thompson and Crockart, architects, have just received instructions to notify contractors to proceed with the construction of the new premises of the Bank of Nova Scotia "and to rush work." The building will be of brick and stone. It will have a 25ft. frontage and a depth of 80ft., and be three stories high. Its total cost will be 35,000 dollars.

A main drainage scheme for Swansea is under the consideration of the corporation. The cost is estimated at £344,500, as against the £225,000 of the former scheme. Mr. Midgley Taylor is the engineer.

At the convention of the American Society of Archæologists recently held in St Louis, E. P. Thompson, of Dayton, Ohio, was elected president, and General Bennett Henderson Young, of Louisville, Kentucky, vice-president.

The housing committee of the corporation of Bury, Lancs, decided on Friday to invite design, specifications, and tenders for ten pairs of semi-detached dwellings. The town already possesses a number of municipal dwellings.

At Douglas Consistory Court, on Tuesday, the Vicar-General of Sodor and Man granted a faculty to the vicar and wardens of St. Matthew's Church, Douglas, to erect a reredos in the church and a side-chapel on designs submitted to and approved by the Court.

The church tower at Ardee, built one hundred years ago to replace a frontage erected seven hundred years earlier, has been under repair. The work has been entrusted to Hargrave Brothers, the representatives of a firm connected with the parish during upwards of two hundred years. Mr. John Hargrave, while superintending the erection of scaffolding, suddenly expired on the bell-loft of the tower.

The Birmingham Corporation, at their last meeting, gave authority to the Public Works Committee to proceed with the construction of that portion of road No. 2 forming part of the Quinton and Edgbaston town-planning scheme which lies between Lordswood road and Balden road, and the widening of Lordswood-road and Balden-road to Elm Tree-road, at an estimated cost to the corporation of £10,426. He pointed out that the land for increasing the width of the roads had been given by the landowners, and that a grant from the Road Board amounting to £4,419 had been allocated to the cost. The committee also received authority to carry out schemes for the improvement of the sewers in Stratford-road Washwood Heath and Stechford.

Building Intelligence.

EDINBURGH.—New chemical laboratories have been provided for Heriot-Watt College, in the building formerly occupied as an art school. A new bridge has been thrown across Scott's Close to give direct communication between the main college building and the laboratories. The building as reconstructed is three floors in height, a goods and passenger lift giving communication to each floor. Professor Gibson and Mr. John Anderson, superintendent of works, George Heriot's Trust, collaborated in the design of the new laboratories. The cost of the alterations, fittings, and new apparatus has been about £6,000.

KNOWLE, BRISTOL. The open-air school at Knowle was opened on Monday by the Lord Mayor of Bristol. The building is planned as the letter L, with the dining-room, classroom, and rest shed facing a little south of south-east, and screened by the administrative portion of the building, which faces north-east. The school comprises a classroom and rest shed 50ft. by 25ft., dining-room 20ft. by 25ft., bathroom, nurses' and teachers' rooms, clothes store, boys' and girls' cloakrooms and offices, kitchen, larder, and stores for fuel, rest chairs, and tools. The south-east side of the classroom and rest shed is open, the end and north west side being enclosed and fitted with windows and French casements respectively. Opening fanlights, carried up the full height of room, are fitted over the French casements, so that on all of these being thrown open, the classroom and rest shed become practically an open shed. The dining-room is fitted with similar doors and fanlights, and thorough cross-ventilation is obtained by the use of the latter should the doors be closed. The dining-room is divided from the classroom and rest shed by a swivel-hung glazed partition, which folds back to each side of room, thus obtaining an unimpeded floor-space of 1,750sq.ft. The contractor is Mr. E. C. Norris, Bath Bridge, and the architect is Mr. B. Wakefield, L.R.I.B.A., 14, Orchard-street, Bristol.

NORTH BERWICK.—The Edington Convalescent Home, erected under the trust disposition and settlement of the late Miss Elizabeth Edington, of Ethendune, North Berwick, was formally opened last week. The home has a frontage of over 100ft., and it consists of a main front block, two lavatory wings, and kitchen block. There are five wards, matron's parlour, dining-room, operating-room, matron's bedroom, nurses' bedrooms, kitchen, scullery, larder, etc., and two large bedrooms for servants have been placed over the kitchen block. The architect was Mr. W. Ross Young, burgh surveyor, North Berwick, now town-planning engineer for Mid-Lanarkshire. The building and furnishing cost about £3,500.

ROSYTH, N.B.—The Admiralty have entered into negotiations with a large English syndicate for the erection of workmen's houses at Rosyth and near the Crombie Explosive Works. In agreeing to part with their 300 acres of land available for building at Rosyth, the Admiralty made it obligatory on the syndicate to secure other land from Lord Elgin, in order to complete their building design; but no difficulty on this point is anticipated. The houses will be upon an English model village pattern, they will be built of 9in. bricks, roughcast, the walls will be hollow, and the ceilings 8ft. in height. Most of the dwellings will consist of two apartments, and in order to give plenty of play for light and air no more than ten to the acre will be allowed. The scheme for Rosyth and Crombie is estimated to involve the erection of about 4,000 houses.

SOUTHEND-ON-SEA.—The opening of the new nurses' home and administrative block just added to the Borough Sanatorium in Balmoral-road, Leigh-road, took place on Wednesday week. The new portion has been created from the plans of the borough engineer (Mr. Ernest J. Elford). The building is at the Balmoral-road entrance to the sanatorium. The L.G.B. sanctioned the

[illegible] £8,500 for a comprehensive scheme of administrative block, [illegible] house, mortuary, laundry, administrative pavilion and [illegible] block. The latter is not yet erected. Messrs. E. and B. H. Davey secured the contract for the block opened last week, their tender being for £4,800. The administrative group comprises on the ground floor the main entrance and hall, from which access is gained to the offices, matron's room, nurses' day room, nurses' messroom, with kitchens, servants' hall, and stores. On the first floor there are ten bedrooms and the matron's room, with linen stores, bathroom, and lavatory accommodation. Fourteen bedrooms occupy the second floor, with boxroom, bathroom, and lavatory. The whole block is [illegible] with red dressings and slated roof. It is ventilated throughout by Boyle's [illegible]. Mr. C. Milnes was clerk of the works.

The [illegible] opened on Saturday by the Lord Mayor, is the [illegible] Department of Sheffield University.

At Primrose Hill, Huddersfield, a new United Methodist church, built at a cost of £3,000 from plans by Mr. W. Cooper, has just been opened.

The negotiations for the purchase of Cassiobury Park by the Watford Urban District Council as a public park have been satisfactorily completed.

A [illegible] hall is [illegible] in Dodd's South street, Lancing, from plans by Mr. Otto Doll, A.R.I.B.A., of North-street, Brighton. The [illegible] cost £1,250.

The [illegible] Council [illegible] adopted a report by the city engineer, and will reconstruct the Brislington Bridge across the Feeder River [illegible] about £2,200.

The [illegible] church at Stonegravels near Chesterfield was consecrated by the Bishop of Southwell on Friday. The extension has cost £2,300, and the church now accommodates 500 persons.

A [illegible] hall on Mendalgief road, Newport, Mon., has been formally opened. Messrs. Maples Linton and Alan Davies were the architects, and Mr. C. H. Reed was the [illegible].

The foundation stone has been laid of a Wesleyan Methodist chapel in North-street, Luton. The architect is Mr. W. H. Guest Hubbard, and the contractor Mr. T. Higgs, of Northampton.

The façade of the new premises for the British School at Rome, in what was the British Pavilion at the Exhibition of 1911, whither the School will migrate when its present lease at Palazzo Odescalchi expires in March, 1915, is nearly finished.

The Bishop of Exeter, at Devonport, recently, consecrated the new church of St. Philip, which is the eleventh that has been built out of the fund of about £60,000 raised for church extension in the three towns of Plymouth, Devonport, and Stonehouse.

The Finchley Urban District Council have decided to apply to the Local Government Board for a loan to purchase 36 acres of land, of which there will be allocated 6 acres for a new elementary school, 5 acres for open spaces, and for workmen's dwellings and gardens 25 acres.

The Hemel Hempstead Joint Hospital Board propose to build at Bennett's End Hill an infectious-disease hospital, and, arising out of their application to borrow £6,000 for this purpose, a Local Government Board inquiry was held at the town hall on Thursday before Mr. F. St. George Mivart, M.D. The architects are Messrs. Snell and Spurr.

A new synagogue for the South Manchester [illegible] was consecrated last week by the Chief Rabbi, the Very Rev. Dr. J. H. Hertz. The synagogue stands in Wilbraham-road, Fallowfield. It is a Byzantine building which has cost £7,000. It will seat 500 worshippers—300 men and 200 women. The ark [illegible] with gold mosaic.

The public health committee of the West Ham Town Council have reported, in connection with the plans for the erection of new baths at Silvertown, that the borough engineer had called attention to the settlement of the buildings which has taken place in the district, and the committee recommended that the erection of the baths be deferred for the present. The council agreed.

COMPETITIONS.

BIRMINGHAM.—The governors of the Blue-coat School, Birmingham, at their meeting on Tuesday, adopted the award of the assessors, Mr. G. H. Hunt and Mr. Charles E. Bateman, in the recent double competition for a design of a new school to be built at Edgbaston. In the preliminary open competition twenty-three sets of designs were submitted, and the [illegible] prepared by Mr. J. L. Ball, Messrs. Garrett and Simister, and Mr. Marcus O. Type were selected. In the final competition Mr. J. L. Ball's design has been accepted, subject to any alterations or modifications that may be [illegible]. It is hoped to obtain the approval of the Board of Education and commence building operations as soon as possible on the new site. The buildings will provide accommodation for 180 boys and 90 girls. The main building will consist of [illegible] and a dining hall, besides a school on the ordinary [illegible]. There will be houses for both the secretary and the head master adjoining the main block of buildings. The school will be equipped with a laundry, and the scholars will have the advantage of swimming-baths. The engineering department will be fitted up with mechanical materials, and there will be connected with the institution an infirmary joined to the main building by a covered way. Nine dormitories will be provided, and an extensive playing-field will be connected with the buildings. The school and the adjoining buildings will be severely plain. [illegible] has however been paid by the architect to light and ventilation. The cost of the new buildings will be about £[illegible].

HENRY JARVIS STUDENTSHIP.—The Council of the Royal Institute of British Architects have awarded the Henry Jarvis Travelling Studentship in Architecture to Mr. Louis de Soissons, student of the Royal Institute, on the recommendation of the Faculty of Architecture of the British School at Rome. Mr. de Soissons, who gained a prize at the Royal Academy Schools five [illegible] for a design for a Walled City (illustrated in the BUILDING NEWS for February 5, 1909), and was also the Tite Prizeman for 1912, is the first winner of this studentship, which is open to Associates and Students of the Institute under thirty years of age, and is of the value of £200 per annum, tenable for two years at the British School at Rome.

"OWEN JONES" PRIZES FOR INDUSTRIAL DESIGN.—The Council of the Royal Society of Arts hold a sum of £400, the balance of the subscriptions to the Owen Jones Memorial Fund, presented to them by the committee of that fund in 1876, on condition that the interest thereof be spent in prizes to "students of schools of art who, in annual competition, produce the best designs for household furniture, carpets, wallpapers and hangings, damasks, chintzes, etc., regulated by the principles laid down by Owen Jones." Competitions, under the terms of this trust, have been held annually since 1878. The next award will be made in 1914, when six prizes are offered for competition, each prize to consist of a bound copy of "The Leading Principles in Composition of Ornament of Every Period," from the "Grammar of Ornament," by Owen Jones, and the Society's bronze medal. The prizes will be awarded on the report of the examiners in the National Competition of the Board of Education. Designs submitted for these prizes must be sent in with the other works forwarded for the National Competition. They must be marked "In competition for the Owen Jones Prizes," and must comply with the rules governing the National Competition as issued by the Board of Education. No candidate who has gained one of the above prizes can again take part in the competition.

THE ROME SCHOLARSHIP IN ARCHITECTURE. The Royal Commissioners for the Exhibition of 1851 have awarded the Rome Scholarship in Architecture to Mr. Harold Chalton Bradshaw, on the recommendation of the Faculty of Architecture of the British School at Rome. The competition for this Scholarship was divided into three stages, the final contest being held "en loge" in the three weeks from September 15 to Oct. 4. The first preliminary stage of the competition was for a design for a "Mausoleum on a Rocky Islet in a Lake," and the second for a "Technical University in the Outskirts of a Large Industrial Town." From the results of these, seven students, two of whom were Liverpool men, were chosen to work in London "en loge" for three weeks at a design for a "Public Place Surrounded by Government Buildings," including a Foreign Office, of which building details were required. The work of all these seven students, together with the designs for the previous competitions, will be publicly exhibited at the end of the year, together with the work executed in the final competitions for the scholarships in Sculpture and Decorative Painting. Mr. Bradshaw is the first winner of the Rome Scholarship Architecture, which is open to British subjects under thirty years of age, and is of the value of £200 per annum, and tenable for three years at the British School at Rome. He was born on February 15, 1893, at Liverpool, and received his early education at the Holt Secondary School. After some training as private assistant to the Roscoe Professor of Architecture of the University of Liverpool, he entered, in 1911, the School of Architecture as a student with a special grant from the University, where he is at present working as a third year student. In July of this year he obtained the Holt Travelling Scholarship and the University Certificate given at the end of the first two years of the course. At the University he has already gained several prizes, including the Lever Prize awarded last year for the best design for a new river front to Liverpool. He is a registered student of the Royal Institute of British Architects, and he obtained second place and honourable mention in the last competition for the Soane Medallion for an excellent design for a railway station. He has also received the distinction of having one of his drawings, submitted as a "Testimony of Study," sent by the Royal Institute of British Architects to the Allied Architectural Societies of the country as a specimen of draughtsmanship. The Faculty for Architecture, or jury, was Mr. Reginald Blomfield, A.R.A., chairman; Professor W. R. Lethaby, Mr. E. L. Lutyens, A.R.A.; Sir Robert Lorimer, Mr. Ernest Newton, A.R.A.; Mr. C. H. Reilly, Mr. J. W. Simpson, Mr. Leonard A. S. Stokes, and Sir Aston Webb, C.B., R.A. When it became evident that the candidate from Liverpool had reached the final stage, Professor C. H. Reilly declined to vote.

LENDRING UNION AND RURAL DISTRICT COUNCIL.—The plans of Mr. N. J. Dawson, architect, of Chelmsford, for cottage homes, were accepted by the guardians on Wednesday week. Mr. J. Shewell Corder, architect, of Tower-street, Ipswich, was the assessor.

TORONTO.—The Imperial Trade Correspondent of the Board of Trade reports that a competition of designs for a Masonic Temple building to be erected in Toronto has been announced by the Masonic Temple Corporation. Designs will be received, up to January 20, 1914, by Mr. W. H. Best, 181, Avenue-road, Toronto, from whom further particulars may be obtained. The first prize will be the commission for designing and supervising the erection of the building. Three other prizes of 750dol., 500dol., and 250dol., respectively, will be awarded. The estimated cost of the building is to be about 250,000dol. (£51,400).

A new and ornate pulpit has just been erected in Ripon Cathedral. It was dedicated on Sunday. The design is by Mr. Henry Wilson, of St. Mary's Platt, Kent.

Tenders will be invited early in November for the first section of the proposed new buildings of University College, Dublin, the cost of which is estimated at £95,000. The [illegible] have been prepared by Messrs. Mc[illegible] and Kavanagh, of that city.

PROFESSIONAL AND TRADE SOCIETIES.

ARCHITECTURAL ASSOCIATION OF IRELAND. On Oct 23 a general meeting of the Architectural Association of Ireland was held in the rooms in 15, South Frederick-lane. Professor W. A. Scott, A.R.I.B.A., president of the society, occupied the chair. Some nine names were proposed for membership, and the nominations were accepted. Professor Scott then delivered his inaugural address. Referring to the disappearance of old Dublin mansions, he said that the Georgian Society had done a great service in reviving interest in the work of that period. They, as architects, should endeavour to do their part in trying to maintain these high ideals. The speaker regretted that, owing to the want of sufficient support, their annual excursion fell through this year, and suggested that young students in their profession should seize every opportunity of seeing buildings in the course of erection, as the skeleton of a building was more instructive than when one saw it finished. The student is thus better able to arrange his design, and design often falls short from a lack of knowledge of the material. In fact, an architect was always a student, and more so than in any other profession. He suggested the establishment of a library of modern design, where young students could study with advantage, and in referring to the proposed art gallery, said that although Sir Hugh Lane's gift would have been of immense benefit, they had no right to barter away the rights of the citizens on such a project. He greatly admired the design of Mr. Lutyens, but it would have resulted in the blocking out of light and air, and obstructing a delightful view at any season of the year. Dealing with the housing problem, he advocated better and more sanitary dwellings for the people, and advocated the planting of trees and plants where they would enliven present depressing surroundings. The chairman expressed his indignation at what he termed the vandalism of those who altered the appearance of ancient Dublin dwellings, by taking away the old limestone and substituting Portland stone instead. He denounced the practice of washing down the public statues in the city, and re-dressing them, which he considered as injurious and inartistic. There was never a better time or greater need for taking action in this matter. Mr. Frederick Hayes, vice-president, having taken the second chair, Mr. P. J. Lynch, F.R.I.A.I., proposed a vote of thanks to Professor Scott, which was seconded by Mr. R. Caulfield Orpen. Mr. Kaye-Parry, in supporting the vote of thanks, said there was a great deal of information contained in the president's address, for which they should be most grateful. Mr. Hudman also supported the vote of thanks, and suggested the use of steam to cleanse the public statues in the city. It would save the practice of washing, scrubbing, and chiselling the statues which had been adopted of late. Professor Scott having replied to the vote of thanks which had been passed with acclamation the proceedings terminated.

BIRMINGHAM ARCHÆOLOGICAL SOCIETY.—Mr. J. A. Cossins presided at the annual meeting of the Birmingham Archæological Society, held at the Midland Institute on Friday night. The annual report of the committee stated that the membership had increased from 186 to 207 during the year, and the financial statement showed a surplus on the year's working of £9 17s. 10d. The report was adopted, and the officers were elected as follow: President, Mr. J. A. Cossins; hon. secretary, Mr. H. S. Pearson; hon. librarian, Mr. F. B. Andrews; hon. excursion secretaries, Messrs. P. B. Chatwin and J. Humphreys. After the business of the meeting had been transacted Mr. Cossins read a paper on the society's excursions to Claverley, Maxstoke, and Shrewsbury and Uriconium, and Mr. Philip B. Chatwin, F.R.I.B.A., spoke on the excursion to Kyre Wyard.

BIRMINGHAM ARCHITECTURAL ASSOCIATION.—The opening of the session of the Birmingham Architectural Association took the form of a smoking concert at the Imperial Hotel on Friday evening, and was the more interesting by the fact that there was a presentation to the past-president, Mr. Charles E. Bateman, F.R.I.B.A. The presentation consisted of a portrait of Mr. Bateman, and the gift had been widely subscribed to by members, and was painted by Mr. Wainwright, a well-known local artist. The gift was regarded as a slight recognition of the great services Mr. Bateman had rendered to architecture generally, and particularly as an expression of the feelings of his colleagues in Birmingham. The presentation was made by Mr. G. Salway Nicol, the president.

THE LAW RELATING TO CORRESPONDENCE.—A paper on this subject was read before the Auctioneers' and Estate Agents' Institute on Friday evening (the president, Mr. B. I'Anson Breach, presiding) by Mr. W. E. Singleton, LL.B. The subject was one of great importance to auctioneers or estate agents, who, it was estimated, spent one-fifth of their working day writing letters and reports. On the subject of contracts made by letter, an important one from the point of view of the purchase and sale of estates, Mr. Singleton dealt with letters which constitute agreements. A contract was entered into where there was an unconditional acceptance of an offer. An acknowledgment of the offer and the acceptance of the terms were all that was required in such cases. Anything beyond this was dangerous if a contract was desired. The party accepting an offer and introducing a new condition was not allowed to waive that condition afterwards for the purpose of establishing the contract. A particular case was instanced where an applicant for a lease of certain premises agreed to take them at a certain rent. On receiving the letter containing the offer the landlord took up the applicant's references, but had not finished his inquiries when the latter found a place that suited him better. In this case the applicant was not bound, because the landlord had not replied to the letter or verbally accepted the offer.

PREHISTORIC EGYPT. — Mr. Percy Handcock, formerly of the Egyptian and Assyrian Antiquities Department of the British Museum, lectured on Saturday at that institution on "Prehistoric Egypt." The early pre-dynastic Egyptians, he pointed out, were neolithic, and the flints of their workmanship were the finest wrought flints in the world. Later on copper came into use, and by the time of Aha-Men, one of the earliest-known kings, gold was also known. Iron was known as early as the Fourth Dynasty, and Mr. Handcock referred to an isolated example of the use of lead, in the shape of a small figurine of the time of the First Dynasty. The dynastic Egyptians made undoubted contributions to the progress of civilisation, notably in regard to the development of the hieroglyphic system and the practice of metallurgy; but, in the main, they built upon the foundations of their predecessors. The painting on early Egyptian pottery showed that the people knew how to build and navigate sailing as well as rowing boats from the earliest times. The lecturer compared the forms of human beings on Egyptian pottery with those on pottery fragments recently discovered at Susa, and suggested that the similarity seemed to afford evidence of an early connection between the Susan and Egyptian civilisations.

ROYAL TECHNICAL COLLEGE ARCHITECTURAL CRAFTSMEN'S SOCIETY, GLASGOW.—The third meeting of the session in connection with the Royal Technical College Architectural Craftsmen's Society, Glasgow, was held on Friday, October 24. Mr. T. G. Gilmour, A.R.I.B.A., in the chair. Mr. Robt. Park delivered a lecture on "The Execution of Reinforced-Concrete Work." After giving a definition of concrete, the lecturer said that there were great differences of opinion as to which was the best system of reinforced-concrete construction. In his opinion there was more to fear from bad workmanship than from design. All systems were equally good. He regretted that architects did not seem to realise the rapid advance of this form of construction toward more general use. The development of this system was left to the firms engaged in the work, who offered designs and estimates free of charge, and, as far as Glasgow was concerned, it was high time architects were becoming alive to the fact that specialists were stealing a march on them. Mr. Park said that for good work there must be good and capable management, and labourers also must be trained to the work, as any sort of casual labour would not do. He emphasised the importance of thoroughly understanding five points—namely, drawing, timbering, placing of steel, mixing and placing of concrete, and finishing surfaces. The timbering must be absolutely correct, and ¼in. in 6ft. allowed for sinking. The best level to use is the water level. To plane the sheeting makes for economy and good work. The best method of finishing the surfaces is to polish them with carborundum, and then fill up all the voids with cement mortar rubbed in with a wood float. Mr. Park had splendid models of timbering and steel work, and was, therefore, able to demonstrate his various points very clearly to his audience.

TEMPLES OF THE PHARAOHS.—In his lecture at the British Museum on the great temples of Egypt, delivered on Thursday last, Mr. Banister Fletcher showed how the chief building activities of Egyptian kings from B.C. 3700 down to the first century of our era were directed to the erection of temples. There were the normal types of temple, mortuary temples consecrated to religious rites for the dead, Mammeisi temples dedicated to the mysteries of Isis, and stupendous rock-cut temples, of which the quarry was itself the temple site. In all these the purpose controlled the plan and the component parts. The grandest and most impressive were the normal temples, in which the whole building was designed to lead up through avenues of crouching sphinxes, past obelisks and royal statues, by successive, diminishing stages of gigantic pylons, forests of columns, hypostyle halls to the hidden inner sanctuary or royal oratory, to which only kings and priests might penetrate, while the common people could not pass beyond the outer court. Thus their purpose, and consequently their plan, differed from Greek temple, Christian church, and Mohammedan mosque. The great temple of Ammon of "hundred-gated Thebes" gradually grew to its magnitude and imposing character by the additions of successive kings, much as an English Mediæval cathedral was slowly developed. This temple was endowed by Rameses the Great. He also not only built the Rameseum and the temple of Abu Simbel, but everywhere he added to other men's buildings, and even effaced their inscriptions and replaced them by his own, and was thus not only the great building king of Egypt, but the most successful advertiser in the world.

The full-sized model for General Sir Alexander Taylor's statue for Delhi is now complete, and can be seen to-day and to-morrow, between 2 and 4 p.m., at Mr C. Hartwell's studio 62, Acacia-road, St. John's Wood.

The Association of Municipal Corporations, at its autumn meeting in London on Friday, passed a resolution approving of the recommendations of the Royal Commission for the State acquisition of canals, but without the State becoming a carrier, and for the appointment of a Waterways Board as the controlling authority to manage and gradually to develop our canal system.

At the parish church of Stutton, on the Suffolk bank of the River Stour, the Bishop of Norwich has dedicated the peal of five bells, which have been recast, and an additional treble bell, which forms a memorial to the late Rev. T. Hill Jones, incumbent. The work of recasting and providing a fresh bell has been carried out by Messrs. Bowell and Son, of Ipswich.

Mr. Stewart, Local Government Board inspector, held an inquiry on Saturday into the Northwich Urban District Council's application to borrow £8,500 for the purchase of the site and the erection of forty-eight workmen's dwellings to let at 4s. 6d. per week. The clerk said the council were unwilling builders, but for seven years the medical officer had reported a dearth of labourers' dwellings and overcrowding

Our Illustrations.

KOWLOON-CANTON RAILWAY, BRITISH SECTION, TERMINAL STATION, KOWLOON.

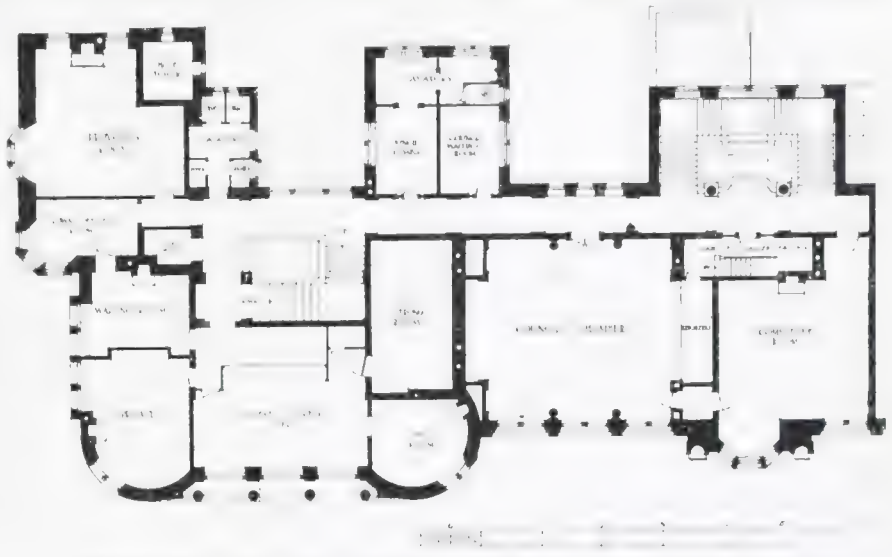
This terminus is in course of construction on Kowloon Point on the mainland, opposite the Island of Hong Kong, for the British Section of the Kowloon-Canton Railway. The accommodation provided by this station comprises Customs, Examination Hall, concourse and booking-offices, lavatories, refreshment rooms, and the usual station offices on the ground floor. The whole of the railway administration offices are on the first floor. The fact that the whole of the site is reclamation ground has made the foundations very expensive, and expenditure had, therefore, to be curtailed on the building itself. The bricks used for facing are red Canton bricks, and columns and dressings are in a local grey granite. When the main lines in China are linked up this station will be the Asiatic terminus of the line from Calais across the Continent, Siberia, Manchuria, to Hong Kong. The architect is Mr. Arthur B. Hubback, F.R.I.B.A., Government Architect to the Federated Malay States, who was specially engaged by the Government of Hong Kong to design this station.

THE CANONS' STALLS, BRISBANE CATHEDRAL.

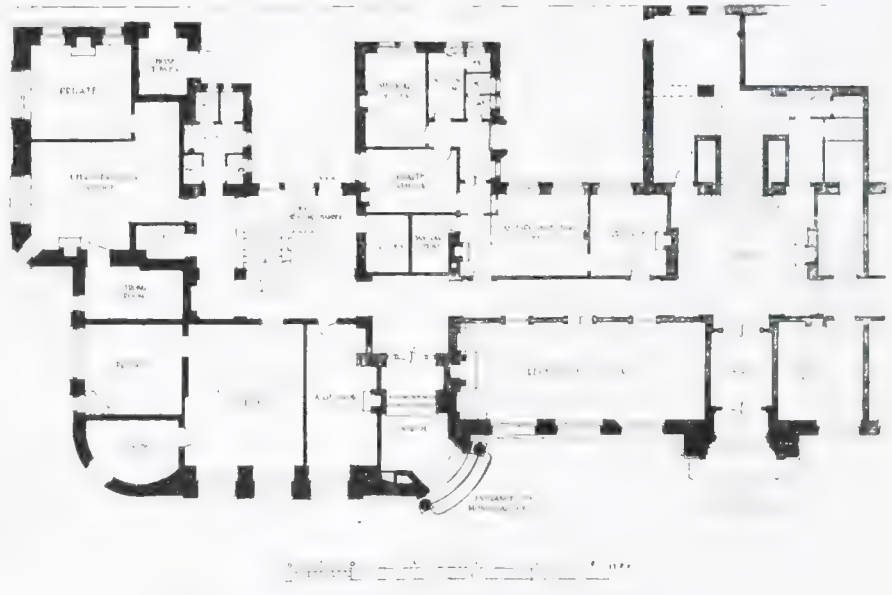
The first portion of the choir-stalls, consisting of three canons' stalls on each side of the choir, have been erected recently in Brisbane Cathedral from the designs of Mr. Frank L. Pearson, F.R.I.B.A., the architect for the Cathedral. When the scheme is completed there will be ten canopied stalls on each side, with choir-stalls in front. The work has been carried out in teak at Exeter by Messrs. Luscombe and Son, the sculptured figures being by Mr. Nathaniel Hitch, of Kennington. We gave an interior view of Brisbane Cathedral in the BUILDING NEWS for May 13, 1910, from the drawing then in the Royal Academy Exhibition, and we also printed some particulars of this fine church supplied by the architect, Mr. Frank L. Pearson.

NEW MUNICIPAL BUILDINGS, STIRLING.

We give illustrations of the selected design for the new municipal buildings to be erected in the Corn Exchange, from the designs of Mr. J. Gaff Gillespie, F.R.I.B.A., who gained the premium of one hundred guineas awarded by the town council. The estimated cost of the complete scheme is over £30,000, but it is only intended to proceed now with the portion next the Back Walk, which includes the new council chambers, with offices for the town clerk and the other departments. The plan has now been considerably amended, as described below, and the immediate cost is to be about £21,000. The municipal buildings, as originally planned a few years ago, were estimated to cost £12,000. These buildings at the present time would cost £14,550, and as the accommodation required now is almost one-third more than originally contemplated, a proportionate sum must be expended to give a proper building, worthy of the town. The following offices are now provided on the different floors, as will be seen by the plans here reproduced:—Ground floor—Assessor's office, 23ft. by 11ft.; collector's private room and strong room, public office, 25ft. by 19ft., near the public entrance in Corn Exchange-road; the chamberlain's private and public offices, with strong-room, are placed in the base of the tower; to the east of the public entrance are grouped the electricity department, public office, and private room for sanitary engineer, and, communicating with this department, but with a side door to the courtyard, are rooms for medical officer and health visitor; the reception-room is 41ft. by 16ft., facing Corn Exchange-road. First floor.—The council chamber is 41ft. by 30ft. wide and 24ft. high to the arched ceiling. A small gallery for the public is arranged at the end opposite the chair. The light is obtained from three large windows in the Corn Exchange-road wall. The committee room adjoining is 25ft. by 24ft., with an oriel window projecting over the council entrance. The rooms for council cloaks, lavatory, etc., are in a wing projecting into the courtyard. The corner of the first floor is occupied by the town clerk's office and private room; adjoining this are the provost's room, in the tower, and a room for the town's officer.



NEW MUNICIPAL BUILDINGS, STIRLING: FIRST FLOOR PLAN.



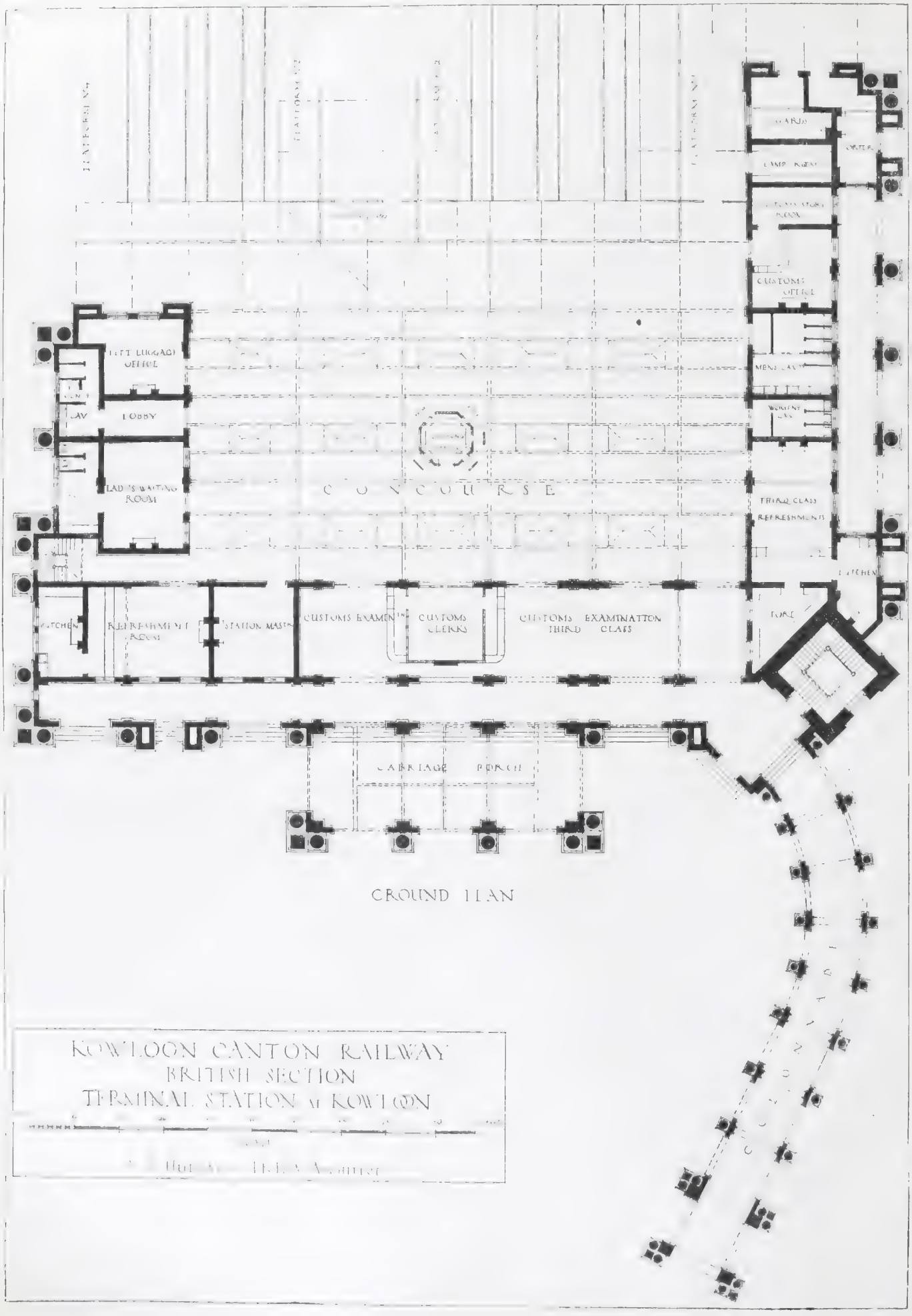
NEW MUNICIPAL BUILDINGS, STIRLING: GROUND PLAN.
Mr. J. GAFF GILLESPIE, F.R.I.B.A., Architect.

Second floor—The master of works' department occupies the second floor, and the remainder of the Corn Exchange front is not carried over the first floor. Third floor—The officer's house of three rooms and kitchen occupies the third floor, and the flat concrete roof over the staircase could be used as a drying space in connection with the washhouse provided. The upper stories of the large tower are fully utilised as council stores. A hose-drying room could be formed in the height of this tower, also balconies at intervals on the courtyard side, to be used by the firemen in practice with the scaling-ladders. Space for an electric lift is given. The walls in general to be warm-coloured sandstone from Blackpasture quarry. The design is based on Scottish architecture of that period when the finest palaces and castles were built with simplicity and strength in the mass, and a hint borrowed from France in the detail. The roofs will be covered with stone slates, part from Yorkshire and part from Caithness. The perspective view accompanying these notes shows the buildings somewhat foreshortened and as seen from the Back Walk end of Corn Exchange. When completed the block will include the fire station and police buildings. Only the portion to the left of the central doorway will be erected at present, as already described. The view from King-street when the whole scheme is carried out will show not only a well-balanced pile of buildings, but an eminently picturesque group, in which the tower will play a most important part, adding, as it does, much dignity to the skyline of this capital addition to the corporate architectural works of Stirling.

DETAILS, HAILEYBURY BIG SCHOOL.

Last week we published the first sheet of working drawings selected for illustration of the Big School at Haileybury College. To-day we give the second double-page. The general drawings and plans of these buildings will be found illustrated in the BUILDING NEWS for August 23, 1912, when some particulars appeared. The work now is approaching completion. Messrs. John W. Simpson, F.R.I.B.A., and Maxwell Ayrton, A.R.I.B.A., of Gray's Inn, are the architects.

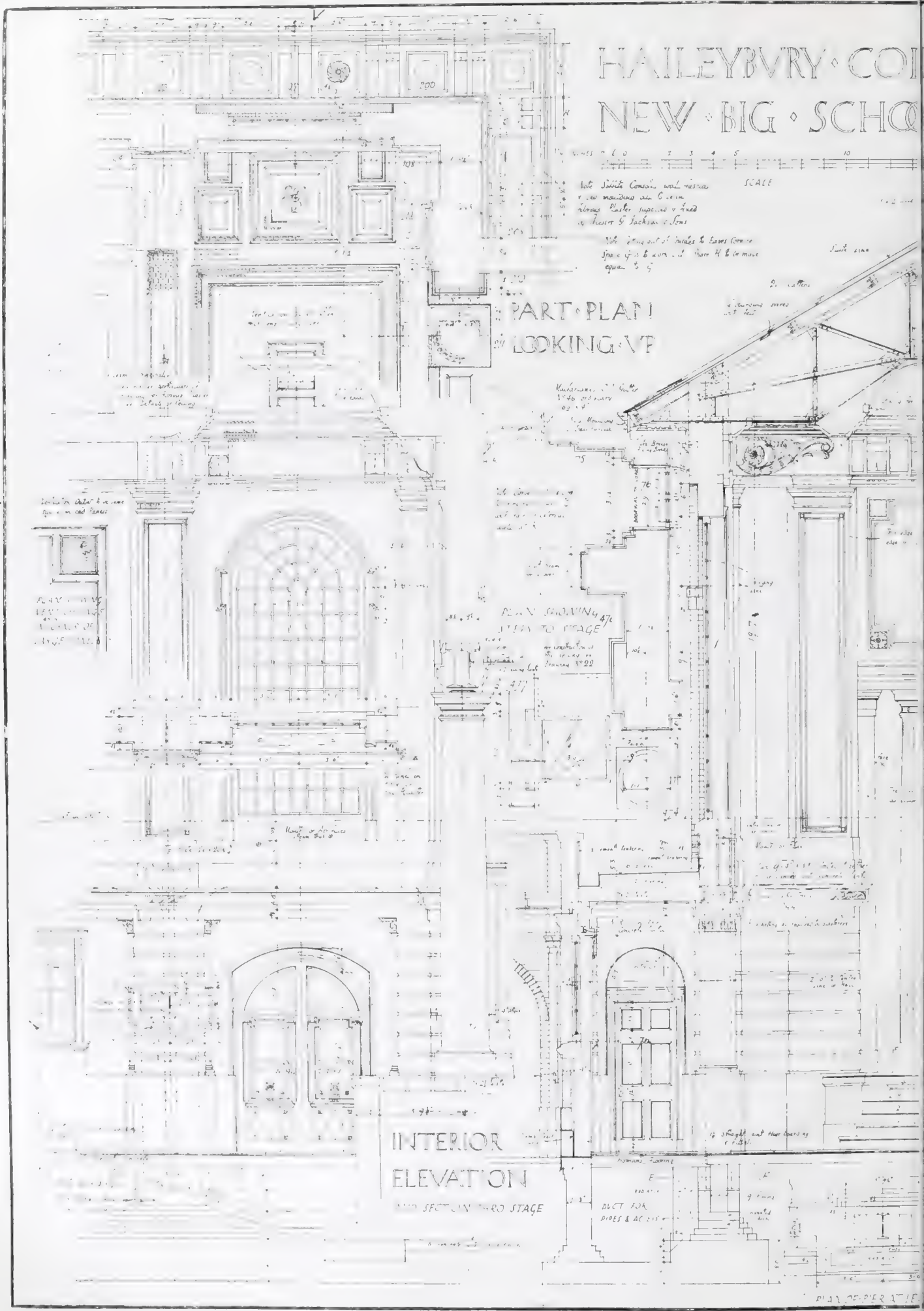
The Mayor of Coventry opened last week three branch free public libraries at Earlsdon, Stoke and Foleshill. The scheme was made possible by the gift of £10,000 by Mr. Carnegie. In each library there is a lending department, news-room and children's room. Each building, which is equipped with 12,000 books, will form a centre for school libraries.



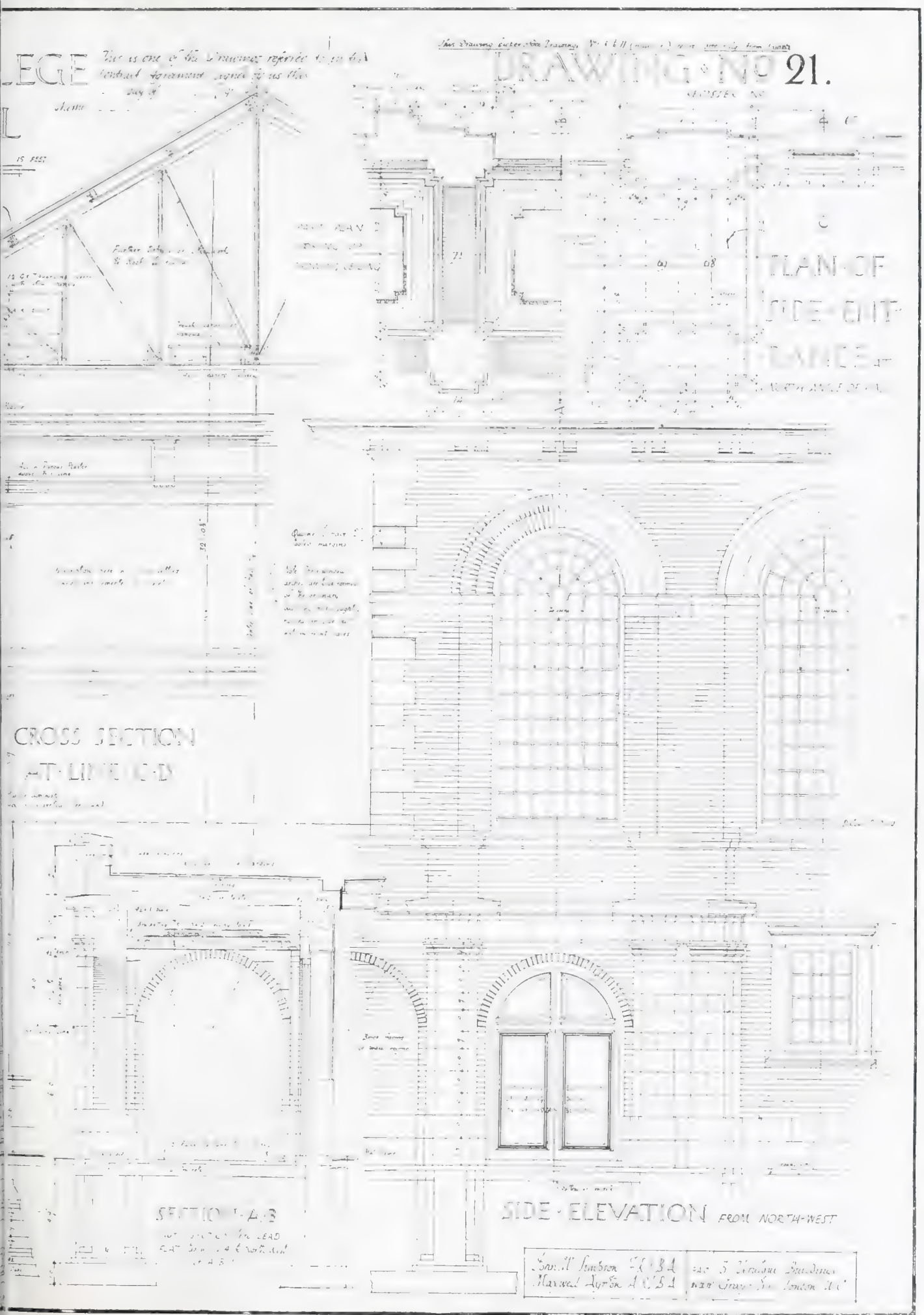
GROUND PLAN

KOWLOON CANTON RAILWAY
BRITISH SECTION
TERMINAL STATION at KOWLOON

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DETAILS. HAILEYBURY COLLEGE BIG SCHOOL.—Messrs.



V. Simpson. F.R.I.B.A., and Maxwell Ayrton. A.R.I.B.A., Architects,

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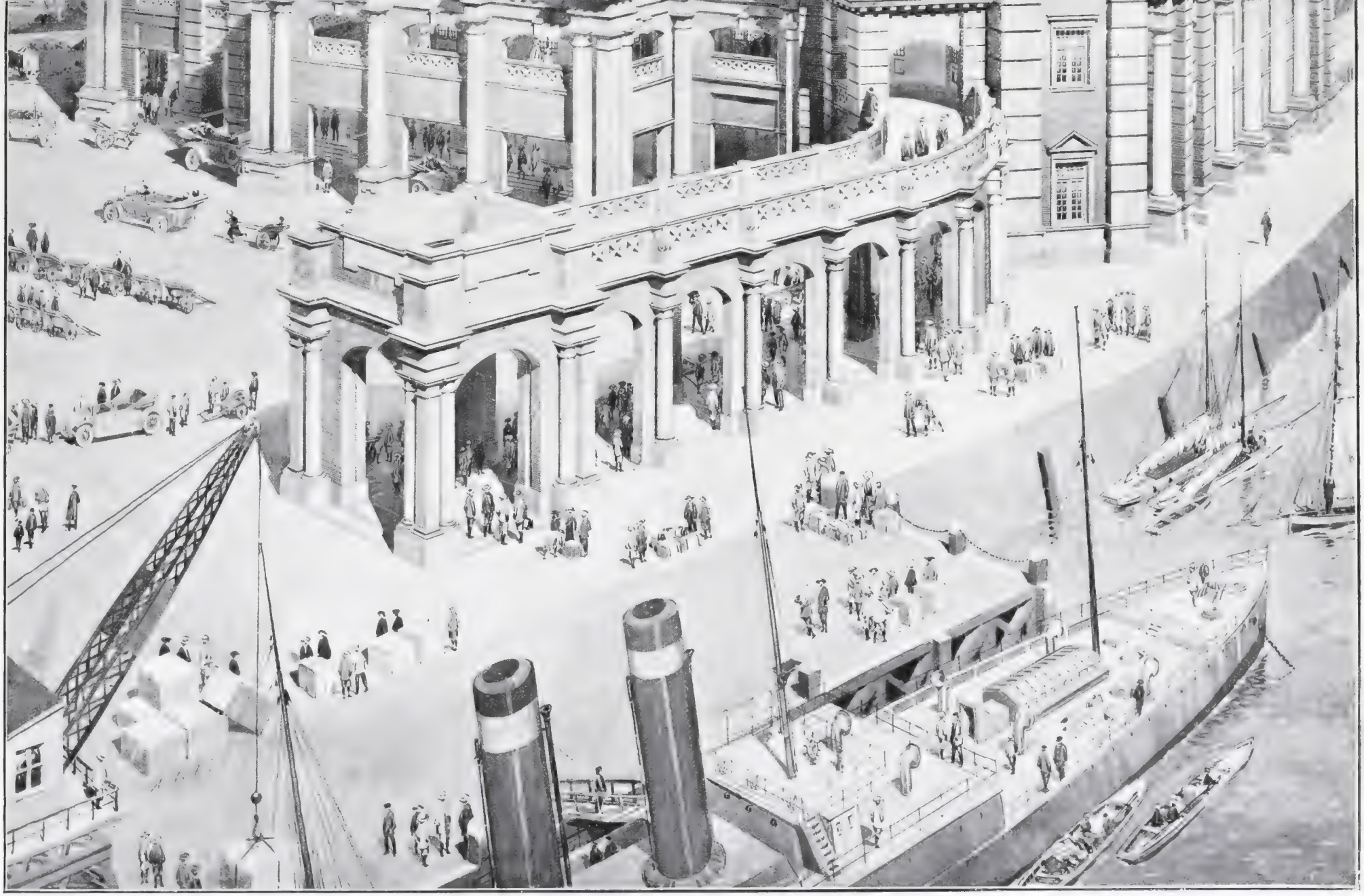




THE CANONS' STALLS, BRISBANE CATHEDRAL. MR. FRANK L. PEARSON, F.R.I.B.A., Architect

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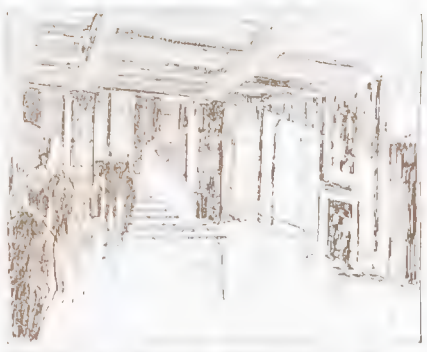


KOWLOON—CANTON RAILWAY. BRITISH SECTION. TERMINAL STATION AT KOWLOON.

Mr. A. B. Hubback, F.R.I.B.A., Architect.



NEW MUNICIPAL BUILDINGS, STIRLING.—Mr. J. Gaff Gillespie, F.R.I.B.A., Architect.





COUNCIL CHAMBER





NEW MUNICIPAL BUILDINGS, STIRLING.—Mr. J. GAFF GILLESPIE, F.R.I.B.A., Architect.

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UNIVERSITY OF TORONTO

Correspondence.

BLACKBURN NEW FIRE BRIGADE STATION.

To the Editor of the BUILDING NEWS

SIR,—I have inspected the designs submitted in competition for the above, and am forcibly struck with the following fact. Clause 6 of the conditions reads as follows:—

"Although the following instructions must be adhered to as far as possible, it is not intended to hamper the competitor with the exact enforcement of the points that are laid down. The competitor must, therefore, use a reasonable discretion in preparing his design."

A plan of the site with all levels is supplied to each competitor, and trial holes are sunk on the site to show the nature of the foundations at various points. The whole of the site within the red line is available for the purpose of these buildings, though if found possible to reserve a portion of the site, after providing an adequate drill yard, it would be considered a point in favour of the design.

Naturally, ten of the eleven competitors have gone for this "point," in many cases to the sacrifice of other advantages, and it seems strange that the only competitor to ignore the above suggestion, and utilise the whole of the site, has been awarded first premium. Why not have left the matter optional?—I am, etc., INTERESTED.

The town council of Leigh, Lancs, are applying to the Local Government Board for sanction to borrow £25,556 for the erection of 120 cottages.

Mr. Herbert D. Searles-Wood, F.R.I.B.A., President of the London Architectural Association in 1888-89, has been elected Master of the Painters' Company.

The *Irish Builder* mentions that the Right Hon. Sir Edward Carson is the son of the late Mr. Edward Carson, architect of Harcourt-street, Dublin.

The Stockport Town Council decided on Friday to purchase for £5,000 the Woodville estate, Reddish, in order to provide hospital accommodation for consumptive patients.

The Kalendar of the Liverpool Architectural Society has just been issued in anticipation of the opening meeting of the sixty-sixth session, to be held on Monday week, November 10, when the inaugural address will be delivered by Mr. Hastwell Grayson, M.A., F.R.I.B.A., the president.

Application has been made to the town council of Winnipeg for a permit for the Manitoba new Parliament buildings. The plans involve an estimated expenditure of £571,950. We illustrated the selected design, by Mr. Frank W. Simon, F.R.I.B.A., in our issue of September 27, 1912.

The new Prudential Assurance Company buildings at the junction of Hall Gate and Silver-street, Doncaster, have been formally opened. The architect was Mr. Paul Waterhouse, M.A., F.R.I.B.A., Staple Inn Buildings, London, and the contractors were Messrs. C. Sprakes and Son, of Doncaster.

At the Nottingham Corporation gasworks at Radford, an installation of continuous carbonisation in vertical retorts will be inaugurated to-day (Friday). With forty-eight retorts, arranged in six beds, it has cost £26,000, and is part of a larger scheme which will involve a total outlay of £50,000. The retorts have been placed in the old retort-house, the walls of which have been raised from 20ft. to 40ft.

The corporation of Southend-on-Sea have resolved to apply to the Local Government Board for sanction to borrow £866 for widening Southchurch-avenue, £275 for making up and paving the northern end of North-street, Prittlewell, £4,336 for making up Eastwood-lane, and £875 for widening Hadleigh main road. Private street works will be carried out at Silverseadrive, Imperial-avenue, Southchurch-esplanade, Fairfax-drive, Quebec-avenue, and Tyrrell-drive.

At Sheffield, on Tuesday, two memorials to King Edward were inaugurated. A bronze statue of his Majesty has been erected in Fitzalan-square, and an institution provided for the treatment of crippled children. The statue, 10ft. high and standing on a 15ft. pedestal, is the work of Mr. Alfred Drury, A.R.A. The late King is represented in the uniform of a Field-Marshal, wearing the Order of the Garter and a cloak. The cripples' home, the site for which was given by the Duke of Norfolk, is situated in the Rivelin Valley.

Intercommunication.

GUINEAS FOR BEST REPLIES.

We offer a prize of one guinea every week for what we deem the best reply to any query appearing in the columns, which we deem worth insertion.

Replies must be sent in over real name and address. No other can receive a prize. The Editor's judgment is final.

This competition is restricted to buyers of the paper, and with each reply a coupon cut from our front page must be enclosed.

Any number of replies can be sent, but a coupon of this date must accompany each.

All else being equal, brief replies will stand the best chance. We emphasise this, as some correspondents ignore the fact that queries want terse facts, not long essays. Any necessary illustrations must be in line only—no tints or washes—at about twice the size they are meant to be reproduced. We are unable to avail ourselves of replies that contain illustrations unless we receive them by first post on Tuesdays.

The right to withhold the prize in the event of no reply being received worthy of it is reserved by the Editor, who also claims the right to publish any other replies he may deem useful.

QUESTIONS.

[13133.]—CARRYING CHIMNEY BREAST.—I have to carry a chimney-breast over the centre of a room, 25ft. wide, 55ft. long, and 13ft. high, the approximate weight of which is 25 tons. Broad flange girders will support the same. The inner wall is of 9in. hard brickwork in cement mortar, and is stiffened by the chimney-breast of the large room under. There are no openings that need be considered in this wall. The outer wall will be of rubble masonry in lias mortar 2ft. thick. The stone being of a slaty nature is flat-bedded. The windows divide this wall into piers 9ft. wide. Reinforced concrete lintels will be adopted, so the piers will be connected at their heads. As expense is an object, I wish to avoid the cost of steel stanchions for reinforcing walls if possible. I forgot to add that the walls will be stayed at intervals of about 13ft. 6in. by the girders carrying the floor-joists; also that the footings will be taken down to the rock bottom. A practical reply will be greatly esteemed.—Builder.

[13134.]—STRONG-ROOM.—Having a temporary strong-room to build, shall be pleased to hear from BUILDING NEWS readers who have practical experience of such work—the most economical system. Size about 9ft. by 7ft., and 6ft. 6in. high.—An Old Subscriber.

[13135.]—REFUSE DESTRUCTOR.—Would any of your readers give figured sketches for a small destructor capable of dealing with a maximum of five tons of household refuse per day? It is not desired to utilise the heat for any purpose, nor the residue. The site is well above the town, and away from buildings, so that a tall chimney, on that account, is unnecessary. A simple form of furnace that can be cheaply erected, without skilled labour, is the point in view.—Country Town.

Mr. Bertie Crewe is the architect of the permanent circus to be built in the Euston-road, opposite King's Cross Station.

The name appears in the list of adjudications of George Castle, described as of Albemarle-street, Piccadilly, and Ashwood, Manor-lane, Lee, Kent, surveyor.

Architects who turn contractors do well to be sure about payment! With reference to our recent notice relative to tenders for a National Palace at Port-au-Prince, H.M. Chargé d'Affaires at that place reports that the contract has been awarded to Mr. G. Baussan, the Haytian architect who designed the building. He is now negotiating with the Government in order to obtain suitable guarantees for payment for the work.

The new stables at Nechells and Lifford which have been erected by the stables and refuse disposal committee of the Birmingham City Council for the accommodation of the corporation horses were opened on Friday. Provision has been made at Nechells for twenty-eight horses, and the cost of the building was £1,711; while at Lifford, where there is accommodation for forty-five horses, the cost of the stables and depot was £3,458.

The Cheshire coroner held an inquiry at Frodsham on Friday into the death of Thomas Stringer, contractor, of 231, Wilderspool-road, Warrington. Stringer visited Frodsham on the previous Wednesday to inspect operations at some sewage-work that he was carrying out for the Runcorn Rural Council at Netherton. He had been in the most cheerful spirits all the morning. Mr. Hallbrooke, a farmer, of Kingsley, told the coroner that Stringer had only just said to him, "Oh, I am up to the knocker!" when he fell on his knees, and then on to the station platform, where they were standing. A doctor attributed death to sudden failure of the heart. A verdict in accordance with the medical evidence was returned.

LEGAL INTELLIGENCE.

SUB-CONTRACTORS' POSITION UNDER AN ASSIGNMENT: A HARD CASE.—In the King's Bench Division, on Monday, before Mr. Justice Channell, the hearing was concluded of the action brought by Messrs. Babcock and Wilcox, Ltd., boiler manufacturers, of Renfrew, against the Metropolitan Water Board to recover a sum of £3,134, balance of the price of goods sold and delivered, or alternatively for money due under an agreement between the Thames Ironworks and Shipbuilding and Engineering Company and the defendants, which agreement the defendants said was assigned to them. The plaintiffs' case was that they sub-contracted with the Thames Ironworks and Engineering Company to supply the boilers at the new reservoir which the defendants were making at Walton-on-Thames. Later on, the Thames Company's interest in the contract, so far as affected the plaintiffs, was assigned to them, and they therefore claimed the amount in question under such assignment. The defendants admitted the amount, but said they had received notice from the Receive runder which all moneys due as between the Board and the Thames Ironworks were to be paid to him. They submitted that in this case, the plaintiffs being sub-contractors, they (the Board) had no power to pay them. His Lordship said the documents did not show there was an assignment, and plaintiffs had therefore no right to receive the money. The grievance arose in this instance from the operation of the bankruptcy laws, and was one in which he could give no relief. There must be judgment for the defendants, with costs.

IN RE H. ST. JOHN DIX.—The public examination of Mr. Henry St. John Dix, who was adjudged bankrupt on September 26, described as of Buccleugh House, Richmond, and lately carrying on business under the style of Pethick, Dix, and Co., contractors, Victoria-street, Westminster, took place before Mr. Registrar Hood on Thursday in last week. A statement of the bankrupt's affairs had been filed showing gross liabilities amounting to £71,146, of which £39,752 was expected to rank for dividend, and assets £50,628, including a concession for a railway in Hungary, valued at £40,000. The examination was adjourned until December 18.

THE LUMSDEN CASE TO BE CARRIED TO THE HOUSE OF LORDS.—The Land Union have decided to carry the "Lumsden case," involving an alleged anomaly under the new land taxes, to the House of Lords. It will be remembered that Mr. Lumsden, a Newcastle-on-Tyne contractor, in 1909 built a shop an land which he had then recently purchased. The buildings and land were subsequently valued at £625. In 1910, about three months later, he sold the house and land for £750. He was thereupon served with notice that the increment was £125, and duty of £22 was claimed. He gave notice of objection, and the Referee decided in his favour, and the case being carried by the Tax Commissioners to the High Court, and then to the Court of Appeal, the decision of the Referee was reversed. The material point was that it was stated in evidence, and accepted by the Crown, that the site had not altered one halfpenny in value. It was contended on behalf of Mr. Lumsden that to impose increment duty was practically to levy an additional income-tax of 4s. in the £ on a portion of the profits a builder might legitimately make in the course of his business. In the Court of Appeal, Lord Justice Swinfen Eady, who dissented from the other two Judges who heard the case, said that when the actual price had been ascertained, it was unreasonable to attempt to guess what the land might erroneously have been expected to realise, and he added that he could find no justification in the statute for the contention that, whenever the price realised was greater than would have been reasonably expected, the whole of the excess in price was to be deemed to be an increment in site value. The Master of the Rolls, in his judgment, stated that he was aware that the construction he felt driven to adopt had the effect of taxing builders' profits, and he added: "It is not for me to consider the policy of the Act."

PICTURES IN CHURCHES.—The Chancellor of the Diocese of London (Sir Alfred Kempe) delivered judgment at a Consistory Court at St. Paul's Cathedral, on Friday, in the case of a petition brought by the rector of Hayes, Middlesex, and one of the churchwardens, for the granting of a faculty to confirm the action of the rector in placing a small copy of Albrecht Dürer's "Crucifixion" on a column in the parish church, immediately adjoining the pulpit. The application was opposed by Mr. George Fulford, the other churchwarden, who asked that a

faculty might be granted for the removal of the picture. The Chancellor said that the introduction of sacred pictures into churches had not been sanctioned by authority, and no one had any right to condemn conscientious objections to them. The petitioners had failed to satisfy him that any desire for the picture existed, and the adverse vote at the vestry must not be disregarded. He declined to grant the confirmatory faculty, and a faculty authorising the rector and churchwardens to remove the picture was decreed. The petitioners were ordered to pay the opponents' costs.

LIVERPOOL DECORATOR'S FAILURE.—At the Liverpool Bankruptcy Court, on Monday, the public examination took place, before Mr. Registrar Cooper, of John Muir, who had traded at 33, Hardman-street, Liverpool, under the style of Muir and Company, as a painter, decorator, and plumber. The liabilities were returned at £1,793 15s. 7d., with assets of £74 15s. 2d. Replying to the Official Receiver, he said that in 1900 he commenced business in partnership with Mr. H. E. Cubley at 11, Hardman-street, under the style of Muir and Cubley, each partner putting into the business £200. The debtor had previously been a painter's manager, and the £200 represented his savings. The partnership was dissolved at the end of 1907, Mr. Cubley taking over the assets and liabilities and paying the debtor £330. In the following January the debtor began business on his own account at 33, Hardman-street, under the style of Muir and Company, having as his capital the £330 received from his late partner. The debtor ascribed his failure to bad trade, to lack of capital, to the illness of his wife, and to law costs attendant upon a considerable number of writs issued by creditors. He acknowledged that he had been aware of his insolvency for some three years past, and that he had subsequently contracted debts. His explanation was that he had hoped the business would improve. The examination was adjourned to November 10, to allow of an amended statement being put in.

The Yorkshire Archæological Society is celebrating its jubilee this year, and a very successful celebration dinner was held in the De Grey Rooms, York, on Thursday night.

Leck Church, Kirkby Lonsdale, where the Brontës used to worship, was completely burnt out last week. Messrs. Austin and Paley, architects, of Lancaster, are preparing plans for rebuilding the edifice from the foundations.

To the adult school erected a year ago in Stanhope-row, St. Albans, Mr. F. O. Salisbury, R.B.A., has presented a decorative panel, painted by himself, entitled "Aspiration." The panel fills a semicircular space at the back of the rostrum in the upper room of the building.

The yearly meeting of the Court of Governors of the National Museum of Wales, in Cardiff, on Friday, was informed that an additional £70,000 in contributions is necessary before the Treasury grant can be secured. The accepted tender of Messrs. Henry Willcock and Co., Wolverhampton, for building the shell of the southern block, including the principal elevation, amounts to £65,895.

The following have been appointed representatives of the University of Manchester on the advisory committee of the Manchester School of Architecture:—The Vice-Chancellor, Mr. Cheetham, Dr. Schuster, Professor Tait, and Mr. P. S. Worthington. The newly-appointed representatives of the local Society of Architects on the advisory committee are Mr. John Brooke, F.R.I.B.A., the president, and Mr. Paul Ogden, F.R.I.B.A.

Sir Aston Webb's new façade to Buckingham Palace having been completed by Messrs. Leslie and Co., the King has arranged for a commemorative dinner to be given to all workmen in the employ of the contractors who were engaged for three weeks or upwards at the Palace. The dinner takes place this (Friday) evening at the King's Hall, Holborn Restaurant, and it is expected that nearly 500 workmen will be present. The Hon. Sir Derek Keppel, Master of the Household, will, it is understood, preside.

The death occurred on Friday night, at his residence in the Strathbungo district of Glasgow, of Mr. Hugh Mayberry, property and estate agent. A native of Drumore, Wigtownshire, Mr. Mayberry was 69 years of age. As a house and property valuator he had an extensive connection, and he represented, among other properties the Blantyre and Barrowfield estates. He formerly acted as arbiter for two of the railway companies. A good many years ago Mr. Mayberry was a member of the town council.

STATUES, MEMORIALS, &c.

KING EDWARD MEMORIAL.—A meeting of the advisory committee of the King Edward Memorial Fund was held on Wednesday at the Mansion House. Alderman Sir Vezey Strong presided. Among those present was Mr. Leonard Stokes, Past-President R.I.B.A. The fund was reported to amount to £76,126, exclusive of certain promised donations which would bring up the total to £112,000. £70,000 was the estimated cost of the purchase of Shadwell Market from the corporation; £10,500 the expense of the erection of King Edward's statue, by Mr. Bertram Mackennal, A.R.A., with pedestal, in Waterloo-place; and £15,000 the cost of the river-wall protecting the park from the river. The cost of laying out the market site has yet to be ascertained. It was computed that to meet all requirements a sum of about £25,000 would have to be raised. A plan of the river-wall and frontage at Shadwell, prepared by the firm of Messrs. Rendel, Palmer, and Tritton, civil engineers, who had consented to act as honorary engineers to the committee, was submitted and approved. It was decided to take steps to obtain a plan and estimate for the laying out of the Shadwell site as a park, of which the wall in question is to be the river boundary, and to consider them at the next meeting of the committee. Mr. Edwin Lutyens, A.R.A., had consented, in an honorary capacity, to advise the committee on the architectural features of the scheme.

The City Corporation are about to spend £2,243 on works and furniture at the Mansion House, including the redecoration of the saloon, vestibule, and main entrance, and the restoration of antique furniture.

A new council school at Lisvane, Glamorgan, has been formally opened. The architect was Mr. D. Pugh-Jones, the county architect, and the contractor was Mr. John Makin, of Cardiff. The cost has been £1,650.

At Wednesday's meeting of the Stepney Borough Council the mayor stated that the subcommittee on office accommodation was considering sites in the borough for the purpose of erecting a new town-hall and municipal offices.

Mr. A. H. Brightmore held an inquiry at the town-hall, Ilkley, on Tuesday, in respect to the Ilkley Urban District Council's application to the Local Government Board for sanction to borrow £9,500 for purchasing and laying-out for pleasure-ground purposes 44 acres of land in the Middleton township known as "The Holmes."

The borough engineer of Folkestone, Mr. E. A. Nicholls, has presented to the town council a scheme for the prevention of floodings in the affected areas of the town. The work, he estimates, will involve an expenditure of £20,000. After a long discussion, it was decided to call in an expert to express an opinion on the proposals.

At a meeting of the Belfast Harbour Board it was decided to erect new wharves and jetties in the Musgrave Channel, close to the Queen's Island, at a cost of £45,000. This is in addition to the construction of the new deep-water wharf decided upon some time ago, at a cost of between £70,000 and £80,000. The harbour engineer is Mr. Kelly, of Belfast.

The Secretary of State for India in Council has appointed the nine undermentioned gentlemen to be assistant engineers in the Indian Public Works Department, in addition to the twenty-three gentlemen appointed in June last: Messrs. W. E. Bushby, W. G. Came, T. F. Carter, F. E. Cormack, W. A. Evershed, G. W. Maunsell, B. St. J. Newton, J. B. Nottage, B. L. Subarwal.

The fine arts committee of Brighton Municipal Art Gallery have purchased for the permanent collection a painting, "Flare and Flutter," by Mr. Arthur Hacker, R.A., a work which shows Piccadilly-circus by night. They have also acquired "The Chinese Fan," a study of a Chinese lady, by Mr. Howard Somerville. The director of the gallery, Mr. Henry D. Roberts, is visiting Madrid to arrange for the exhibition of modern Spanish art to be held next spring at Brighton.

A new Roman Catholic church at Lostock, Hull, has been opened by the Bishop of Salford. It is Gothic in style, and is built of brick and Rainhill stone, from the designs of Mr. D. Powell, of Liverpool. It has a seating capacity for 400 people. The belfry rises to a height of 70ft., and below is a niche which, if desired, can be used for statuary. The floors are of red tiles in the transepts, and pitchpine in other parts of the building. The windows are of stone tracery, with pointed heads, filled with lead glazing. The cost has been £4,500.

Our Office Table.

We reported last week an appeal against the Commissioners of Inland Revenue valuation of land near Trinity square, E.C., recently acquired by the Port of London Authority, on the ground that the estimate of gross value was quite inadequate, as the vendor will be mulcted in nearly £950 duty, one fifth of the assumed increase in the worth of the property in a single year. On the other hand, auctioneers and estate agents state that the Government valuations are frequently absurdly high, and that they cannot obtain in the open market any approximation to the sum at which properties have been assessed for probate duties. A case in point is an area of 27 acres of undeveloped land at Sharnbrook recently offered at auction by Messrs. J. R. Eve and Son, at Bedford. The upset prices of the lots were based on the valuations rendered by the Commissioners under the Finance Act, 1910. Full details of the negotiations between the authorities and the owner in arriving at the official figures were set out in the Particulars of Sale. Lot 1, offered at £2,023, was withdrawn at £250, and lot 2, at an upset price of £730, also remained for private treaty at the last bid of £150.

H.M. Office of Works has decided to preserve intact, in arranging the conditions of competition for the new Board of Trade Offices to be built in Whitehall gardens, one of the few remaining portions of the old Palace of Whitehall. The apartment, which has a low vaulted roof, is dubiously claimed to be the wine-cellar of Cardinal Wolsey, and at present it forms part of the refreshment department at Whitehall gardens. It is clearly figured in Fisher's ground plan of the Royal Palace of Whitehall, published in the reign of Charles II., and is situated immediately behind the Great Hall, in close proximity to the pantry, the kitchen, and other offices. At the instance of Lord Beauchamp's department, a portion of the wall was laid bare some time ago, with the result that the original brickwork was found to be in perfect condition, while further investigation behind the rude stucco was the means of bringing to light the Cardinal's arms carved in stone. It was from Whitehall Stairs that Wolsey entered his barge and was rowed to Esher after his disgrace at the hands of Henry VIII., at which period the Palace passed into the possession of the Crown.

M. Delanney, Prefect of the Seine, has elaborated an ambitious scheme for the enlargement and development of Paris, and the provision of the public gardens so much needed, which, if adopted by the Municipal Council, will involve changes approaching in magnitude those effected by Baron Haussmann under the Second Empire. M. Delanney's scheme proposes to extend the limits of the capital so as to include all the suburbs which cluster round the circuit of the fortifications, and to efface the long-dismantled inner fortifications which have choked the growth of the city. The extension of the municipal boundaries is suggested to an average distance of about four miles from the present walls, enlarging the area of Paris by sixfold. The main purpose is to provide more light and air for the overcrowded population by forming new open spaces. At present Paris possesses some 2,000 acres of avenues planted with trees and rather more than 500 acres of public gardens, without counting the Bois de Boulogne and the Bois de Vincennes, which lie outside the fortifications. It is now proposed to augment these open spaces by the construction of some fifty gardens scattered about the capital, covering an area of 275 acres. The suppression of the fortifications and military zone would provide 1,500 acres of parks and playing fields. Barracks, hospitals, and markets are to be banished to the outskirts of the city. It is further contemplated that fifty miles of new thoroughfares should be planned and 225 miles of existing streets increased in width.

During some works of repair now in

progress at Great Bookham Church, Surrey, under the superintendence of Mr. Philip M. Johnston, F.S.A., F.R.I.B.A., of London, two little windows dating from the latter part of the 11th century have been discovered and opened out. They occur in the spandrels of the north arcade of the nave, which arcade was pierced through the original external north wall to form an aisle about 1180. The windows were then blocked up, and one of them, the easternmost, on being opened out, was found to be completely covered with elaborate coeval painting, in patterns of box pleating, zig-zags, and bands, which, owing to its having been walled in for over 700 years, is almost as fresh as when it was executed. It is hoped that careful search will bring to light more paintings, and, perhaps, other blocked-up windows. The little painted window is one of the best and most perfect examples of its date and type that can be seen anywhere. Great Bookham Church was a possession of Chertsey Abbey, whose great building abbot, John de Rutherwyk, rebuilt the chancel in 1341, as is attested by the dedicatory inscription cut in a stone in the east wall.

Mr. W. D. Caröe, M.A., F.S.A., who is Master this year of the Plumbers' Company and architect to the Ecclesiastical Commissioners, recently addressed a meeting in Glasgow on "The Work and Responsibility of the Plumber in Modern Times." He maintained that something more than the registration of plumbers was needed to insure complete efficiency. Something was required to fix responsibility, if only in order to assert proudly the skill and efficiency of the workman. He advocated a system of marking the work done, so that each man's work might be identified by his own registered number. That would be a sufficient guarantee of soundness. The work of the plumber had increased vastly in quantity and complexity, and his responsibility had increased proportionately. Craftsmen should claim, he held, the privileges of the craft in which they were employed, and qualify for registration; architects and public authorities should give a preference to registered plumbers; the system of marking should be adopted in all public and private works; the General Council for the National Registration of Plumbers should, when funds permitted, employ a paid organiser to visit the various centres in turn, and assist local secretaries; local education authorities should provide technical and practical instruction in harmony with the registration scheme; and apprenticeship should be encouraged. Subsequently the General Council passed a series of resolutions to the same general effect.

A good exhibition promoted in the Zoo Buildings by the Electricity Department of Glasgow Corporation was opened by the Countess of Glasgow on the 23rd inst. Lord Provost D. M. Stevenson, who presided, said there had been a number of exhibitions connected with gas and electricity as applied to lighting and heating, but that was the first exhibition in the city at which electricity formed the sole subject. It was most appropriate, as that was the twenty first anniversary of the foundation of the corporation electricity department. They were anxious that electricity should be used as much as possible, in order that the smoke from factories and domestic fires might be got rid of. The Countess of Glasgow, who was received with applause, said there was no doubt whatever that the universal use of electricity for domestic and industrial purposes would be the solution of the smoke problem in great cities. That is undoubtedly true, and it is a pity more up-to-date authorities like Glasgow and West Ham do not exert themselves to hasten the time.

The Council of the Royal Institute of Public Health announce that they have accepted the offer made to them by Professor William R. Smith, M.D., to present annually a gold medal of the value of £20, "for conspicuous services rendered to the cause of preventive medicine within the British Empire." It is intended that eligibility for the award shall be confined to medical officers of health or other medical officials—naval, military, or civil—within the British Empire, Overseas Dominions, or spheres of British influence, discharging public health duties connected with the State; and that such award shall be made to the official who, in the opinion and upon the nomination of a special committee, shall have rendered the most valuable services in any department to the cause of the public health—the publication of any notable contribution to the literature of the science receiving in addition full consideration in the bestowal of the award. It is proposed that the first award shall be made in 1914. We hope others will follow Professor Smith's example and enable the Royal Institute similarly to stimulate others in kindred fields of service and research. The Royal Institute is the recognised corporate body of sanitary science and the one really representative of the vital interests it so well watches and promotes.

The Cambridge University Press is publishing in six parts, at 1s. 3d. each, or the whole series complete for 6s., a very useful series of drawings by Mr. W. R. Jaggard, A.R.I.B.A., of "Architectural and Building Construction Plates," prepared by the author as a basis for a series of lectures, and covering an elementary course. The work includes clearly- and accurately-figured drawings of all details of brickwork, excavation, masonry, carpentry, joinery, roof-coverings, plumbing, standard steel and iron sections, etc. Teachers will find the plates especially useful, particularly if supplemented by models made from the data given, and young architectural and building students will, we are sure, fully appreciate the series.

Messrs. Wm. Dawson and Sons, Ltd., Cannon House, Bream's-buildings, E.C., are issuing a most useful subscription price list, which will be of considerable value to many of our readers, putting them in touch with a reliable agency from whom they can obtain their British and foreign journals. Our papers are listed. Messrs. W. Dawson and Sons distribute 25,000 of these catalogues in all parts of the world, and we know they are much valued, especially abroad, by all who have applied for them.

"Mechanics for Builders.—Part I.," by E. L. Bates and F. Charlesworth (London: Longmans, Green, and Co., 3s.), is another excellent volume of Longmans' "Technical Handicraft Series." It is just the volume we should recommend against the day when all builders will have to pass a compulsory examination before being allowed to build, as has just been ordained by the civic authorities of the City of Boston, U.S.A. Very wisely, the book is not overloaded with the heavy cargo some teachers and textbook compilers insist on piling on to the back of the student, and the authors confine themselves to those principles of applied mechanics which are actually essential to the design and execution of work. Part I. covers a one evening attendance a week first year's course, and Part II. will cover a second year's course. Any intelligent student, however, will easily take both courses in a year, if he is in earnest and prepared to give reasonable time apart from that spent in class or laboratory.

American architects have an effective way of dealing with professional men who take part in competitions when the conditions are deemed to be unfair. At the recent monthly meeting of the San Francisco Chapter of the American Institute of Architects, Mr. Mooser, for the sub-committee on competitions, reported that a member of the Chapter, Mr. H. W. Ratcliff, had been announced as the winner in the competition held for the Berkeley Elks Hall, the programme of which had been disapproved by the Chapter. The secretary was directed to communicate with Mr. Ratcliff, advising him that his participation in an unauthorised competition had been brought to the attention of the Chapter.

There is coming into use in Germany a cheap and ready method of asphalting a stone-paved street which is showing good results. The spaces between paving blocks are cleaned out to the depth of about an inch, and then a layer of melted asphalt is flowed over the street surface, the depth of the layer being about 1in. Before it is cooled, sand is sprinkled on and the surface is smoothed. At Frankfort a section of this kind is now laid, and it appears to stand the wear remarkably well. Should the method prove a success in general practice, it will afford an excellent means for deadening the noise of city traffic at a small expense. It is quickly carried out, and it need not stop the circulation on narrow streets for any length of time. Moreover, repairs are easily made.

Surface finish for concrete was given attention by the Board of Water-Supply of the City of New York in connection with bridge construction on the Catskill aqueduct, and of several methods examined for securing even, clean textures the use of selected aggregate of pink granite for mortar facing was successful in special cases, according to the board's annual report. The mixture was poured by the aid of a sheet-iron diaphragm, moved as the backing was poured, the facing and backing being thus placed as a monolith. Experiments showed that the most practical ways of treating concrete surfaces were by pneumatic hammers and by sandblasts.

Some twelve months ago the New South Wales Government carried out a scheme of State housing in the form of a garden city of workmen's dwellings in a suburb of Sydney. The report of the Housing Board on the project has just been received. The Board speaks well of the first year's experience of the scheme. The land allowed to each dwelling is liberal, varying from 38ft. to 45ft. frontage, with an average depth of 133ft. There are no front fences; there is merely an ornamental kerb, and there is a wire dividing-fence between each garden. The rents charged by the Government are from 15 to 20 per cent. cheaper than those charged by private landlords for similar accommodation in suburbs about the same distance from the centre of the city. The cottages are lighted throughout by electricity and gas laid on for cooking purposes. The cottages are constructed of bricks from the State kilns of the New South Wales Government. Over 600 applications were received for the houses within the time fixed, and since then a further considerable number have been sent in.

A public document, recently issued by the American Senate, describes works of art in the United States Capitol at Washington. Nearly 140 paintings and 120 pieces of sculpture have been catalogued. This valuable accumulation represents portraits by the most famous American painters, from the days of John Singleton Copley down to artists of the present generation, while historical painters whose works are in this collection are men who have added the highest lustre to American art. It is significant that the greater part of the collection has been acquired by gift from private individuals interested in the preservation of the historical, biographical, or pictorial art of the nation, and but a small portion by gifts from the various States or by actual purchase by the Government. At the present time there is no specific appropriation available for the purchase of works of art.

Australia is, according to a note from the High Commissioner, taking up the question of irrigation seriously. A conference of engineers representative of the Australian States through which the River Murray passes, was recently held to consider the question of the control and distribution for irrigation purposes of the water running along that course. It was then stated that there were five million acres suitable for irrigation along the Murray and its tributaries in New South Wales. This comprised first- and second-class land bordering the Murray, the Murrumbidgee, and the Darling rivers. Victoria required water to irrigate one and a half million acres, and South Australia had about two million acres. So that, given an adequate water-supply in the three States, there were over eight million acres of land in proximity to the main waterway that might be used to settle many thousands of settlers. The engineers, representing New South Wales, Victoria, and South Australia,

estimated the cost of their scheme to make the maximum amount of water available for navigation and irrigation purposes at £6,117,000. The appointment of a Board of Control is urged. The supply of water to the three States is to be regulated by locks and weirs.

MEETINGS FOR THE ENSUING WEEK.

FRIDAY (To-day).—Junior Institution of Engineers. "The Difference between a Drain and a Sewer," by Ronald Kelsey-Jones.

SATURDAY (To-morrow).—Institution of Municipal and County Engineers. Metropolitan District Meeting. Visit to the Houses of Parliament and to Tagg's Island, Hampton Court. 11 a.m.

MONDAY.—Royal Institute of British Architects. Opening Address by the President, Reginald Blomfield, A.R.A. 8.30 p.m.

Society of Engineers. "Accretion at Estuary Harbours in South of England," by Gerald O. Case. 7.30 p.m.

TUESDAY.—Institution of Civil Engineers. Address by Anthony G. Lyster, President, and Presentation of Medals. 8 p.m.

WEDNESDAY.—St. Paul's Ecclesiological Society. "Old Church Plate," by the Rev. E. C. Hopper, M.A. Chapter House, E.C. 8 p.m.

FRIDAY (Nov. 7).—Institution of Municipal Engineers. Annual Meeting, 4, Southampton-row, W.C., 12 noon. Presidential Address by Frank Latham, M.Inst.C.E., Penzance. 2.45 p.m.

Incorporated Institute of British Decorators. "Stencilling," by W. Stewart-Greene. Painters' Hall, E.C. 8 p.m.

Glasgow Architectural Craftsmen's Society. "Needle-Shoring," by D. S. Pringle; and "Underpinning," by Robert T. Anderson. 8 p.m.

Mr. R. P. Pearce, of Trowbridge has been appointed as surveyor to the Melksham Urban District Council.

Mr. Orson Wright, of South Wigston, Leicester, builder and contractor, who died on April 10, left £167,281, "so far as can at present be ascertained."

The General Board of Studies of the University of Cambridge will shortly proceed to appoint a University Lecturer in Surveying and Cartography. Particulars may be obtained of Professor Stanley Gardiner, Zoological Laboratory.

The foundation-stone of a new chapel, which is estimated to cost £850, has been laid at Whittonstall, Co. Durham. The architects are Messrs. Lamb and Knowles, of Newcastle-on-Tyne, and the contractors Messrs. Ayton, of Blackhill.

In the south transept of St. Anne's Church, Upperton-gardens, Eastbourne, a bronze tablet was unveiled on Saturday in memory of Captain Laurence E. G. Oates who accompanied Captain Scott on his Antarctic expedition, and went out to die in the blizzard.

The approval of the Local Government Board has been given to the town-planning scheme of the town council of Richmond, Surrey, one object of which is to preserve the amenities of the river frontage. The scheme will relate to an area of about 514 acres in the borough and in the urban district of Brentford.

At the Municipal Buildings, South Shields, on Tuesday, Mr. P. C. Ekin conducted a Local Government Board inquiry into an application by the corporation for sanction to borrow £33,305 for the purpose of carrying out certain extensions to the plant and buildings at the corporation's electricity works.

Messrs. Nicholas and Sproat, architects, of Vancouver, B.C., have put in a claim to the Winnipeg Board of Control for 800dol. for plans for a new city hall which they submitted during the recent open competition there. The plans did not win a prize, and while on their way back to the Vancouver firm were lost in transit by fire at Medicine Hat. The architects hold that the city is responsible.

Mr. F. O. Stanford, A.M.I.C.E., Local Government Board inspector, held an inquiry at Westbury on Thursday in last week into the application of the urban district council for sanction to a loan of £14,000, in order to carry out a sewerage scheme for the town. The scheme was presented by Mr. W. H. Radford, of Nottingham, the engineer to the council, who stated that, owing to the irregular surface of the district, there were great difficulties in the way, which would make the scheme a very expensive one.

Trade News.

WAGES MOVEMENTS.

SCARBOROUGH.—The operative painters, at a meeting held on Friday evening, decided to give notice to the employers for an increase in their wages from 7½d. to 9d. per hour from February 1, 1914. The operative plumbers of Scarborough have already served notice on the master plumbers demanding an increase from 8d. to 9½d. per hour, the notice to take effect in March next.

CHIPS.

At Manchester University, Mr. John N. Hollingworth has been appointed Assistant Lecturer in Electrical Engineering.

Mr. F. O. Stamford, A.M.I.C.E., has held a Local Government Board inquiry at Clevedon, Somerset, into an application of the urban district council for sanction to borrow £3,500 for works of sewerage at Green Beach.

Alderman Richard Hind, of Spring-street, Stockton-on-Tees, plumber and electrical engineer, twice mayor of the town, and Master of the Plumbers' Company in the City of London from 1902 to 1904, who died on July 14, aged 74, left £17,240.

The death occurred very suddenly on Thursday night, at Masham, of Mr. William Redfern Finlayson, painter and decorator, of The Square, Masham. Deceased, who was a native of Masham, was in his seventy-first year. He suceeded as a youth to his father's business over fifty years ago.

At a special meeting held on Friday, the Endowed Schools Governors of Southampton decided, after a long discussion, to purchase the Highfield Uplands site for the purpose of building a new Taunton's school, subject to the approval of the Board of Education. The site will cost £5,000, and the outlay on building the new school, for 400 boys, is estimated at £20,000.

The Church Institute in Hood-street, Newcastle-on-Tyne, was reopened on Tuesday by Mrs. Straton, wife of the Bishop of Newcastle. An extensive scheme of alterations has been carried out, the contractors being Messrs. W. Nicholson and Co., and the architect Mr. Charles S. Errington, Grainger-street West, Newcastle. The ground floor and basement have been entirely remodelled.

The funeral of Mr. William Henry Bolt took place in the Christ Church cemetery, Brentor, Devon, on Saturday. The deceased had been highway surveyor for the northern district under the Tavistock Rural District Council, succeeding the late Mr. John Northey some five or six years ago. Up to last Saturday week he had discharged his regular duties. Mr. Bolt was born at Sandford fifty-nine years ago, and was for many years highway surveyor under the Sevenoaks Rural Council, and returned to Devon for the benefit of his wife's health.

The new vicarage at Askrigg was opened by the Bishop of Knaresborough on Thursday in last week. It provides a sitting-room, dining-room, and study, all facing south, and eight bedrooms, approached by an oak staircase. The architects are Messrs. Connon and Chorley, Leeds, and the contractors—Mr. J. Pickard, Carperby, stonemason; Mr. W. H. Burton, Askrigg, joiner; and Mr. T. H. Kassell, Hawes, plumber. The site was given, and the cost of construction has exceeded £2,000.

The new Territorial headquarters in Clare-street, Northampton, were opened on Monday by Major-General Bethune, C.V.O., C.B., the Director-General of Territorial Forces. The premises occupy the site of the old Military Stores, which have been reconstructed from plans by Messrs. Talbot Brown and Fisher, of Wellingborough, the contractor being Mr. A. P. Hawtin, of Northampton. The new drill-hall is 140ft. long by 70ft. wide, and the riding-school is 150ft. by 56ft. In front of the building are offices and stores, two floors in height.

The 12th-century church of SS. Peter and Paul, West Clandon, the Surrey home of the Onslow family, was the scene of a serious fire on Monday, resulting in the complete destruction of the spire and considerable damage to the tower. The main fabric was saved, though the roof was damaged by falling débris, and the interior was badly flooded. The fire originated, from an unknown cause, in the belfry above the flint-faced tower, surmounted by a timbered spire 150ft. high, which had recently been renewed and recovered with oak shingle. Five of the six bells, rehung a few years ago, have been destroyed.

LATEST PRICES.

IRON.

Steel Joists, Belgian and German (ex steamer, London)	per ton	£6	2	6	to £6	5	0
Steel Joists, English		7	10	0	,, 7	12	6
Wrought-Iron Girder Plates		7	0	0	,, 7	5	0
Steel Girder Plates		7	2	6	,, 8	2	6
Bar Iron, good Staffs		6	5	0	,, 8	10	0
Do., Lowmoor, Flat, Round, or Square		20	0	0	,, 0	0	0
Do., Welsh		5	15	0	,, 5	17	0
Boiler Plates, Iron—							
South Staffs		8	0	0	,, 8	15	0
Best Snedshill		9	0	0	,, 9	10	0

Angles 10s., Tees 20s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £8 15s to £9.
Ditto galvanised, £11 to £15 10s. per ton.

Galvanised Corrugated Sheet Iron—

	No. 18 to 20.	No. 22 to 24
6ft. to 8ft. long, inclusive	Per ton.	Per ton.
gauge	£13 0 0	£13 10 0
Best ditto	13 0 0	14 0 0

Wire Nails (Points de Paris)—

3 to 7	8	9	10	11	12	13	14	15	B.W.G.
8/3	8 9	9/3	9/9	10/3	11/-	11/9	12/6	13/6	per cwt.

	Per ton.				Per ton.	
Cast-Iron Columns	£7	10	0	to	£9	0 0
Cast-Iron Stanchions	7	10	0	,,	9	0 0
Rolled-Iron Fencing Wire	8	5	0	,,	8	10 0
Rolled-Steel Fencing Wire	7	5	0	,,	7	10 0
,, ,, ,, Galvanised	8	15	0	,,	9	5 0
Cast-Iron Sash Weights	5	0	0	,,	5	5 0
Cut Floor Brads	9	15	0	,,		—
Corrugated Iron, 24 gauge	16	0	0	,,		—
Galvanised Wire Strand, 7 ply, 14 B.W.G.	14	5	0	,,		—

B.B. Drawn Telegraph Wire, Galvanised—

0 to 8	9	10	11	12	B.W.G.
£10 10s.	£10 15s.	£11 0s.	£11 5s.	£11 15s.	per ton.

Cast-Iron Socket Pipes—	Per ton.					
3in. diameter	£6	2	6	to	£6	7 0
4in. to 6in.	6	0	0	,,	6	5 0
7in. to 24in. (all sizes)	5	7	6	,,	6	0 0

[Coated with composition, 5s. 0d. per ton extra, turned and bored joints, 5s. 0d. per ton extra.]

Pig Iron—	Per ton.
Cold Blast, Lilleshall	110s. 0d. to 117s. 6d.
Hot Blast, ditto	70s. 0d. ,, 75s. 0d.

Wrought-Iron Tubes and Fittings—Discount off

Standard Lists f.o.b. (plus 2½ per cent.)—	75 p.c.
Gas-Tubes	72½ ,,
Water-Tubes	67½ ,,
Steam-Tubes	65 ,,
Galvanised Gas-Tubes	62½ ,,
Galvanised Water-Tubes	57½ ,,
Galvanised Steam-Tubes	

OTHER METALS.

Spelter, Silesian	Per ton	£20	10	0	to £21	0	0
Lead Water Pipe, Town		24	15	0	,,	—	
,, ,, ,, Country		25	10	0	,,	—	
Lead Barrel Pipe, Town		25	15	0	,,	—	
,, ,, ,, Country		26	10	0	,,	—	
Lead Pipe, Tinned inside, Town		26	15	0	,,	—	
,, ,, ,, ,, Country		27	10	0	,,	—	
Lead Pipe, Tinned inside and outside ..... Town		29	5	0	,,	—	
,, ,, ,, ,, Country		30	0	0	,,	—	
Composition Gas-Pipe, Town		27	15	0	,,	—	
,, ,, ,, Country		28	10	0	,,	—	
Lead Soil-pipe (up to 4½in.) Town		27	15	0	,,	—	
,, ,, ,, Country		28	10	0	,,	—	
[Over 4½in. £1 per ton extra.]							
Lead Shot, in 28lb. bags		24	15	0	,,	—	
Copper Sheets, sheathing & rods		91	0	0	,,	91	10 0
Copper, British Cake and Ingot		79	10	0	,,	80	0 0
Tin, English Ingots		187	15	0	,,	188	0 0
Do., Bars		188	15	0	,,	189	0 0
Pig Lead, in 1cwt. pigs (Town)		21	15	0	,,	—	
Sheet Lead, Town		24	5	0	,,	—	
,, ,, Country		25	0	0	,,	—	
Genuine White Lead		30	15	0	,,	—	
Refined Red Lead		25	0	0	,,	—	
Sheet Zinc		29	0	0	,,	—	
Old Lead, against account		19	5	0	,,	—	
Tin	per cwt.	10	10	0	,,	—	
Cut nails (per cwt. basis, ordinary brand		0	11	6	..	—	

TIMBER.

CONSTRUCTIONAL.

Yellow Pine Deals, Quebec, per standard:—	1st quality	£38	0	0	to £45	0	0
,, ,, ,,	2nd ,,	26	0	0	,, 32	0	0
,, ,, ,,	3rd ,,	16	0	0	,, 18	10	0
Spruce Deals: St. Johns		10	0	0	,, 11	10	0
,, ,, Miramichi		9	10	0	,, 10	10	0
,, ,, Boards: Swag		11	0	0	,, 12	0	0
Red Deals: Archangel 1st quality		21	0	0	,, 24	0	0
,, ,, ,,	2nd ,,	16	0	0	,, 19	0	0
,, ,, ,,	3rd ,,	12	0	0	,, 14	0	0
,, ,, St. Petersburg—							
,, ,, ,,	1st quality	16	10	0	,, 18	0	0
,, ,, ,,	2nd ,,	14	10	0	,, 15	10	0
,, ,, Wyburg & Uleaborg		12	10	0	,, 15	0	0
,, ,, Gefle, Gothenburg, and Stockholm		12	10	0	,, 17	0	0
White Deals: Crown		14	0	0	,, 15	10	0
,, ,, Seconds		11	10	0	,, 13	0	0
Flooring: White and Planed—							
1st and 2nd quality mixed		10	15	0	,, 11	15	0
1st, 2nd, & 3rd quality mixed		10	5	0	,, 11	0	0
Red Planed, 1st quality		14	10	0	,, 17	0	0
Pitch Pine: Prime Deals and Boards		18	0	0	,, 23	0	0
Lignum Vitæ	Per ton	7	0	0	,, 14	0	0

	Per cubic foot.					
Yellow Pine Logs (waney board)	0	5	0	,,	0	5 6
Pitch Pine Logs	0	2	0	,,	0	2 6
Birch: Quebec Logs	0	2	3	,,	0	2 9
Oak: Austrian Wainscot	0	7	0	,,	0	8 0
Mahogany: Gaboon	0	2	0	,,	0	2 3

FURNITURE AND HARDWOODS.

Teak: Burmese, per load, 50ft.	£20	0	0	to	£35	0	0
Teak: Java, per load, 50ft.	16	0	0	,,	21	0	0
	Per cubic foot.						
Oak Planks: U.S.A., imported	0	1	9	to	0	2	6
,, Boards ,, ,, Prm.	0	3	0	,,	0	3	6
,, ,, ,, ,, Mdm.	0	2	6	,,	0	2	9
Sequoia (Californian Redwood)	0	2	4	,,	0	3	6
Birch: Quebec logs	0	2	3	,,	0	3	9
,, ,, sawn planks	0	1	3	,,	0	2	0
Oak: Austrian Wainscot	0	7	0	,,	0	8	0
Walnut: Prime boards and planks	0	6	0	,,	0	6	6
Walnut: Mdm. ,, ,,	0	3	6	,,	0	4	6
Greenheart: Hewn logs	0	3	3	,,	0	4	0
Cedar: Cigar box	0	4	9	,,	0	5	6
Satin Walnut: Imp. sawn boards, prime	0	2	4	,,	0	2	9
Orham: Imp. sawn boards, prime	0	3	0	,,	0	3	3
Mahogany: St. Domingo, Cuba, and Honduras	0	6	0	,,	0	9	0
,, African, Assinee, &c.	0	5	0	,,	0	6	6
,, Lagos and Benin	0	4	6	,,	0	6	0
,, Sekondi and Cape Lopez	0	3	0	,,	0	4	0
,, Gaboon	0	2	0	,,	0	2	3
Satinwood: West Indian	0	10	0	,,	0	14	0
Rosewood Per ton	8	0	0	,,	12	0	0
Lignum Vitæ ,,	7	0	0	,,	14	0	0

STONE.*

Red Mansfield, in blocks per foot cube	£0	2	4
Darley Dale, ditto ,,	0	2	3
Red Corsebill, ditto ,,	0	2	4
Closeburn Red Freestone, ditto ,,	0	2	0
Ancaster, ditto ,,	0	1	10
Greenshill, ditto ,,	0	1	1 0
Chilmark, ditto (in truck at Nine Elms)	0	1	10½
Hard York, ditto ,,	0	2	0
Ditto ditto 6in. sawn both sides, landings, random sizes per foot sup.	0	2	8
Ditto ditto 3in. slab sawn two sides, random sizes ,,		1	3

* All F.O.R. London.

Bath Stone, delivered on road waggons, Paddington Depot per foot cube	0	1	7½
Ditto, ditto, Nine Elms Depot ,,	0	1	9½
Beer Stone, delivered on rail at Seaton Station ,,	0	1	0
Ditto, delivered at Nine Elms Station ,,	0	1	6

Portland Stone, in random blocks of 20ft. average:—

	Brown Whit Bed.	White Base Bed
Delivered on road waggons at Paddington Depot, Nine Elms Depot, or Pimlico Wharf	Per foot cube.	
	£0 2 3	£0 2 4½

SLATES.

	in. in.	£ s. d.	per 1,000 of
Blue Portmadoc	20×10	12 12 6	1,200 at r.stn
,, ,,	16× 8	6 12 6	,, ,,
Blue Bangor	20×10	13 2 6	,, ,,
,, ,,	20×12	13 17 6	,, ,,
First quality	20×10	13 0 0	,, ,,
,, ,,	20×12	13 15 0	,, ,,
,, ,,	16× 8	7 5 0	,, ,,
Eureka unfading green	20×10	15 17 6	,, ,,
,, ,,	20×12	18 7 6	,, ,,
,, ,,	18×10	13 5 0	,, ,,
,, ,,	16× 8	10 5 0	,, ,,
Permanent green	20×10	11 12 6	,, ,,
,, ,,	18×10	9 12 6	,, ,,
,, ,,	16× 8	6 12 6	,, ,,

BRICKS.

(All prices net.)

First Hard Stocks	£1	15	0	per 1,000 alongside, in	
Second Hard Stocks	1	11	0	,, ,,	river.
Mild Stocks	1	9	0	,, ,,	,,
Picked Stocks for Facings	2	5	0	,,	livered at rly. stn.
Flettons	1	10	0	,, ,,	,,
Pressed Wire Cuts	1	18	0	,, ,,	,,
Red Wire Cuts	1	14	0	,, ,,	,,
Best Fareham Red	3	12	0	,, ,,	,,
Best Red Pressed Ruabon Facing	5	0	0	,, ,,	,,
Best Blue Pressed Staffordshire	3	15	0	,, ,,	,,
Ditto Bullnose	4	0	0	,, ,,	,,
Best Stourbridge Firebricks	3	14	0	,, ,,	,,
2¾in. Best Red Accrington Plastic Facing Bricks	4	10	6	,,	Net, delivered in full truck loads in London.
" Accrington Best Red Plastic Facing					per 1,000
Bricks					£3 10 0
3⅛" ditto Second Best Plastic ditto					3 2 6
Ditto Ordinary Second Bricks					1 11 3
Ditto Plastic Engineering Bricks					1 17 6
Sewer Arch Brick not more than 3⅛" in thickest part					2 0 0
3⅛" Chimney Bricks fit for outside work					2 6 0
3⅛" ditto ditto through and through					2 0 0
3½" Beaded, Ovolo and Bevel Jambs; Octagons; 2½" and ½" radius Bullnoses; Stock patterns					3 7 6
Accrington Air Bricks, 9" × 2 course deep, each					0 0 6
Ditto ditto 9" × 1 course					0 0 3

Accrington Camber Arches:—

3 course deep, 4½" soffit, per foot opening						0	1 3
4	ditto	4½"	ditto	ditto	ditto	0	1 8
5	ditto	4½"	ditto	ditto	ditto	0	2 1
6	ditto	4½"	ditto	ditto	ditto	0	2 6
3	ditto	9"	ditto	ditto	ditto	0	2 1
4	ditto	9"	ditto	ditto	ditto	0	2 11
5	ditto	9"	ditto	ditto	ditto	0	3 9
6	ditto	9"	ditto	ditto	ditto	0	4 6

Net free on rail or free on boat at works.

GLAZED BRICKS.

HARD GLAZES, (PER 1,000.)

	White, Ivory, and Salt Glazed. Best.	Seconds.	Buff, Cream, & Bronze.	Other Colours.	Best. Second Colours.
Stretchers—	£12 7 6	£10 17 6	£13 17 6	£17 17 6	£13 7 6
Headers—	11 17 6	10 7 6	13 7 6	17 7 6	11 17 6
Quoins, Bullnose, and 4½in. Flats—	15 17 6	14 17 6	17 17 6	21 7 6	15 17 6
Double Stretchers—	17 17 6	16 7 6	20 17 6	24 7 6	17 17 6
Double Headers—	14 17 6	13 7 6	17 17 6	21 7 6	14 17 6
One side and two ends, square—	18 17 6	17 7 6	21 17 6	26 7 6	18 17 6
Two sides and one end, square—	19 17 6	18 7 6	23 17 6	26 17 6	19 17 6
Splays and Squints—	17 7 6	15 17 6	21 17 6	24 17 6	17 7 6

Plinth and Hollow Bricks. Stretchers and Headers—
5d. each 4d. each 6d. each 6d. each 5d. each
Double Bullnose, Round Ends, Bullnose Stops—
5d. each 4d. each 6d. each 6d. each 5d. each
Rounded Internal Angles—
4d. each 3d. each 5d. each 5d. each 4d. each

MOULDED BRICKS.

Stretchers and Headers—
8d. each 8d. each 8d. each 8d. each 8d. each
Internal and External Angles—
1/2 each 1/2 each 1/2 each 1/2 each
Cill Bullnose, Stretchers and Headers—
5d. each 4d. each 6d. each 6d. each 5d. each
Majolica or Soft Glazed Stretchers and Headers Per 1,000 £22 17 6
,, ,, Quoins and Bullnose 27 17 6
Compass bricks, circular and arch bricks of single radius £6 per 1,000 over above list for their respective kinds and colours } Not exceeding 9in.
Camber arch bricks, any kind or colour, 1s. 2d. each } by 4½in. by 2½in.
Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.

* These prices are carriage paid in full truck loads to London Stations.

	s.	d.	
Thames Sand	7	6	per yard, delivered
Pit Sand	7	0	,, ,,
Thames Ballast	6	0	,, ,,

	s.	d.	Per ton,
Best Portland Cement	36	0 to 41	0 delivered
Ground Blue Lias Lime	21	0	per ton delivered.

Exclusive of charge for sacks.

	s.	d.	s.	d.	Per yard,
Grey Stone Lime	13	6 to	14	0	delivered
Stourbridge Fireclay in sacks	27s.	0d.	per ton at railway station.		

TILES.

	s.	d.	Dlvrd. at
Plain red roofing tiles	42	0	per 1000 ry. stn.
Hip and Valley tiles	3	7	per doz. ,, ,,
Broseley tiles	50	0	per 1000 ,, ,,
Ornamental tiles	52	6	,, ,, ,,
Hip and Valley tiles	4	0	per doz. ,, ,,
Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000 ,, ,,
Ornamental do.	60	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	0	,, ,, ,,
Selected "Perfecta" roofing tiles:—Plain tiles (Peake's)	46	0	per 1000 ,, ,,
Ornamental do.	48	6	,, ,, ,,
Hip tiles	3	10½	per doz. ,, ,,
Valley tiles	3	4½	,, ,, ,,
"Rosemary" brand plain tiles	48	0	per 1000 ,, ,,
Ornamental tiles	50	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	8	,, ,, ,,
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 ,, ,,
Hand-made sand-faced	45	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	6	,, ,, ,,
Hartshill" brand plain tiles, sand-faced	50	0	per 1000 ,, ,,
Pressed	47	6	,, ,, ,,
Ornamental do.	50	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
alley tiles	3	6	,, ,,

OILS.

Rapeseed, English pale, per tun	£38	15	0	to £39	5 0
Do., brown ,, ...	36	15	0	,, 37	5 0
Cottonseed, refined ,, ...	29	0	0	,, 30	0 0
Olive, Spanish ,, ...	39	10	0	,, 40	0 0
Seal, pale ,, ...	21	0	0	,, 21	10 0
Cocoanut, Cochin ,, ...	46	0	0	,, 46	10 0
Do., Ceylon ,, ...	42	10	0	,, 43	0 0
Do., Mauritius ,, ...	42	10	0	,, 43	0 0
Palm, Lagos ,, ...	32	5	0	,, 33	5 0
Do. Nut Kernel ,, ...	35	0	0	,, 35	10 0
Oleine ,, ...	17	5	0	,, 19	5 0
Sperm ,, ...	30	0	0	,, 31	0 0
Lubricating U.S. per gal.	0	7	0	,, 0	8 0
Petroleum refined ,, ...	0	0	6½	,, 0	0 6½
Tar, Stockholm per barrel	1	6	0	,, 1	10 0
Do., Archangel ,, ...	0	19	6	,, 1	0 0
Linseed Oil per gal.	0	2	2½	,,	—
Baltic Oil ,, ...	0	2	5	,,	—
Turpentine ,, ...	0	2	9	,,	—
Putty (Genuine Linseed Oil) per cwt.	0	9	0	,,	—
Pure Linseed Oil "Stority" Brand ,,	0	10	0	,,	—

GLASS (IN CRATES).

	15oz.	21oz.	26oz.	32oz.
English Sheet Glass:				
Fourths	2d.	3d.	3½d.	4½d.
Thirds	2½d.	3½d.	4½d.	6½d.
Fluted Sheet	2½d.	3½d.	6½d.	7d.

Hartley's English Rolled Plate:	⅛in. 2½d.	3/16in. 2¾d.	¼in. 3d.
Figured Rolled and Repoussé	White. 3½d.	Tinted ... 5d.	

VARNISHES, &c. Per gallon.

Fine Pale Oak Varnish	£0 8 0
Pale Copal Oak	0 10 0
Superfine Pale Elastic Oak	0 13 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of churches	0 14 0
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flatting Varnish	0 18 9
White Copal Enamel	1 4 0
Extra Pale Paper	0 12 9
Best Japan Gold Size	0 10 9
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 0

TRADE NOTES.

Messrs. Claridge's Asphalte Company, Ltd. are exhibiting at the Brewers' Exhibition, Royal Agricultural Hall, N., which opens to-morrow (Saturday).

Under the direction of Messrs. Henry and McLellan, architects, Edinburgh, Boyles latest patent "Air pump" ventilator has been applied to Corstorphine Church, Edinburgh.

The Helmington-row Hospital, Co. Durham, is being supplied with Shorland's double-fronted patent Manchester stoves with descending smoke flues, patent Manchester grates, patent exhaust roof and special inlet ventilators, by Messrs. L. H. Shorland and Brother, Ltd., of Failsworth, Manchester.

Pudlo, the powder which makes cement waterproof, is making rapid strides in oversea markets, as well as in the British Isles. One of the largest London shippers to Japan have had cabled instructions from their Japanese house to secure the sole Japanese rights for importing Pudlo, in consideration of their placing a contract for a large quantity to be shipped over a period.

The general purposes committee of the Swansea Corporation have appointed Mr. A. C. Bromhead, of Nottingham, to the position of quantity surveyor in the architect's department at a salary of £250 a year.

At the quarterly meeting of the Northampton shire County Council, the roads committee reported that the Local Government Board have consented to the borrowing of £10,000 free of interest from the Road Board in respect of the widening of the main road between Old Stratford and Weedon, about three miles of which is completed.

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TENDERS.

*** Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

BISHOPSGATE, E.C.—For adapting the ladder shed at the Bishopsgate fire-station for use as a gymnasium, for the London County Council:—

Bowyer, J. and C., Ltd., Upper Norwood	£1,596	0	0
Thorne, F. and T., Isle of Dogs	1,550	0	0
Roberts, A., and Co., Earl's Court-road	1,520	0	0
Grover, J., and Son, New North-road	1,443	0	0
Godson, G., and Sons, Kilburn-lane, W.	1,391	0	0
Marsland, J., and Son, Walworth	1,356	0	0
Holloway, H. L., Deptford	1,313	0	0
Triggs and Co., Clapham*	1,294	0	0
Mather, J. C., 38, Northampton-street, Islington (withdrawn)	1,192	0	0

* Recommended for acceptance.

Bow.—For the erection of a new police-station house at Violet-road, Bow. Mr. J. Dixon Butler, F.R.I.B.A., New Scotland Yard, S.W., architect. Quantities by Messrs. Thurgood, Son, and Chidgey, 8, Adelphi-terrace, Strand, W.C. —

Todd and Newman	£10,423 0 0
Turnbull and Sons	9,737 0 0
Higgs, F. and H.	9,720 0 0
Sheffield Bros.	9,609 0 0
Perry and Co.	9,500 0 0
Holliday and Greenwood	9,445 0 0
McCormick and Sons	9,393 0 0
Jarvis and Sons	9,389 0 0
Dove Bros.	9,169 0 0
Sabey and Co.	9,149 0 0
Roome and Co.	9,121 0 0
Patman and Fotheringham ...	8,943 0 0
Syme, A. E.	8,888 0 0

Broadstairs.—For the supply of 500 tons of granite macadam, for the urban district council :—

	Per ton.	Total.
Road Maintenance and Stone Supply Co.	18s. 5d.	—
Mancel, E. and F.	18 0	£450 0 0
London Granite Co.	17 11	447 18 1
Fry Bros.	17 9	443 15 0
Rowe and Mitchell	17 7	439 11 8
Mowlem, J., and Co.	17 1	—
Brooks, Ltd.	15 2	378 3 4
Cooper, H. L., and Co.	13 3	331 5 0

Castleford.—For erecting 16 houses, Ashton-road, for the Industrial Co-operative Society, Ltd. Messrs. Garside and Pennington, Pontefract, architects. Quantities by the architects :—

Lister, Brook, and Co., Brighouse, Yorks (accepted)	£3,360 0 0

Chelsea.—For heating the County Secondary School, Chelsea, for the London Education Committee :—

Palowkar and Sons, Queen-street	£1,256 0 0
Brightside Foundry & Engineering Co., Ltd., Westminster	1,031 0 0
Cannon, W. G., and Sons, Ltd., Southwark	998 0 0
Yetton, J., & Co., Ltd., Limehouse	960 0 0
Deane, E., & Beal, Ltd., Monument-street	932 10 0
Christie, J. C., Aldgate	909 0 0
Cannon and Hefford, Peckham ...	828 0 0
May, J. and F., Whetstone Park ...	729 0 0
Gray, J., Ltd., Danvers-street, Chelsea (accepted)...	700 0 0

Architect's estimate, £945.

Colney Hatch.—For the erection of a house for the medical superintendent at Colney Hatch Asylum, for the London County Council —

Parker, G., and Sons, Peckham ...	£2,746 0 0
Rowley Bros., Wood Green ...	2,729 0 0
Greenwood, J., Ltd., London Bridge	2,687 0 0
Groves, J., and Son, Islington ...	2,628 0 0
Stevens and Sons, Crouch Hill ...	2,592 0 0
Lawrance, E., and Sons, Ltd., City-road	2,542 0 0
Mattock Bros., Wood Green, N.*	2,442 0 0

* Accepted.

Crossness, S.E.—For the supply of a fuel economiser at the Crossness pumping station enlargement, for the London County Council —

The Clay Cross Co., Ltd., Chesterfield	£593 0 0
Economisers, Ltd., Queen Victoria-street, E.C.	592 0 0
Green, E., & Son, Ltd., Wakefield	573 0 0
Lowcock, A., Ltd., Shrewsbury ...	536 0 0

Amended tenders to fresh specification :—

Green, E., and Son, Ltd.	591 0 0
Lowcock, A., Ltd. (accepted) ...	571 0 0

Deptford, S.E.—For works of painting and tarring at Deptford Park, for the London County Council :—

Watson and Ellwood, Dulwich ...	£225 0 0
Harding, R., and Son, Brixton ...	206 0 0
Garrett, J., and Son, Balham ...	113 0 0
Line, H., Peckham (accepted) ...	83 0 0

Estimate of Chief Officer of Parks, £90.

Edinburgh.—For carrying out (a) furnishings, and providing (b) chairs for upper tier at the Usher Hall, for the town council :—

Jenner, Charles, and Co., Edinburgh (accepted), for both (a), £1,110 17s. 3d. and (b), £510.

Eltham, S.E. — For heating Avery-hill Training College Hostels, for the London Education Committee :—

Arding and Dyne, Southwark Bridge-road	£2,987 0 0
Deane, E., & Beal, Ltd., London Bridge	2,957 10 0
Palowkar and Sons, Queen-street	2,874 0 0
Yetton, J., & Co., Ltd., Limehouse	2,570 0 0
Cannon, W. G., and Sons, Ltd., Southwark	2,460 0 0
Christie, J. C., Aldgate	2,400 0 0
Bradley, G. and E., Lever-street...	2,293 0 0
Cannon and Hefford, Peckham ...	2,248 0 0
Cash, H. J., & Co., Ltd., Westminster	2,128 0 0
Brightside Foundry & Engineering Co., Ltd., 28, Victoria-st., Westminster (accepted)	2,119 0 0

(Architect's estimate, £2,150.)

Eltham, S.E.—For fixing two new boilers for heating the winter garden at Avery-hill, and for the supply and fixing of piping, for the London County Council —

May, J. & F., Lincoln's Inn-fields	£209 0 0
Cannon, W. G., and Sons, Ltd., London-road, S.E.	191 0 0
Bradley, G. & E., Lever-st., E.C.	159 0 0
Deane, E., and Beal, London Bridge (accepted)	151 0 0

(Estimate of the chief engineer, £170.

Gravesend.—For the supply of a motor fire-engine, with reciprocating pump, for the town council :—

Merryweather and Sons, London (Accepted.)	£1,100 0 0

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Finsbury Park, N.—For works of tarring and painting at Finsbury Park, for the London County Council —

Constable, Hart, and Co., Arthur-street West	£99 15 0
Chittenden and Simmons, Maidstone (accepted)	80 7 6

(Estimate of chief officer of parks, £85.)

Hammersmith.—For the erection of 14 additional cottages on the western section of the Old Oak Estate, for the London County Council :—

Rowley Bros.	£3,800 0 0

(Recommended for acceptance.)

Kennington, S.E.—For the rebuilding of factory premises, No. 186, Kennington Park-road, S.E., for Mr. W. Smith, gas-meter manufacturer. Messrs. Briant and Son, 200, Kennington Park-road, surveyors :—

Lowe, W.	£1,465 0 0
Cooper, W. H.	1,437 0 0
Ansell, C.	1,420 0 0
Rice and Son	1,185 0 0
Marsland, J., & Sons, Walworth*	1,089 0 6

* Accepted.

Kilburn, N.W.—For oak boarding and fencing to enclose the gymnasium and playground at Kilburn-grange, for the London County Council :—

Bowen, W., Halstead	£105 0 0
Stenning, W., and Son, Redhill ...	92 0 0
Agate, J. and S., Horsham ...	90 15 3
Horton, B., and Sons, Lewisham Bridge	89 0 0
Stenning, J., and Son, Clement's lane, E.C. (accepted)	83 11 0

Littleborough.—For laying a cable from Victoria-street to Joseph-street, for the electricity committee of the urban district council :—

W. T. Henley's Telegraph Co., Ltd., London (accepted).

Little Coates.—For additions to council school, for Lindsey Education Committee. Messrs. Secrer and Gamble, Bank-street Chambers, Lincoln, architects :—

Ion, W., Grimsby	£2,490 0 0
Theurius and Goodhand, Grimsby	2,327 0 0
Swaby and Walsham, Grimsby ...	2,277 10 0
Markwell, Holmes, and Co., Ltd., Grimsby	2,238 10 0
Horton, S. & R., & Sons, Lincoln ...	2,216 0 0
Jarvis, J., and Sons, Ltd., 253, Hackney-rd., London, N.E.* ...	2,200 0 0

* Provisionally accepted.

Lewisham, S.E. — For providing and fixing heating apparatus at Lewisham Bridge School, for the London Education Committee :—

May, J. and F. (accepted)	£669 0 0

In lieu of tender of £647 from Hayward Brothers and Eckstein, withdrawn since acceptance, on account of error.

London.—For the installation of sliding poles and the execution of certain minor works at the Lewisham, North Kensington, Stoke Newington, and Streatham fire-stations, for the London County Council :—

Lole and Co., Chelsea, S.W. ...	£2,060 0 0
Thorne, F. and T., Isle of Dogs, E.	1,930 0 0
Bowyer, J. and C., Ltd., Upper Norwood	1,895 0 0
Triggs and Co., Clapham	1,740 0 0
Downs, W., Walworth	1,693 0 0
Kerridge and Shaw, John-street, Adelphi, W....	1,643 0 0
Roberts, A., and Co., Ltd., Earl's Court-road, W. (accepted) ...	1,500 0 0

(Architect's estimate, £1,600.)

London.—For the erection of the third section of the tramways central car-repair depot, for the London County Council :—

Downs, W., Walworth-road ...	£30,750 0 0
Bowyer, J. & C., Upper Norwood	29,889 0 0
Munday, G., and Sons, Botolph-lane, E.C.	28,151 0 0
Holland and Hannen, Bloomsbury	28,066 0 0
Holloway Bros. (London), Ltd., Lambeth	28,000 0 0
Higgs & Hill, Ltd., South Lambeth	27,848 0 0
Lawrence, W., and Son, Finsbury Circus	27,772 0 0
Wallis, G. E., and Sons, Panton-street, S.W....	27,760 0 0
Rowley Bros., Wood Green ...	27,496 0 0
Godson, G., & Sons, Kilburn-lane	27,291 0 0
Wall, C., Ltd., Chelsea*	25,690 0 0

(Architect's estimate, £27,600.)

* Recommended for acceptance.

Oswestry.—For furnishing the secondary school for boys, for the Salop Education Committee. Accepted tenders :— Schoolroom fittings :—

North of England Furnishing Co., Darlington	£226 3 10

Oak desks (one hundred) :—

Addison, H., and Co.	108 15 0

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THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House, Strand, W.C.

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OUR ILLUSTRATIONS.

"The Athenæum," Gray's Inn road, W.C. Messrs. James A. Bowden, M.S.A., and A. St. Hill Brock, A.R.I.B.A., Architects.

National Gold Medal Prize Student Drawings of Figures from the Nude. By Mr. Arthur Mason.

New Church, Woodlands, near Doncaster. View and plan. Mr. W. H. Wood, F.R.I.B.A., Architect.

The Hippodrome and Cinema, Hull. Messrs. James A. Bowden, M.S.A., and A. St. Hill Brock, A.R.I.B.A., Architects.

Details of the Big School, Haileybury College. Messrs. John W. Simpson, F.R.I.B.A., and Maxwell Ayrton, A.R.I.B.A., Architects.

Parr's New Bank and Premises, Bishopsgate, E.C. Mr. Stanley H. Burdwood, Licentiate R.I.B.A., Architect.

Proportion.

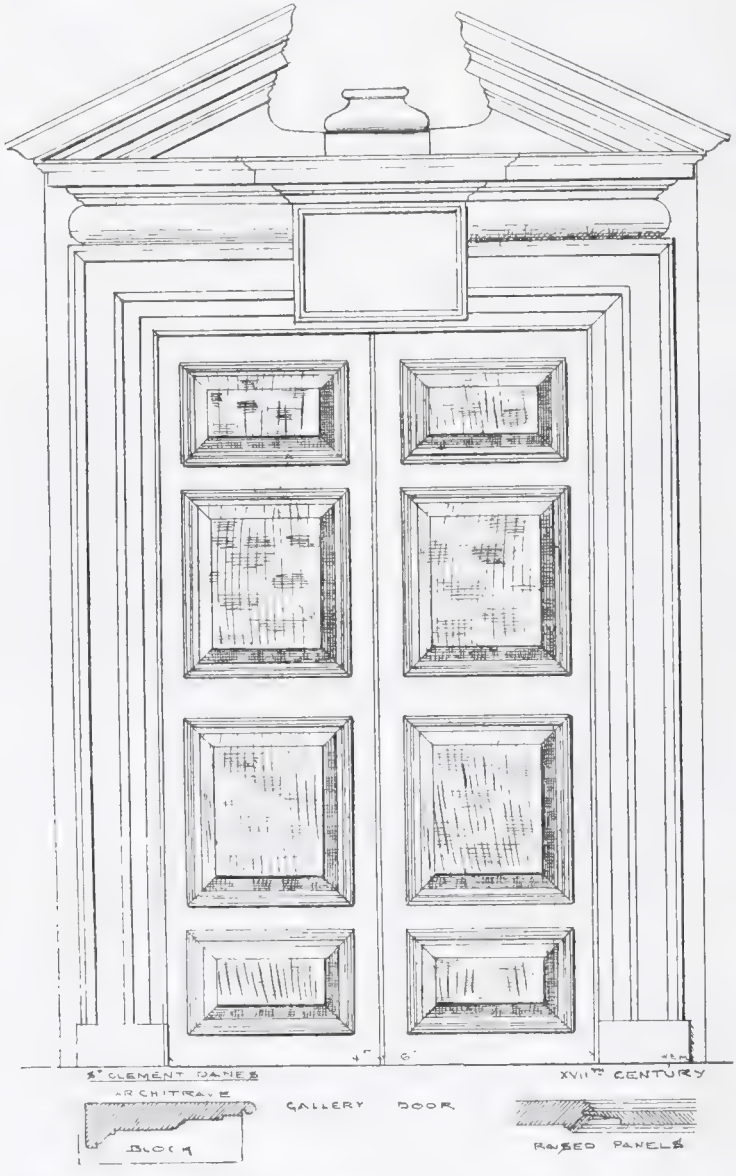
PROPORTION.

It may be stated, in general terms, that architecture should not only be related to construction, but it should be based on it, so that, although a man may have a literary, a scientific, and even an artistic education, if he is ignorant of building construction he cannot be an architect, and his pronouncements on that subject, so far as they depend on his own knowledge, are empty as a sounding brass or a clanking cymbal. Architects of the Middle Ages were not University men, nor were they associated with a "Department" which bestowed honours and medals on them because they were proficient in draughtsmanship and theoretical knowledge. Yet everything the Mediæval men dealt with, even to a door-hinge, was replete with interest. There is, of course, no reason, however, why an architect should not be a University man. He is none the worse for it, neither is he always anything the better as a student of architecture; for though he may be proficient in the classics, and have gained some degree of culture, these are only things to talk about, and not to build by. It is absolutely certain that taste can exist without what we call education: the experience of the past ages proves it. The freemason of old, who was illiterate compared with our professional men, displayed a taste in building which we all admire, even though none of us may approach it. If this is true, an architect's education clearly should begin on a building, under the superintendence of a competent workman, and not only in a drawing-office; and it should be continued where the pupil will deal in spaces of three dimensions, and not with that of two dimensions, because space is deceptive as seen on a drawing-board. There are numbers of able men in our profession; they have many advantages their predecessors had not, and it is painful to see their talents wasted in producing work which has well been characterised as "fussiness and fluster," with the strange idea that these were the hall-mark of originality. There was a time when architecture was replete with interest—not in exceptional cases, but generally—say, during the period extending from the time of Harold to that of the Tudors, when it became debased, as if smitten with a disease from which it suffers to this day. The revivals of art, whether Gothic or Classic, which passed current as architecture were really only studies in archæology, without any basic principle of art or construction.

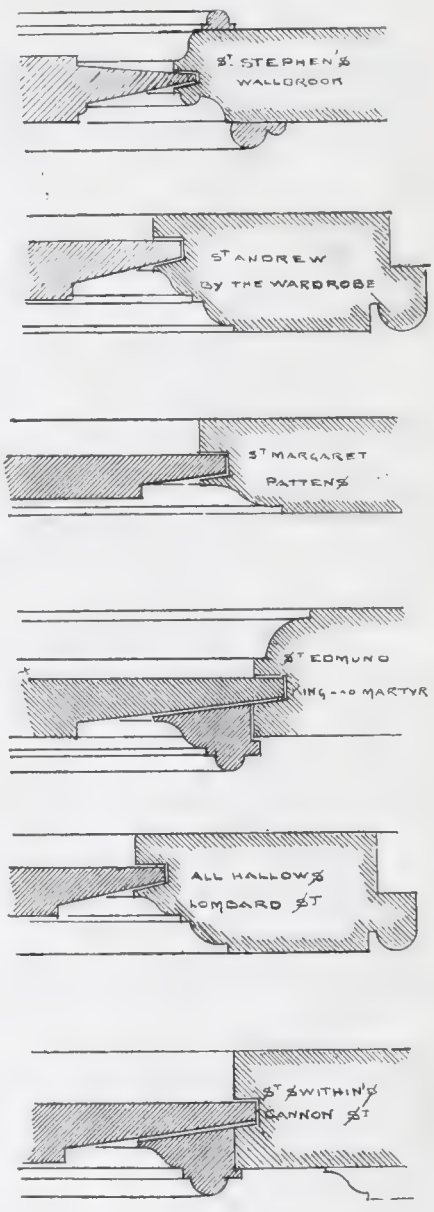
We are assured on high authority that Sir Christopher Wren had "little of the abandon" of the purely artistic genius. This assurance was superfluous, for Sir Christopher never laid claim to anything of the kind, and in reality there does not appear to be much opportunity for its display in the style that Wren made his own, for in it we are told that proportion is everything, and the Calculus takes the place of that unrestrained license attributed to the Gothic men. But though Wren did not lay claim to that peculiar accomplishment, it cannot have been altogether extinct in him, for he described Inigo Jones's Corinthian portico, affixed by him to St. Paul's Gothic Cathedral, as being "a miracle in itself." If this did not testify to the highest type of "abandon," what could do so? Wren's college days were spent in acquiring a knowledge of mathematics, as a professor of astronomy, and in making telescopes. Charles II.—whose knowledge of architecture and architects was probably as good as that of the German Emperor, at any rate—gave Wren his first job: the important one of building the Palace at Greenwich. Anything Wren knew of architecture at that time he must have picked up from Jones or Webb in theory, and his practical knowledge of building was derived from his experience in repairing St. Paul's, which was sadly knocked about by those ubiquitous people the Cromwellians. As Palladian was the architecture of Jones, so it was of Wren. That style Palladio did *not* originate, for he was born, at the earliest, in 1508—some say 1518—and there are tombs in that style by Correggio (one in the Rolls Chapel, and two in Westminster Abbey) dating from about 1516. Palladian architecture must, therefore, have been introduced into England before Palladio was born; but this is not strange when we recollect that the Italian Renaissance was begotten by Brunelleschi, fostered by Sansovino, and brought to maturity by Palladio. His personality is, therefore, projected backwards in giving an English name to the style of architecture practised by his predecessors. Sansovino affected the Lombardic type of work, and he built many churches in Rome and in Florence. He was born in 1479, and died in 1570. The cupola of the cathedral at Florence is Brunelleschi's chief work, and he gets credit as being the first of this trinity of architects who endeavoured to build in a pure style. He was born in 1377, and died in 1446.

The dates of the births and deaths of such men, though apparently of little interest, are in reality valuable, for by means of them we may correlate their work with that practised in England during the same period. With us, Perpendicular Gothic was contemporaneous with Brunelleschi; probably it was well developed before he was born, for there is in the clerestory of the choir of York Cathedral a five-light window dating about 1370, and it has vertical tracery of what is called two "orders," with horizontal transoms. Our best Perpendicular work was being done whilst the Italian was putting his cupola on Santa Maria del Fiore, building the Palazzo Pitti, and the churches of San Spirito and degl' Angeli in Florence. He also carried out important works in Milan and Pisa, and he drained the country round Mantua. As William of Wykeham was making his mark on Winchester Cathedral from 1370 to 1400, we may compare his work and the progress of the Perpendicular style with that of the Renaissance in the hands of Brunelleschi during the dates given above. In Sansovino's time our Perpendicular gradually lost its characteristic features, and it became debased; for there are few really good examples of this work to be found dating after 1520, which we may fix as the time of the building of Dundry Church tower, near Bristol. Broadly speaking, then, it may be said that Gothic architecture died out in England soon after Henry VII.'s death. Italian features then crept gradually in, and in such a flood that they completely swept it away. Even to architects it became as a thing unknown, and they derived their inspiration solely from Classic works. When the two styles of Gothic and Classic were fighting for supremacy, they became mixed, and they passed through the various phases known as Elizabethan, Jacobean, and "Queen Anne." But as these were really jumbles of Greek, Roman, Gothic, and Italian, there were consequently no real styles — unless, indeed, we invent a new one, and call one or the other the Mongrel style. Yet in these degenerate times some good work was done—as, for instance, the stone staircase at Christ Church, Oxford, which we are told was built by "one Smith, an artificer, of London." Whatever may be said of Gothic, it is certain that it was an exclusively Christian style, and that if our early work was derived from Normandy, fan-vaulting and the wooden roofs of the 15th century were truly English. During the last century, millions were spent in endeavouring to revive Gothic; but the attempt must now be reckoned a failure, for it would be difficult to point to any modern building in that style which can be pronounced altogether satisfactory; and this is the more inexplicable from the

fact that there are no fixed rules in it, as there are in Classic, to fetter the imagination or paralyse any sense of beauty a designer may possess. Furthermore, it is a style adapted to our climate, and this cannot be said of forms imported from Greece and Rome. It would be interesting to discover why a national architecture should run a certain course and die out. Perhaps it is because the mind likes changes and if architecture does not respond to this requirement it stagnates and dies of neglect. When the public gets tired of Palladian, what other style remains to be tried Egyptian or Assyrian? Assuredly not, lest the same mishap befalls us which happened to Noah. Perhaps when the next change comes, it will be to a new style based on the possibilities of steel and cement, and that we shall not need to turn back again to the secondhand splendours of Rome or the constructive methods of the Greeks 500 years—



We are told by men who think they know, that until our modern architects understand the way to build by proportion, as Jones and Wren knew how, we shall never have architecture; and it has also been declared, as we said above, that until they contract "abandon" in some way, probably by infection or inoculation, they cannot produce anything worthy of the attention of the connoisseur. Poor architects! they are in a precarious position if some of their present-day critics are right. How are they to extricate themselves? To satisfy the rules of proportion, one must know where the canon is to be found, and it should be infallible, and of universal application, or it will be an unsafe guide. For our part, we are suspicious of infallible guides. True, if the canon of proportion is like another infallible canon that we know of, it may be accepted unhesitatingly, for one of its prerogatives is the right to contradict tomorrow what is said to-day, without suffering loss of prestige. The first canon of proportion that we know of is that called after Polykleitos; he flourished in Argos and Sikyon about 452-412 B.C., and although there is some uncertainty about his canon, there is none about his "abandon," for he was in the habit of balancing his statues on one leg. Our old friend Vitruvius has given us a version of the canon; but it does not help us in architecture, as it deals solely with the human figure. As a canon of this kind is necessarily based on measurements which can vary little, one would think that as the human figure was always available for its correction and adjustment, it must be as a standard beyond dispute. But such is not the case, for Leonard da Vinci did not hold with it, and he made use of his own, illustrating it with the well known figure of a man standing in a circle with his arms extended. This improved canon came to be disputed in its turn, and Bonomi, Lepsius, Clarac, M. Blanc, Winckelmann, and others fought over it, quoting Plato and Diodorus Siculus, which makes us regret that the canon in marble left us by Polykleitos, as well as that in writing, have been irretrievably lost. After all, it is well to know that sculptors dread the rules of geometry; and they can design on the scale of nature, or on a colossal scale, with no other canon than the eye. There appears to be no such thing as a standard of proportion that may be used universally, and that will commend itself to everybody; for one living in a house with low rooms will come to look on them as well proportioned, whilst someone else, accustomed to high rooms, will think them much too low. Again, as we cannot vary the height of our ceilings to preserve a due proportion to the length and width of our rooms, which are always varying, and as no one suggests that such a thing should be done, it is clear that proportion applied to buildings is as shadowy a thing as taste, when we come to define it by rules.



According to Wren's admirers, he could do what no living architect can do—that is, to make a building beautiful by proportion alone. The question is, did he ever try to do this, and if so, where? Proportion obviously relates to the disposition of mass and void in a structure, and if it is a property necessary to beauty, how is it to be defined mathematically when it belongs to the Pantheon porticoes, as well as to—say—any Norman arcade in our old cathedrals? These are pronounced to be beautiful by persons of taste, who do not wait to compare solids with openings, but who are impressed at once by the fact of

the fitness of both for the purposes by which they were evolved. We illustrate one of Wren's doorways, and the mouldings of six others, and we do not hesitate to say that neither the proportions nor the ornaments support the statements made about his work, for the doorway is too low for its width, and the mouldings are commonplace. The broken pediment, the base for a bust, and the tablet without any inscription, breaking into the architectural frieze and cornice—all require explanation. We have already illustrated a 15th-century Gothic door, and for rational construction it is far above this.

SKETCH CLUB EXHIBITION, ROYAL COLLEGE OF ART.

Hidden away among the old iron temporary sheds at the back of the Natural History Building, with a sole approach now from Queen's Gate, Kensington, a very creditable and representative collection of students' essays in black and white, oil-paintings and water-colour sketches as well as portraits, has just been on view to the public, though few beyond interested friends have probably sought out Block C in its obscurity. The show closes to-morrow. The adjudicators included Sir George Frampton, R.A., Mr. George Clausen, R.A., Professor Selwyn Image, and other authorities in the various branches of the arts.

The "Club prize," enhanced in value by Mr. D. Du B. Davidson, for a landscape in oils, is taken by H. E. Gooding, whose spirited and dexterous seascape, with rollers stretching along a rocky shore, is brightly and transparently handled. L. Underwood's harbour or quay subject (23), with the overhanging waterside shanty towards the landing-stage in front, and low cottages in the rear, is a very pleasing study of greys and blues, giving, too, an adroit atmospheric effect and a fine sense of space, within its circumscribed limitations, though the somewhat over-large lad, with a blue blouse and a truck, in the foreground might be thought to quarrel with the scale of the scheme; this hardly happens, and the author well deserves the "commendation" accorded him. Professor Gerald Moria's prize for "A Holiday Scene" is only competed for by five. The hard, if graphic, group of none too graceful trippers in varied costume here winning the post of honour may have been directly managed and painted with little hesitation, but it lacks any intrinsic beauty. The "Nocturne" subject, if better competed for, looks tame compared with the florid pigments of the last-named studies hanging hard by. For sketches in oils, the Club prize was contributed to by the principal, Mr. J. J. Shannon, R.A. H. Hendrie takes it with his architectural painting of an Italian Church Portal (138), carefully delineated, and expressing the design very closely, considering the medium employed. There were eighty competitors, and these included not a few clever paintings. "The study of architecture in combination with landscape" attracted twenty-two entries, and W. M. Keesey, A.R.C.A., easily won, as also in the contest for the best "set of sketches in black-and-white." We gave some of Mr. Keesey's capital pencil sketches of architecture two years ago, when they attracted much attention. The present assemblage includes views in Cambridge and some from Normandy or French studies (364-366). Following not far behind comes F. C. Richards (381), for this competition is one of the strongest. "The Caricature of a Student" contest hardly rose to the occasion, and the "Studies of Animals from Nature" though meaning painstaking work, are scarcely inspiringly done, and, at their best lack suggestion of adaptation for conventional designs. E. A. Benny, in his framed drawing of a tiled design, done in black and browns, included animal forms (507) intended to be applied to a plastic medium. His work is too full of detail, and the creatures represented are not big enough in treatment. They should have been simpler, and of more idealised fashion, not mere naturalesque representations. The Arch of Titus, and a Roman doorway, 'midst other partially-coloured but dextrous pencil-studies, touched in with pale tints, furnishing subjects from Naples and Florence (332-4), deservedly carried off a prize supplied by Mr. Runciman, M.P., in the class of "Outdoor Studies in Water-colours," H. Youngman being the prize-winner, and clever as his facility of draughtsmanship is, we are not quite sure that slight washes quite come in correctly under this class, though moderated in definition by a sub-section as "sketches in colour." For an architect, no doubt such tintings are sufficient and suggestive enough. The drawback is that they leave off where the water-colourist's real difficulties begin when architecture is the subject. No. 226 is the head of a girl in oils 'midst the "Figure Subjects painted out of doors." Mr. G. Heywood gave the prize, and Esther Willoughby won it, for this study, which is pleasingly handled with clear shadows over the face of the model, who wears a becoming hat nicely drawn and cleanly executed. H. Hendrie, already named, figures several times in the gallery, and exhibits among the non-competitors; but, at the same time, he has secured Mr. E. W. Tristram's prize for a "Set of Studies of one form of artistic craft," by his clever drawing (No. 195). The craft-work, in glazed showcases, seemed equal to the average work done under the direction of Professor W. R. Lethaby in the Royal College of Art, and the prize offered was given by him.

There were also some pieces of jewelry, samplers, modelling and pottery designs. We were interested in a set of photographs of a Dutch pageant held at the Hague last August, to commemorate the return of the House of Orange to the Dutch Throne, designed by Kathleen Turner, Gladys Thompson, John Adams, and Philip Cole.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

The opening meeting of the eighteenth session of the Royal Institute of British Architects was held at the galleries, 9, Conduit street, W., when there was a full attendance of members and visitors, the latter including several ladies. The President, Mr. Reginald Blomfield, A.R.A., wearing his chain and badge of office, and the Royal Gold Medal, occupied the chair, and Sir Ernest George, Sir Aston Webb, and Mr. Basil Champneys, also wore the Hibernian of Royal Gold Medallists.

The President was heartily received on rising to read the following opening address:

THE OUTLOOK OF ARCHITECTURE.

In an address which I had the honour of giving in this room on a recent occasion I reviewed, in a very cursory way, the ups and downs of architecture in this country during the last hundred years. I brought my survey down to the rise and gradual failure of the Gothic Revival. To complete the main outlines of the picture it is only necessary to remind you of the reappearance of Classic, and its gradual consolidation within the last twenty years. At the moment of its triumph, Neo-Gothic was already undermined by the rhetoric of its advocates, and even by the adventurous spirit of some who had been trained in the strictest [illegible] of the Pointed. It is now [illegible] into the territory of the Renaissance were made by Dr. Ex, Norfolk, and Norman Shaw; and these have been followed up by a systematic study of Classical Architecture which has resulted in the recapture of some at least of the scholarship of the art. Undoubtedly interest in architecture is more widespread than it was, and our literary friends are well to the front, telling us of our failure, what we ought to do, and how to do it. Experienced architects are not very likely to be turned from the course they have set themselves by criticism and clamour; but the rising generation may feel some doubt and perplexity, and I think the time has come to take stock of the situation so far as it is possible to do so. It is not an easy thing to do, and I must ask for your tolerance if I seem to you to misread the signs of the times. It is difficult to appreciate contemporary art with any certainty. One cannot get far enough back from it to place its features in right perspective. The tendencies that result in history do not lie on the surface, and what appears to be a new light may be only the will-o'-the-wisp of a passing fashion. Moreover, the problem of architecture is very complex, and as the power of literary expression is seldom in ratio to technical knowledge and ability, our guides and critics may possibly misapprehend the situation, and leave unnoticed those strong impulses in artists themselves which must be the foundation of any real progress in the future. Our critics do not always grasp the continuity of architecture, and its solid basis in facts, and, I believe, it is this omission which explains their hankerings after new styles and their clamour for originality, no matter whether it is good, bad, or indifferent. For some generations art criticism has suffered from a certain feverish impatience, which has blinded it not only to the intimate and necessary connection of the architecture of to-day with that of the past, but also to the germs of future development, latent in that contemporary art which it is the common practice to minimise and disparage. It is only a few years back since critics, whose training should have given them more insight, complained of a lack of initiative in those who, through good report and evil, steadily pursued our national tradition of Classic architecture. Time has justified those men, and a very few years have shown the practical certainty of disaster that waits upon jumps into space. That point of view has been dropped by serious critics, and our professional writers are too well informed to believe in the value or even possibility of any violent cataclysm in architecture, such as that now being attempted by the

FUTURISTS AND THE CUBISTS

in painting and sculpture. We, at any rate, know that architecture is too serious an art to pay any attention to quack remedies. Meanwhile, architecture, or perhaps I should say architects, are attacked from another quarter, and the attack, I do not know whether consciously or not, is a repetition of the polemic of the Neo-Gothic enthusiasts of the "seventies." A clever writer in the *Morning Post* has drawn a charming picture of those glorious days when Gothic architecture was run entirely by the Guilds: when the workman was unchecked by the architect and his T-square, working his own sweet will as a free and glorious artist; when the building craft was the greatest in the world, and the Guilds were its embodiment, storehouses of knowledge, "the vat," if I may quote his words, "into which the experience of all ran." The master masons, he asserts, were "cultured men, the associates of princes and scholars; they built with extraordinary audacity and imaginative resources." We are now told that architecture has lost this fount of inspiration, and we are bidden to throw over our scholarship, our draughtsmanship, our powers of design, our trained technical ability, and watch the "felicity of action and latent understanding" with which "a mason tosses and turns a brick." (I may mention in passing that the Bricklayers' Union would very soon be on his back if he did!) The writer, Mr. March Phillipps, is so haunted by

the idea of an architect that he goes so far as to say that he never met a man, other than an architect, who had a good word to say for the architecture which ranges from the reign of James I. to that of George V. I think he must have forgotten Greenwich Hospital and Hampton Court, St. Paul's Cathedral and Somerset House, and without desiring to enter into controversy one is compelled to question the historical accuracy of Mr. Phillipps's charming idyll. I seem to detect the trace of an ingenious theory which a few years ago was spun round an obscure association known as the Comacine masters. Were the Guilds the last refuge of the building art? the high-minded guardians of all that was noble and beautiful in architecture, thrust out of place by an arrogant intellectualism? Were they not in fact so hopelessly corrupt in their latter days that the "adverse legislation," as Mr. Phillipps calls it, became an absolute necessity of intelligent government? I would ask also, were the Mediæval workmen the consummate masters of the building art that our critics would have us believe? Is it not also an historical fact that many of them built extremely badly, that church towers of the 15th century have simply collapsed in France, that some of their most ambitious ventures in construction, as at Beauvais, failed almost at once, and had to be precariously maintained by a network of iron bars? Those who have had the handling of old buildings have had it driven into them again and again that the average building of the Middle Ages was inferior rather than not. I am talking simply of building, not in any way of design and details of ornament, and I say deliberately that at the beginning of the 16th century most of the master-builders were bad builders, and if our critic has any doubt on the matter, I would remind him of what happened in France in the reign of François I., and of the contemporary evidence of Philibert de l'Orme on the master-builders of his time.

INTERNAL CRITICISM OF ARCHITECTURE.

Our critic imagines a divorce between the modern architect and his workmen that does not exist. "Labour," by which is meant the skilled labour of the building trades, is not in "the state of helpless ineptitude and dull impotence" which Mr. Phillipps supposes. The architect is not a truculent and arbitrary tyrant, any more than the workman is a heaven-born but downtrodden artist. They are both, let us say, honest men trying to do their allotted work, and some of them do it exceedingly well. All good architects value a good workman; the unsympathetic attitude of architects is wholly imaginary, and the phrase "the untravelled workman" which Mr. Phillipps imputes to me, was, if I recollect aright, the invention of a somewhat intemperate champion of the art-master, and I am not conscious of ever having used it at all. Mr. Phillipps makes a distinction between "creative construction" and "imitative construction"; the first he identifies with Gothic architecture, the second with Classic. Surely this begs the whole question; this distinction, which is to be the key to the architecture of the future, is only a repetition of the outcries of Ruskin. Nobody, no practising architect, at any rate, ever thought about such things before his time. The idea is of purely literary origin, it has no justification in history; on the contrary, it makes the serious error of overlooking the work of tradition in both Mediæval and Classical architecture, that slow and almost unconscious moulding of architectural forms from generation to generation. It is an idea that has arisen from the habit of regarding the details of architecture as architecture itself, of concentrating attention on words rather than on language. Nor, as a student of the history of architecture is one in the least disposed to accept the assertion that the architect is the "fons et origo malorum" in architecture, and that he is so by reason of his trained ability, for that is what the charge amounts to. The more closely one studies certain contemporary criticism of the arts the more convinced one is that it is inspired by the dictum of the celebrated "Capability Brown," that "knowledge hampers originality." Mr. Phillipps says that in Mediæval building there was not "a sign of a dictate, automatically delivered and passively accepted," but he has himself to admit that in more "important operations" the work would be "supervised by some craftsman of more than local repute." Indeed, unless human nature was different in kind in Mediæval times from what it has been both before and since, building operations could only have resulted in Towers of Babel, unless there was somebody in control whose dictates were both delivered and accepted. That he was not equipped as a modern architect we are all agreed, but that he was a person of superior knowledge in control of the workmen is also certain, and this knocks on the head the engaging theory of the workman and his own sweet will. We have to get back to the facts, and I have dealt at some length with this criticism of modern architecture, because Mr. March Phillipps writes so well that some danger to the right understanding of the art lurks in his well-turned sentences. The views that he advances are, I think, off the track of history. No serious advance is to be made by turning our back on the immediate past, or blinking the facts of the present and trying to jump the centuries. This idea that the hope of architecture lies in the untrammelled (not untravelled) genius of the British workman is the merest "ignis fatuus." Anyone who has first-hand acquaintance with the condition of modern building, with the methods of modern construction, with the qualifications of the modern builder, and the temper of the modern employer, knows that the suggestions of our critics are impossible in practice, and that even if they were possible the result would probably be an exaggerated version of the efforts of the speculative builder. The man of genius who first made popular this delightful dream of Mediæval art had the excellent sense to call his message "News from Nowhere." Morris's theory of architecture was just the expression of his own temperament, and the logical corollary of his personal conception of architecture as the drudge and vehicle of decoration on the one hand, and of practical necessity on the other. This view is constantly reappearing in modern criticism; but I would remind our critics that architecture is the greatest of the plastic arts, and that it is not its function to sit at the feet either of the ornamentalist or of the engineer. I do not think that architects were seriously alarmed as to the future of their art. They will agree heartily with Mr. Phillipps in his search for simplicity and sincerity of statement. Where they will entirely decline to follow him is in his subordination of architecture to the ignorance and incompetence of "average labour" (the phrase is Mr. Phillipps's, not mine). So far I have endeavoured to put before you what I may call external criticisms of architecture. We cannot entirely disregard them because they are widely read by the general public, and as they are usually stated in excellent English, they may have a far-reaching and unfortunate influence, against which we have to be constantly on our guard. The difficulties in which the art was landed by the unbalanced eloquence of a great writer in the last century are a matter of common knowledge.

ARCHITECTURE FROM AN ARCHITECTURAL POINT OF VIEW.

Now let us consider the art from our own point of view. Anyone who has studied history knows how slow and gradual has been the growth of architecture, by centuries in Mediæval times, by half-centuries from the dawn of the Renaissance down to the end of the 18th century. These advances, too, have been made not by deliberate intention, but almost on compulsion, in order to meet the changing needs of a constantly expanding civilisation. Looking back on the past we can trace the successive steps, we can show the development of construction and the gradual perfecting of technique, and we can follow more obscurely the trend of artistic thought, the gradual consolidation of those impulses which lie at the back of vital movement in the arts. The road is unbroken—where we miss it, there is no hiatus in fact, but only in our knowledge of the facts, and if there is one thing more certain in history than another it is that of all the arts architecture is the most steady and consistent mover. The idea of the Futurists that architecture will advance by being turned upside down is not worth the consideration of serious students. On the other hand, the arts do not stand still, architecture least of all, because it is essentially a practical art. Fresh problems present themselves in planning, provision has to be made for the ever-widening range of applied mechanical science, new methods of construction have to be considered, the practice of architecture becomes more difficult every year, and the modern architect has to deal with a range of subjects which would have paralysed his grandfather. The question we have to consider is how far these changed conditions are likely to affect design, and how we architects should set our course if we do not wish to drift on to the quicksands of futile experiment. It has sometimes been suggested that the future of architecture lies in a resolute reflection of all the accepted forms of architectural expression. What we are to do after this I am not quite clear, because some of our critics tell us that we should leave our steelwork and reinforced concrete just as it is, and others want us to spin new forms out of our inner consciousness. Our critics are so dreadfully impatient, architects may well say, like the unfortunate debtor, "Have patience with me and I will pay thee all." But that is just what we are not allowed to do, because our public is never quite sure whether we are the enemy of society, or the "Deus ex machina" who can resolve every conceivable difficulty. The past fifty years has seen some desperate endeavours to invent something new, experiments in various styles in the past, and experiments in what is fondly believed to have no relation to the past. I think it is time we gave up these conscious and artificial attempts at originality, and let it find itself. Where our critics go wrong is in demanding a new language when they ought to be demanding new ideas. The old language will do very well if we are masters of it and have the brains to use it to the full. Meanwhile history has been making itself, and making itself in a rather curious way. If we go back to the last quarter of the 19th century, we find that the orthodox Classic of the older school had dwindled away to dullness and decrepitude, the Gothic revivalists had broken loose in all directions and afterwards lost their clue, having condensed into some thirty years all the variations of an art that had taken five centuries to run its course. The more original among these men had for years been feeling their way out with tentative excursions into the Renaissance: Nesfield at Kinmell, Devey in many a picturesque country house, Norman Shaw, who, with all his genius in design, reached his Classic too late in his career, and close on the heels of these came men who, I am glad to say, are still with us, and who won their spurs when some of us were still in our articles. Meanwhile a generation has grown up no longer content with odds and ends of detail, however picturesque, but anxious to get to the heart of things, and to grasp the informing spirit of Neo-Classic architecture. The technique of the art in its widest sense, not only in nuances of detail, but in the larger aspects of planning and composition, rhythm and proportion, has received in recent years a study and attention such as had not been given to it since the days of Cockerell, and we have now before us versions of Neo-Classic which deserve to be taken seriously, and out of which, I believe, may ultimately develop that standard manner which is essential to the appearance of any such vernacular art as existed in civilised Euope in the first half of the 18th century. I think all close observers of modern architecture will admit this real advance, and this gradual "rapprochement," as I have to call it, of the ablest designers that we have. It exists so far in a common point of view rather than in an identical manner, because we have varying versions of Classic all worth taking seriously—the attempt to pick up the thread of Cockerell's tradition—a possibly somewhat dangerous leaning towards the fashion of our colleagues in France—and the more sober manner based

on our own Classic of the earlier part of the 18th century. That any one of these should sweep the field entirely is neither to be expected nor to be desired. Such a result would be alien to the genius of our race for individualism and its robust dislike of pedantry. Nor would it be a complete synthesis of all the factors in the case, for ecclesiastical architecture has yet to be taken into account. Our English clergy still cling to Pugin's totally unhistorical claim that Gothic is the only possible form of religious architecture, and, Classical churches being ruled out of court, our architects have to persevere with Neo-Gothic. Let me say at once that some of them design in it with great ability, and that, so far as my observation goes, the architects of this country are the only ones who have got within range of the subtle elusive spirit of Mediæval art, so far as it is possible for anyone to do so. Then, too, there is that Byzantine strain which found such wonderful expression in Bentley's church at Westminster. Its influence is less marked than it was, but it has been a valuable factor in the advance of architecture, because in its austerity and reserve, in its feeling for surface ornament and the value of abstract form, it is akin in spirit to the purer forms of Classic art. All these elements the wise artist has to note, and in spite of their different idioms he may find a certain bond of kinship in their constant effort after simplicity of statement, and even the most ardent Classicist may learn a lesson from the elasticity and resourcefulness of Gothic. Let me say at once that I am not advocating the eclecticism that has done duty for design in the past. Every artist has to find his own personal method of expression; but the wider and deeper his range of study the more flexible and the more assured will be his art. Craftsmanship in the sense of the dexterity of hand acquired by specialised work in one direction and on one material is an admirable thing, but it is not architecture, nor does it represent the aim and ideal of an architect in regard to his art.

THE ONLY EFFECTIVE SOURCE OF DEVELOPMENT IN ARCHITECTURAL FORM

must be new conditions of building, and this will be very different from that new and original style for which our critics hanker. The fashion of ornament may change, but the problem of architecture does not lie with ornament, and the epoch-making discoveries in the art have arisen from practical necessities handled in the most direct and even uncompromising manner. Witness the Colosseum and the dome of the Pantheon. The designers of these great buildings did not trouble their heads about inventing fresh detail; what they found to hand was good enough for them. Where the Roman architect was so great, greater even than the Greek, was in the masterly handling of a great conception, in that power of bringing the mind to play on the actual facts. The American skyscraper is also an example of a new form arising from new necessities, though the solutions have not always been happy, because the essential elements of tower design have been forgotten. It comes, I think, to this, that although new architectural forms in the sense of new outlines, new groups, and masses will naturally develop out of the changing problems of civilisation, no necessity arises for anxious effort to change the ordinary vocabulary of architecture. Perhaps of all futile experiments in originality the competition for a new French order to glorify Louis XIV. was the most gratuitous and the most ridiculous. The question still remains how we are to deal with inventions such as reinforced concrete when used for the exteriors of buildings. Are we to adhere to the shibboleth of the Gothic revival, and show our construction naked and unashamed, and are we to suppose that our æsthetic sense will alter so materially that we shall presently find pleasure in ranges of openings supported and separated by the thinnest piers to which the engineer can reduce our points of support? What may happen to our æsthetic sense in the future no one can say, in view of the chronic assaults made on the sanity of the public. The only evidence is what has happened in the past, and that evidence shows that though from time to time there have been eccentric aberrations, the orbit of taste has ranged between fairly determinable points, and those points have not included such skeleton building as is of the essence of reinforced-concrete construction. If, as I incline to think, our dislike of it springs from some deeper instinct than mere unwillingness to change, we must reserve our freedom to use inventions such as reinforced concrete as mere instruments of building, in the same manner as we use steel construction, or as the Romans used their system of brick ribs and arches. I see no reason why, in dealing with this and similar methods, we should not avail ourselves of all the weapons in our armoury, translating our construction into such forms as will best express the central conception of our design. In other words, we are not compelled to subordinate our design to the instruments we employ. There is always a touch of the aristocrat about the mistress Art. What conclusion is to be drawn from the considerations I have endeavoured to put before you? What is it we should aim at, and how far are we likely to realise our aims? We have to accept the fact that we are at

THE END OF 150 YEARS OF ECLECTICISM.

The last genuine tradition died with Chambers. His successors carried on his manner, but other elements had come into play, the Romantic movement on the one hand, and the age of archæology on the other. Architecture, most unfortunately, came within the literary net, and it has not yet escaped it. Hitherto—that is, till the latter part of the 18th century—architects had studied old work assiduously, but it was with the object of perfecting their technique. The archæologists have worked with quite different objects, and though they have done invaluable work in extending and correcting our knowledge of the past, their labours have had the curious result of placing architecture on the wrong issue, and of reducing architects from time to time to a state bordering on imbecility from the very profusion of the details at their disposal; a fact that will need attention in the conduct of the new British School at Rome. From this state of things I think we are emerging; the limits and the relation to each other of architecture and archæology are becoming clearer, and the conviction has been steadily growing in the mind of architects that details are but the outside of the cup and platter, and that their value is conditional on the use that is made of them. This is the first step towards the reorganisation of architecture, and its recovery from the chaos of the 19th century. We cannot escape the difficulty of modern architecture, that we are offered too wide a choice, that there are too many wells to draw from in the interminable issues of photographs and illustrations, and also that there are too many fashions set by irresponsible people. The temptation to yield should be met if our architecture is to be robust; and the way to meet it is to shape differently at the problem of design, to search for the idea, and let the form develop out of it. A master idea carries with it its own expression, and to a mind well stored with the language of architecture the form follows the idea so closely as to be almost inseparable from it. I am not going to attempt any prophecy as to the future of architecture in this country. My own view is that genuine progress is likely to be made only along lines already laid down, by the skilful use of opportunities as they occur in plan and construction, and by the watchful care of all elements in design that pull the same way—namely, in the direction of strength, refinement, and sincerity of statement. Our French colleagues, I am told, deprecate our ventures in monumental Classic, and would urge us to follow the models of Late Gothic or even of Jacobean architecture. I can only suppose that these gentlemen are unacquainted with the work of Wren and Vanbrugh, Hawksmoor, Gibbs, and Chambers. In the work of all these men there is latent a tradition, still unexhausted, still capable of development and application to the problems of modern architecture, and this question of tradition is of the first importance. We ourselves are, I believe, slowly moving towards the only possible standpoint in gradually concentrating on the tradition of English architecture of the 18th century, and our French critics seem to me to have shown little wisdom in deserting the splendid legacy of the Gabriels. What can be done by working on the lines of national architecture has been shown in some of the buildings of that accomplished architect Ludwig Hoffman, of Berlin; perhaps a little over-accentuated, a little over-strenuous, but, as far as I understand it, stamped with the genuine impress of the traditional architecture of the German States.

OUR COURSE, THEN, IS CLEAR.

We are not to be rushed by the outcries of our critics, or moved to hurry by frantic attacks on architects, made sometimes for reasons quite unconnected with architecture. We should pursue our steady way, strong in our knowledge of the past and in our faith in the future, and in that enthusiasm which is the privilege of creative artists. For this kinship of artists should be the real bond of union between architects, the source of that honourable fellowship, without which individual efforts must too often fail. And in concluding my remarks I would urge the value, and, indeed, the necessity, of this esprit de corps. The career of an architect is by no means an easy one. Unforeseen difficulties may arise in his way, and he may need that helping hand which, I hope, will never be refused by his colleagues. In all such cases we should stand by our brethren. Moreover, there are intricate and difficult questions to be determined by the profession in the near future, one in particular which has blocked the way for a generation and which has for years received the anxious consideration of successive Councils of this Institute. I have every hope that at a near date your Council will be in a position to offer you its considered suggestions for the solution of that question. I will only remind you that such questions can only be settled by pulling together. You will recollect Æsop's fable of the bundle of sticks. It is not to be supposed that any method can be devised which will be wholly acceptable to everybody. But when the solution to which I refer is suggested to you, I feel sure that this esprit de corps will have the full scope and bearing that it should have in a great profession such as ours, and that we shall not trust in vain to this same honourable sense of fellowship.

Viscount Milner proposed a vote of thanks to the President for his address, which had touched, with literary grace and a captivating charm of expression, upon a variety of subjects. Upon those which were controversial, the speaker felt he had no right, as a layman, to treat, but he might be permitted to express his admiration of the breadth, the conciseness, the courage with which the President had dealt with these points, not without a certain piquancy, but with never a trace of acrimony. The President's loyalty to the Mistress Art, and his enjoyment in her service, were obvious. Of all the arts, the most indispensable, and the one of greatest service to mankind, was architecture. Many men passed through life without being influenced by other arts, but there was no escape from architecture—all were exposed to its power, for better or worse, and anything calculated to raise the standard of our architecture, and maintain its highest ideal, was of the greatest importance to the State. While he would not do anything to repress individuality in art, there seemed a good deal to be said for the appointment of an ædile, and the establishment of a Ministry of Fine Arts, not to control art, but to protect the public against unworthy buildings. There had been a scheme launched for building about 120,000 cottages throughout the rural districts. He realised the necessity for more cottages in the countryside, but there arose a necessity, he thought, for some public control over the design. It would be a lamentable and terrible thing if our beautiful country was dowered with 120,000 cheap, yellow-brick

boxes of a cheaper type. He granted the necessity for more cottages, and that economy was an important factor, but he held it would be well for this wealthy nation to expend, say, £50 to £60 additional upon each cottage without a pecuniary return, to obviate the erection of unsightly and unsuitable houses. The charm of rural England was largely due to the picturesque old mansions and cottages sprinkled over it; they were an invaluable national possession, and to spend a few extra millions improving them, and on making the new cottages beautiful and seemly, would be a wise investment.

Mr. Cyril Cobb, Chairman of the London County Council, in seconding the vote of thanks, referred to the excellent services the President had rendered in helping to settle the conflicting interests involved in the formation of an adequate approach to the Mall from Charing Cross. Had not Mr. Blomfield been a distinguished architect, he would have shone as a distinguished diplomat, and he had successfully smoothed over and reconciled many difficulties in this thorny controversy.

The President, in acknowledging the vote of thanks, which was passed by acclamation, said Lord Milner would not succeed in drawing him into pronouncing an opinion as to the desirability, or otherwise, of appointing a Minister of Fine Arts, a question which promised, ere long, to become a burning one. The Institute was seriously considering whether statutory powers should be obtained to distinguish between those who were qualified, and those unqualified, to practise the art of architecture, and he hoped that when the scheme of the Council was submitted to the members, it would receive candid and unprejudiced consideration from the members of the profession. As to the proposed rural cottages, he trusted they would not be restricted to a minimum cost, but would be reasonably substantial and well-built.

REINFORCED CONCRETE IN THEORY AND PRACTICE.*

By Mr. Alexander Melville, C.E.

There is no necessity at the present day to explain what reinforced concrete is. It has been most successfully boomed; but, unlike many things which have been boomed, it has justified its use, and time has shown that it is more universally applicable than was at first supposed. The use alone of the component parts of reinforced concrete is very ancient history, but it was not until recently that their combination was employed deliberately for the purpose of curing economically their individual defects. Plain concrete is a most excellent material in many ways, and ideal, for instance, for such structures as engine-foundations, where weight is essential; but it has a serious deficiency in its inability to resist anything but the lowest tensile stress. Also, such tensile strength as it has is easily destroyed by vibration. By the employment of steel to take the tensile stress, we get a fabric at the same time low in cost and applicable to structures in which plain concrete would not have been used. How varied are its uses you will find by looking over the advertisements dealing with reinforced concrete. There you will find it is employed in almost any type of structure—even boats, incinerators, and tombstones. But one must not take advertisements too seriously. I speak from personal experience. Many things to which it is applied are, I presume, in a way of experiment, and one must recognise that by experiment to a very great extent the boundaries of its uses may be extended. But it is unfortunate that experimental uses should be put on the market and advertised as the soundest methods of construction for certain needs. By allowing their enthusiasm to run away with their judgment certain advocates have advocated the building of classes of structure which have proved failures, and have done reinforced concrete decided harm. Whatever it may be used for in the future, at the present state of knowledge of design it has limitations, and is not a universal salve for all structural ailments. It has often been advocated for things which proved unsuitable, uneconomical, and faddish. One must not forget, of course, that applications which appeared wrong a number of years ago have, as a result of experiment, consequent better design, and improved methods of working now been accepted as right, and are established. I think there is too much talk about "systems." It makes for confusion in the mind of one who does not understand the principles underlying all designs. There are a great many who claim a new system and take out a patent by virtue of cranking a bar in some new place. But perhaps this is only natural in the rush to sell at the beginning of the demand. Unfortunately, the older civil engineers were disinclined to take up seriously a method of construction apparently—possibly because, for the purpose of design, Molesworth was—useless. But as reinforced concrete was a fabric of undoubted value, a new branch of the profession was of necessity created. Designs got into hands of specialists, and as the younger engineers were at first as shy of the new fabric as their elders, staffs were not transferable, and the specialists had to call on the University men as their assistants. Thus were the numbers in an already overstocked profession increased. Work in this country for the engineer was becoming less plentiful, and younger members had visions of being exiled abroad—stranded, in all probability, in some lonely quarter without another European resident. This was not pleasant, I know. I was one of the visionaries. We became less dignified, and considered reinforced concrete not such a bad thing, after all. It was worth considering as an alternative to exile. A more cheerful vision formed before the eyes of younger members of the declining profession; they became enthusiastic, and a rush took place for patents, and engineers again hoped to make a fortune. Commercial gentlemen joined in the rush. It was they who became expert in talking of engineering matters. I recall the case of a gentleman being ushered into my room as the credited agent of a well-known firm who have a "system." He was unaware that I was an engineer, and hoped to impress by a continuous strain of talk and an unending variety of photographs. When I managed to get in a question or two and a few contradictions, he looked at me, sized up the situation, and became brutally frank. "Look here," he said, "I know nothing about this subject. I travelled for cigars before. I wish you would give me a few tips." He had been recently appointed, and he asked me to give him a few of the questions he was likely to be asked, and what the answers should be. There is nothing wrong in this type of traveller; only, their principals should not make the mistake of advertising them as engineers. This does illimitable harm to the principal in the long run, and, what is worse, reacts on the use of reinforced concrete. But to get back to the rush for patents and its result. Some of the systems are indicative of hasty consideration, and are beginning to assume different form now, when considered in cool and sober sense. However, the old patent is there, and allows one to talk of an exclusive system. The fact of having a patent also, I find, impresses a certain class of individual. I cannot but think, also, that not a few specialists make a difference in the placing and the cranking of bars and the form of stirrups deliberately for the purpose of being able to talk about "a system." I believe that gradually so-called systems will disappear, and work will be carried out to the designs of engineers, as it was before the days of reinforced concrete. Before this comes about, however, I am afraid we will have to listen to the advantages of the various systems from their biassed advocates for many years. In listening to them, I would advise you never to allow yourself to be impressed at the time, but to consider everything coolly, and alone, next day. I find this a most excellent principle to follow. If there is something you are not quite clear about, ask the representative to call again. He will run to you. Generally speaking, you will be on safe ground if you clear him out as soon as he has answered your queries. In starting to consider any of their designs, remember that it does not matter what the particular system is, or whether it has a name in hieroglyphics: there is nothing mysterious about it, except, possibly, the special advantages claimed. The same principles underlie, or should underlie, all designs. Indeed, the most difficult problem is one which engineers and architects have studied, and without the use of a book on reinforced concrete—namely, the determination of the stresses in a member of a structure. When comparing various designs for the same structure, one finds, as in dealing with any other structural material, that there is every possible degree of goodness or badness, and in this lies the difference between the various systems as carried out. The various so-called systems are legion. I have not time to explain their individual advantages, or discuss the claims that are made for them, or even describe their particular fads. Some I dare not describe, as I would be apt to confuse them. There is nothing wrong with any well-known system, because there is nothing wrong fundamentally with the combination of steel and concrete. I know a builder who undertook to erect a small single-story building in reinforced concrete without the help of a specialist. When the walls were half-up, he proudly asked me to inspect his work. To my astonishment, I found an extraordinary disposition of bars appearing out of the concrete. They were twisted in all fashions, and brazed at junctions, without any apparent reason. Gradually I understood, and could not restrain my laughter. But I did not offend the builder. "Yes," he said, "so far the walls are built entirely with ends and other scraps of bedsteads." I may say he disdained patenting his system, and yet that building has been standing for a number of years. I do not know that I could unreservedly recommend this bedstead system; but yet it has its use, and it must have been a very economical design.

WHAT ONE OUGHT TO DO.

in comparing competition designs, is never to think of a system at all, but look for good design, and remember that all designs we look at are, or ought to be, based on the same fundamental principles. Another thing one should do is to find the amount of steel and concrete employed by each designer, and if you find one which is considerably different, look into his design most carefully, for it stands to reason that, in well-designed work, if the same loading factor of safety be taken, there can be very little variation in the quantities of these materials. It is advisable also to see that the quantities given are approximately those that go into the work of the successful tenderer. There is a type of construction which I find some are apt to place under the heading of reinforced concrete; but a little consideration would show it is something quite different. I refer to the fireproofing of steel structures by encasing in concrete or fireclay blocks and slabs. These blocks and slabs are not intended to be stressed, but are used merely as a protection of steelwork against damage by fire. I pointed out earlier that structures had been erected in reinforced concrete which were not suitable for its use in the present state of knowledge. I would like to name now a few structures to which it is admirably adapted, if well designed and well-constructed. First of all, a word as to its advantages. It forms a monolithic structure, and thus makes a much sounder building than the old disjointed method of building steelwork loosely into stone- or brick-work. It is fireproof in varying degrees, depending on the aggregate used in the concrete and the cover of the steel. It is economical, both in first cost and in maintenance. In such structures, where steelwork is exposed, the cost of frequent painting is saved. If properly embedded in the concrete, the steel will not corrode under water. A consideration on expensive sites,

* A lecture read at the Northern Polytechnic Institute Friday, Oct. 3, 1913.

also, is the possible saving of room in the thickness of the walls. For bridge-work, reinforced concrete is admirably adapted. It is economical, particularly in upkeep. In few cases but that of a high viaduct over a river, with much traffic, is the erection expensive. Again, I think it is much more capable of architectural treatment than a steel structure. It is a highly suitable material for piles and for jetties generally. There is no corrosion of the steel, and no rotting as in timber. Toredos find it indigestible. It is also highly suitable for retaining-walls and for tanks, in both cases being economical and saving considerable room compared with stonework. In tanks, also, there is not the maintenance that is chargeable to steel. It is being used with increasing frequency, and is thoroughly satisfactory, for such structures as silos. In floors, columns, and girders in factory and public buildings it is also employed satisfactorily; but I do not know that it is to be recommended for walls in the majority of buildings. Walls can be made thoroughly sound and very much thinner than is the case with the older methods; but I am afraid that the architect with a reputation for a good elevation—and this is the only part of a building that later generations consider—will wish something more than strength. For factory walls it is all right if there is no intention of future extension; but if there is, and openings for doors, etc., are to be cut, or the face of the building taken down for the purpose of joining, I am afraid one would be faced with a tricky problem. It would be almost necessary, also, to employ the same experts for the extension, as an accurate knowledge of the position of the reinforcements and the original method of design would be essential for safe working. It would also be necessary to employ him, so that responsibility for any damage to the old building could be fixed. We shall find the most popular type of public building in the future will be a reinforced-concrete-framed structure with reinforced-concrete floors and stone or brick thin walls. For raft-foundation work, reinforced concrete is invaluable, even although it is impossible to do more than guess the external forces acting on it. (Competitive designs for a raft would be excellent in indicating who are our bold engineers and who are our timid.)

THE CONTRACT.

When an architect has a structure in reinforced concrete to carry out, he employs, either through choice or compulsion, a specialist, and says: "Look here, your representative is the most superb talker I have come across. I want you to design some work for me." They look pleased, and give him quantities and drawings, which he submits to all contractors in sundry, or a few of unimpeachable character, and the contract is fixed as the result of a competition in price only. In the second case he deals immediately with the contractor, and the contractor sends the inquiry to his pet specialist, or to the specialist to whom he has tied himself under money penalty. In this case the contract is fixed as the result of a competition in price and design. But in this case design is merely a question of quantities, as no specialist does, or has time to, make complete drawings for the job in the short time at his disposal before it is tendered for. Thus it looks as if the first method would assure the best job being made. There is, however, another point to consider. By dealing with the contractor, you have only one man to deal with; but by adapting the first method, you are at one corner of a triangle, and if anything goes wrong with the work, you rather wish you were at the end of a straight line leading direct to one on whom you could fix responsibility. This, however, is not a point to be much afraid of if one is careful to select a thoroughly capable firm of specialists to design the work, and, what is quite as important, to allow only those contractors to tender whose workmanship is beyond suspicion, and who have a thorough understanding of the importance of keeping strictly to the working drawings, although they may show, in certain places, very awkward pieces of construction. Do not on any account allow plasterers or others whose knowledge of concrete-work is based on the putting in of concrete foundations, specified at 6 to 1, executed at 10 to 1. If it is their first tender for reinforced-concrete work, their prices will be alluringly low, and if there is a good clerk of works on the contract, they will have to be a firm of substantial standing to withstand the monetary loss. Another very important factor is the employment of a thoroughly good clerk of works—not an habitual growler, or one who spends all his time making test-cubes, but a man who really understands the class of work. A good clerk of works is a blessing to a job and to the contractor. He will not keep work back, but will do his best to help a contractor to get ahead quickly. He will be decided as to his reading of the specification, and he will stand no attempt at scamping or inferior workmanship. His advice will be given freely as to the scheme of operations, and it is often invaluable, as he has had experience of the methods of work of various contractors, and is in a position, if he be an intelligent man, to compare them and see clearly what are the best. A good contractor, having secured a contract, studies the plans thoroughly to consider how he can do the work most expeditiously and economically. The first point he must decide is the lay out of the job—where his plant is to be placed; whether his steel is to be assembled on the job or in his yard; whether to use hoists, cranes, or a movable mixer and spout.

CARRYING OUT THE WORK.

His next consideration will be the arranging of a staff. This, of course, will depend on the nature and size of the work. If the job is of considerable size, he will have a resident manager directly responsible to his office for the carrying out of the work. Directly in touch with the manager will be those in charge of the various departments of the work—carpenter foreman, steelwork foreman, concretor foreman, excavator foreman, timekeeper, and bookkeeper. In touch with these head-foremen will be sub-foremen or gangers over each squad. Having settled his staff, the question arises how the work is to be carried out—every part to be tackled at once, or in sections, and which section first—with a view to continuous employment of a full staff of men throughout. This is often one of the most difficult parts to manage. Take the case of a building of two wings and a cross-building—a U on plan. A good method to adopt in this case would be to make a start on one wing first, and then put the joiners on to the other while the steel is being laid and concreted in at the first wing. It would not be difficult, if this method of working the various trades on alternate wings can be carried out, to carry on the work at full bore throughout. This is, of course, a simple case. Others I have come across are very difficult to plan. If work is carried on in a spasmodic fashion, as in the instance already taken, if both wings were carried on simultaneously with the same trade, a contractor would never make a satisfactory job. He would continually be taking on complete gangs, and would thus find it difficult to get a good set of men. Work would be slow, and, being carried out by casual labour, not of first-class order. Having made all preliminary arrangements, the contractor must consider the method of timbering to be employed. If he is wise, he will send a typical drawing to the job, showing generally how the foreman is to plan his work. This typical drawing is usually sufficient, and an efficient foreman will adopt the method shown to all details of the work. In fixing on a method, the two main points for consideration are "ease in striking and adaptability to alteration." Such a thing as a wall-form need only be considered from a point of view of ease in handling and strength for continual re-use. But in the case of column-casings, one must consider, as well as the foregoing, adaptability to alteration. The columns on the second story of a building are invariably of smaller cross-sectional area than those immediately below them, so that if the casings are to be used over again, they must be built with a view to saving as much labour as possible in alteration. We find the same problem in beams and in floor-slabs, due to alteration in beams, but not to the same extent as we come across in columns. When a floor is concreted, the order in striking is: columns, beam-sides, and floor-slabs—the under side of beams being left until long after the rest has been cleaned away. This is the order that must be considered when one is planning the timbering, unless he is prepared to use the job as a timber-store. When a floor is struck for the purpose of using the timber above, there are no struts left but those under the beams. It is therefore inadvisable, when timbering for the next floor, to place struts anywhere but above the beams, the concrete in the floor-slab being too green to take much load. Thus it becomes advisable to support all the timbering on struts above the beams, and this is the method of support almost universally employed. As a rule, a cross-head is placed on the top of the strut, and on this the beam-side forms rest. Among the side of the forms a runner is fastened, and on this runner rests the joists for the floor-slabs. It is thus possible to strike everything else without disturbing the struts and timbering of the under-side of the beams. Unless great care is taken, considerable damage is done to the timbering—particularly that for the floor-slabs—when striking. A method sometimes employed in America, but which I have never seen here, is to use a double horse for lowering forms. This consists of a light movable framework not unlike an inverted four-legged table. These legs reach close to the ceiling, and between each end pair is stretched a rope, into which the timbering is placed. The ropes run through pulleys, and are then passed down, and the forms are lowered with motherly care. I have found quite a successful method is to make our built struts composed of No. 2, 6in. by 2½in., with 2½in. distance-pieces every 4ft. or so apart. When striking, a handy scaffold can be formed by placing runners through the struts, supporting adjoining beams, and resting on the distance-pieces. On planks placed on these runners the men striking can work, and hand the forms down carefully.

TIMBERING

is a very heavy item in reinforced-concrete work, and one which is a considerable drain on a contractor's resources, as it has to be used over and over again, until it is scrap, before he gets a full return for his expenditure. When their accounts are due, merchants will not be put off the way contractors are by quantity surveyors. A contractor naturally tries to save as much in his timbering as possible. Some try to save by using material of small scantling; but this is false economy. There is relatively more value to be got out of material of stouter section, particularly with boards. A standard thickness for these should be 1½in. Anything less is liable to much damage in striking. Beam bottoms, particularly, should be 2in.

STEELWORK.

A contractor has also to consider handling steelwork in the most efficient and least costly way. Let us hope, for the sake of his finances, that he has not estimated on the figure specialists inform us the labour cost is. For ease in working, the steel should be laid out in separate stacks of the various scantlings, and where possible in separate stacks of the various lengths as well. The workers can then find any bar that is required immediately. This takes some labour on the arrival of material, but it pays.

Before it is placed on the forms, all the steel has to be bent to some shape or form, and this is most conveniently executed without the use of any power-driven machine. There are many useful hand-machines on the market, such as the "Kennedy," but all I have come across are slow when dealing with large sections. For bars of 1in. diameter and down they are handy and make a good job. Above that they are usually worked by means of a ratchet, which is slow work, or, if not, the strain is such that some part is apt to give way. A stoppage is an expensive matter, and one cannot always keep a complete stock of spare parts. I find

the simplest and most effective method of dealing with all sizes except the highest is by employing tubes with strong ferrules at the ends. One merely slips the tubes over the rods so that the end coincides with the position of the bend, and pulls the other end round to the required angle. Those tubes are of varying lengths and strength, depending on the diameter of the bars to be bent; but a handy length for bars up to 1¼in. diameter is 6ft. They are not expensive, and a stock can be kept. Their fault is that they tend to burst at the ends, so it is wise to have long strong ferrules screwed or shrunk on. For bending stirrups, a small tube 18in. long may be used as already described, or, what is probably the most handy, a steel claw. This claw is like a two-pronged fork, the prongs being shaped on side view like a mark of interrogation. When the steel is bent, and the stirrups made, say, for a beam, the various parts have now to be assembled. This is best done on trestles, so that men may work all round it with ease. The beam being built, it is placed in position on the shuttering already prepared for its reception. It is necessary to keep the steel from resting on the boards when concreting, and a convenient method of doing this is placing little wedge-shaped pieces of concrete on the forms to begin with, and then resting the steel on these. These blocks are made of rich concrete in moulds, and in lengths corresponding to the widths of the beams in which they are to be placed. In section they are about ¾in. deep, and varying in width from 1½in. at the top to 1in. at the bottom. Being of concrete, they are not removed, but are concreted in, and, being wedge-shaped in section, there is no fear of them falling out on removal of the centering. When the steel is all placed in position, the next process is concreting.

THE MIXING OF THE CONCRETE

should be done by a mechanical mixer of the batch type, which gives the most satisfactory results. From a contractor's point of view, also, it is the most economical, and allows of much more speed in working than mixing by hand. From the mixer the concrete must be conveyed rapidly to where it is to be deposited, and this may be done by barrows and hoists, cranes and skips, or lifting-buckets direct from the mixer, depositing into a bin at the level required, or into the funnel of a spout. The mixer may be stationary or movable. Each method has its merits, depending on the nature of the particular job, the main thing being to deposit it rapidly and without dropping from a height.

TAMPING THE CONCRETE.

The concrete must be well tamped in position, and carefully worked round the rods, so that it will adhere everywhere. Most tampers in the market, I find, are much too heavy for general work, and tend to tire the men and induce them to scamp the tamping whenever they are not watched. It is quite possible to make as good a job with a light tamper, if used well, as with a heavy one. For beams, I find the best type of tamper to be a ½in. rod bent at about 2in. from the bottom at right angles and slightly feathered. With this, the concrete can be well worked round stirrups and rods. To make a good face on walls of beam-sides, there is nothing better than a shovel worked up and down against the shuttering. For floor-slabs, a ½in. plate 6ft. by 6ft. riveted to the end of a handle answers well. Another good method is to use a wooden roller, which has this advantage—that it is not so apt to jar the work by causing vibration in the forms. When filling columns and walls, it is desirable to hammer the form with wooden mallets. This aids in giving a dense concrete, and helps to make a smooth finish. In concreting floor-slabs and beams, it is well to start at the farthest point from the hoist when it is being deposited from barrows, so that no wheeling will be done over green concrete. It is advisable also to have an experienced man stationed underneath to watch for any deflections, so that work can be stopped at once, and extra staying or wedging executed before initial set takes place. In few jobs is it possible to finish a floor throughout in one day, so the question arises, how and where to make a stop. These should be made as near as possible to the centre of the span, and the stop should be made vertical against a board placed on edge for the purpose. When starting next day, this joint must be thoroughly wetted and brushed before depositing fresh concrete, and in some cases coated with a rich mortar, or, if necessary, the face roughened. Before depositing any concrete, the forms should be well watered, and of course it is necessary also on deposited concrete for about a week after laying. It makes a sounder concrete, and prevents cracks due to quick drying. Where a floor is finished, and joiners have erected the cases for the columns above, and more so when columns and walls have been concreted, and joiners start to lay the boarding for the floors, shavings and sawdust accumulate on the top of the concrete of columns and walls. No temporary handy covering I know of will keep the concrete free from this. The best method to get rid of it before concreting is started—and it must be got rid of—is to form traps in the column-cases and the wall-shuttering at the level at which the concrete was stopped. The concrete surface is then swilled with water, and the shavings float off through the traps or doors. If plenty of water is used, a thoroughly clean surface can be obtained on which to start depositing the fresh concrete. It is, of course, advisable to see that the gang is not too quick. I have now covered a fairly large field in reinforced-concrete work, and tried to express how it strikes a contractor who has been in the midst of its troubles for a considerable number of years.

CEMENT, CONCRETE, AND BRICKS.*

There may be other experts in the kingdom who know more about one or other of the three materials dealt with in this excellent textbook, but there is no one who combines so intimate a knowledge and long experience of all three as its author, whose many previous books on one or the other are familiar to all readers. The insight thus gained has enabled him adequately to grasp what is really almost a keystone principle of construction, and that is the intimate relationship which exists between the three. That at once renders the book of more value to the architect than nine out of ten kindred works of its kind. For it is only the intelligent recognition of this principle that will facilitate further lines of study of all three materials, and indicate the advantages of their wise use in conjunction with each other, or apart, as necessity dictates. Given that, and we shall see fewer and fewer and fewer of the abortions perpetrated in either material, and the real architect will increasingly develop powers of design that will give us true architecture, and not the mere copyism or distortion of old forms.

It is well noted by Mr. Searle how different has been the insight displayed of those concerned into the need for scientific research in connection with the production of the three materials. Till very recently, with a few exceptions, the mass of the brickmakers of this country have gone on working by rule of thumb, and equally neglected the complex problems connected with their craft and the duty of pressing on those concerned the advantages of using the products of their manufacture. Very different has it been with the cement-makers. They had the wisdom from the first to enlist the scientist and to spend largely on experiment, and to lose no opportunity of impressing architects, engineers, and builders with the advantages of their material. In a lesser degree—and in some instances with something like charlatanism—the same may be said with regard to concrete. Had the brickmakers spent a tenth of the pains and money in making the best of their opportunities, and letting architects and builders know it, that the cement producers and concrete specialists have done during the last ten years, many of them would not have had to deplore the dull times they have had, and the—sometimes—quite unwise and uncalled for abandonment of brick for cement and concrete, often simply because their advantages, real or imaginary, were more ably demonstrated to, or more cleverly pressed on, users.

Mr. Searle is fair to all; and the architect or builder who assimilates the contents of his book will find himself able to discriminate between the advantages of either in specific cases, and to distinguish between the truth and falsehood of the claims made for same. He deals successively with the raw materials for cement, the methods of its manufacture, its chemical and physical changes, and those which occur while it is setting and hardening; methods of testing, etc. Then he proceeds to consider the preparation of concrete, reinforced concrete, and its special properties and most reliable tests. Lastly, on similar lines he deals in equal detail with bricks.

The book is adequately illustrated, and will be permanently valued as a reliable contribution to the literature of a subject which of current date is not very attainable, except at the hands of those immediately interested.

* Cement, Concrete, and Bricks. By ALFRED B. SEARLE. London: Constable and Co., Ltd. 10s. 6d.

ACCRETION AT ESTUARY HARBOURS ON THE SOUTH COAST OF ENGLAND.

By GERALD O. CASE.

At a meeting of the Society of Engineers (Incorporated), held on Monday, November 3, a paper was read by Mr. Gerald O. Case on "Accretion at Estuary Harbours on the South Coast of England." After considering the sources of supply of material which accumulates in estuary harbours, the author outlined the causes of the travel of shingle, sand, and mud. On coasts where there is a predominant littoral drift in one direction, and a large supply of material, shingle or sand spits are built out from the mainland on the windward side across a tidal estuary, and salt marshes are almost invariably formed on the sheltered land side of such spits, while vegetation plays an important part in organising and controlling the accretion, causing it to take place at a much more rapid rate than it otherwise would. The foreshore plants slow down the currents and cause mud, brought down by the river, and sand brought in by the tide, to be deposited. The remains of the plants and the numerous animals which dwell among them help to form a fertile soil. As soon as grassed-over salt marshes have been formed in the estuary, and built up to about high-tide level, the neighbouring owners have, in most cases, built earth banks to reclaim the land.

The author referred in detail to the available historical and documentary evidence which enabled him to give a considerable amount of information on the rate of accretion. Particular reference was made to the estuaries of the Stour and Rother; the formation of a shingle spit between Fairlight Cliff and Hythe; the harbours of Lyme, Hythe, Romney, Appledore, and Rye; the formation of Dungeness Point and the erosion of the adjacent coast; and the Adur estuary. The principal conclusions drawn by the author were:

1. That where there is a plentiful supply of littoral drift a spit of shingle or sand is built out from the windward shore across the mouth of the estuary harbour.

2. That salt marshes are formed under the shelter of the spit, vegetation playing a very important part in collecting the mud and sand brought down by the river, and the sand brought in by the tide.

3. That while the prolongation of the spit increases the tidal scour at the outlet, the formation of the salt marshes decreases the scour.

4. That in places where the ebb tidal and river currents are sufficiently powerful to hinder littoral drift, an apposition type of shingle spit is formed on the windward side of the outlet, erosion occurring on the leeward side.

5. That if the supply of littoral drift is cut off during the process of prolongation of a spit, the end is turned round towards the land, forming a hooked spit.

6. That if the adjoining coast is being



NEW CHURCH, WOODLANDS, NEAR DONCASTER.—Mr. W. H. Wood, F.R.I.B.A., Architect.

eroded, then a narrow spit will be moved inland over the salt marshes at the same rate, keeping more or less in line with the coast.

NEW CHURCH, WOODLANDS.

This church, recently consecrated, of which we give herewith an exterior, and an interior and plan on another page, has been built to serve the needs of an entirely mining population. The village of Woodlands is built on Garden City lines, and the church stands on a corner of the village green. The church is built of brick, with red stone dressings, the roofs are of red tiles, and the spire is in white stone. The church accommodates 500 persons, and consists of nave, with north and south aisles, with tower and spire at the north west corner, a chancel with sacristy, choir vestry and organ chamber and morning chapel. Messrs. Mullins and Richardson, of Doncaster, are the builders. The architect is Mr. W. H. Wood, F.R.I.B.A., successor to the late Mr. C. Hodgson Fowler, F.S.A., of Newcastle on Tyne and Durham.

The Bishop of Stepney rededicated on Monday night the peal of bells in St. Leonard's parish church, Shoreditch. They have been repaired and rehung by Messrs. Warner, of Spitalfields. This has cost £500.

The extensions which have been made at the Glasgow police barracks for unmarried constables, in East Clyde street, have been formally opened. There is now accommodation for eighty men in the buildings, and the improvements include a billiard-room, a reading-room, and extended dormitories and bathrooms.

THE LONDON COUNTY COUNCIL.

At Tuesday's meeting of the London County Council, the Highways Committee submitted its legislative proposals for the Parliamentary Session of 1914. The view was expressed that the construction of a number of tramway sections to consolidate and link up the existing system is necessary, and closely concerns the future of the tramways undertaking, but that the failure which has attended the efforts of the Council in the past to obtain some of these powers makes it desirable to proceed with the utmost care. The Committee is considering the preparation of a comprehensive scheme for linking up and the extension to approved traffic points of the present tramway system for submission to Parliament in the season of 1915. The Committee, therefore, now

[illegible] recommendations to four schemes, either special in character, or involving comparatively little expenditure. The schemes recommended comprised an extension from the Farringdon-road terminus (at Charles-street) to a point near Ludgate circus; an extension from the Aldgate terminus to Mark-lane Station, via Mansell-street and Tower-hill; from the same terminus to Aldgate Station; and from Lee green to Eltham, via Eltham-road and Eltham High-street. The total length is under six miles, and the total cost of the four schemes is estimated at £125,880. In connection with this recommendation the Improvements Committee recommended that application be made to Parliament for authority to widen Eltham-road and Eltham High-street, and Mansell-street at its junction with Aldgate.

It was reported that the contracts with Messrs. Nicholls and Son (now Nicholls and Son, Limited), for the erection of 147 cottages and cottage flats and five shops on the western section of the Old Oak estate, Hammersmith, which were entered into in October, 1911, have now been completed. Owing to additional works ordered during the execution of the contracts, and to allowances made to the contractors in respect of increased wages paid to workmen, the total amount of the contracts (£27,715) will be exceeded by about £532.

It was decided to invite fresh tenders for rebuilding part of the fire-station at Clerkenwell, Messrs. Kerridge and Shaw, whose tender was recently accepted at £15,242, having intimated that they find themselves unable to undertake the work, and Messrs. W. Downs, who submitted the next lowest tender, having also declined to accept a contract, owing to increases in rates of wages.

The Building Act Committee submitted for approval a series of new by-laws for the regulation of lamps and signs overhanging the public way, and recommended that steps be taken to secure the sanction of the Local Government Board.

H.M. Consul-General at Tangier reports that tenders are invited by the Commission Générale des Adjudications et des Marchés for the construction of a building for the Controle de la Dette at Casablanca at an estimated cost of 44,000fr. (£1,760). Tenders will be received by "Mons. le Président de la Commission Générale des Adjudications, Dar En Niaba," Tangier, up to 11 a.m. on December 6.

The Australian Government has established State-owned brickworks in connection with the building of the Federal capital at Canberra. The first quarter of a million bricks have been produced. These are to be used in the construction of the main brick-kilns, shortly to be erected. The plant for the transport of materials from the railway station to the various works has been augmented. It now comprises six steam traction-engines and thirty-four road waggons.

Messrs. Baldry, Yerburgh, and Hutchinson, of Westminster and Mansfield, have obtained the contract for the completion of the second section of the Welland Ship Canal between Lake Ontario and Lake Erie. This section of the canal will be about four miles and one-third long, and will take nearly four years to complete. There will be two locks on the section, which will permit the passage of very much larger vessels than the present canal between the two lakes is able to accommodate. The amount of contract is stated to be about £1,100,000.

The city council of Chester decided at their last meeting to purchase for £2,000 a plot of land [illegible] acres in extent, lying between Cliveden-road, Hough Green, and Roberts-lane, Saltney, as a site for workmen's dwellings. It was suggested that land should be laid out on garden-village lines, with recreation-grounds, and a garden allotment for each tenant who desired it. A tramway from the city runs to within a hundred yards of the estate. The houses will be proceeded with fifty at a time. Building houses at twelve to the acre, the cost of the land will be 8½d. per square yard, or £25 per house, and assuming that a house may cost £200, the total cost will be £225 per house, and these can be let at 5s. per week and be no loss to the rates. Houses will at present be built to let at from 3s. 9d. to 5s. per week.

Building Intelligence.

ALEXANDRIA, VALE OF LEVEN.—H.R.H. Princess Louise, Duchess of Argyll, cut on Friday the first sod and planted the first tree on the site of a garden village about to be erected at Alexandria for the workers employed at some local motor works. Limited to twelve per acre, the houses will number about 250 in all, sites being reserved for halls, etc. The first houses are to be grouped in blocks of four, each containing two rooms and kitchen, with bathroom, scullery, pantry, and other conveniences, the sizes of the apartments being: Room (including octagonal oriel end), 17ft. 6in. by 11ft. 9in.; kitchen, 14ft. 6in. by 11ft. 9in.; bedroom, 10ft. 6in. by 8ft.; bathroom, 7ft. by 5ft.; scullery, 8ft. by 5ft. 6in.; and pantry, 4ft. by 3ft. The total cost of each house is estimated at £250, and the rent is to be 7s. 9d. per week, including rates and taxes, or £20 3s. per annum. Messrs. James Salmon and Son, F.R.I.B.A., Glasgow, are the architects of the scheme.

BECCLES.—The maltings and sweating kilns at Beccles belonging to Messrs. John Crisp and Son, Ltd., which were damaged by the fire that occurred last year, are being reinstated. Two of the maltings, together with the sweating kilns, are already finished, and are now in work again, various alterations having been made, and up-to-date machinery has been installed, together with an electrical plant. The contractor for the buildings is Mr. W. C. Reade, builder, of Aldeburgh. The architect is Mr. F. W. Skipper, 55, London-street, Norwich, who has had a wide experience in the building of maltings.

BEDMINSTER, BRISTOL.—A branch free library for South Bristol has been built on the site of the Temperance Hall at Bedminster, to replace a dark and inadequate institution, at a cost of £9,000, provided by Mr. George A. Wills. The new building is 102ft. in depth and 90ft. in width, and has an ornamental tower rising to a height of 63ft. The main entrance is in the centre of the building in East-street. Facing the entrance-hall, which has a groined ceiling, a corridor divides the library into halves. On the right hand is a newspaper room, 102ft. in length, with a section for juveniles at one end. A tile dado is carried to a height of four feet around the interior. To the left of the corridor are a stack room for the storage of the books, a magazine and reference room, and a librarian's room, which, the divisions consisting of glass screens, commands a view of practically all parts of the building. There is also a room for the repair of damaged books, and beneath this is the heating apparatus. On the first floor is a lecture-room 78ft. by 33ft., with a waggon-head ceiling. The walls, as well as the ceiling, are treated with ornamental plaster-work. There is a stage, with a retiring-room on each side. The floor, of concrete covered with maple flooring, is fireproof. There is also a mess-room for the staff on the first floor. The walls are of brick with stone dressing. Sir Frank Wills and Sons are the architects, and Messrs. A. Dowling and Son, also of Bristol, the contractors.

BENENDEN.—The ancient chapel at the east end of the south aisle of St. George's Church, Benenden, has, during the last three months, been undergoing a careful restoration. The Viscountess Goschen lately offered to restore the chapel as a memorial to her sisters. Mr. Geo. H. Fellowes Prynne, F.R.I.B.A., of Westminster, was consulted, and prepared the necessary designs. The old seats have been removed and the chapel has been refloored to its original levels. The new communicants' and altar steps are of white Sicilian marble, and the paving of the sanctuary is of polished light and dark green, grey, and white marble. The central passage is of similar material, while the flooring under the chairs, now facing east, is formed of oak blocks. An inlaid and polished marble altar is placed in a central position under the east window, and is surmounted by a blue and gold damask dossal and hangings. The lower part of the walls are covered with carved oak panelling, and oak parclose screens fill the two arches between the chapel and the chancel. Oak clergy stalls are placed on either side of the sanctuary. The restored chapel was dedicated on Friday, Oct. 31.

EDINBURGH.—The Episcopal Church of St. John the Evangelist, which occupies so commanding a site at the west end of Princes-street, and is rich in ecclesiastical associations, was built in 1816-18 from designs by William Burn, at a cost of £18,000, and is Gothic of the type then in vogue. Works of renovation have just been carried out at an outlay of about £3,000 from plans by Messrs. Peddie and Forbes Smith, of Edinburgh. The chancel has been rearranged; a new floor in black and white marble has been laid down; increased accommodation has been provided for the choir; new bench ends have been fitted on the choir stalls; an oak chancel screen of East Anglian type has been erected, and the whole of the chancel and sanctuary has been panelled in carved oak, into which several mural memorials have been adjusted. Dean Ramsay's old pulpit has been raised, over it has been placed a sounding-board, and new brass rails have been provided for the chancel. The dusky terracotta walls of the nave above the level of the window-sills have been repainted white, the fan-vaulted roof is now resplendent in a scheme of white and gold; the dark varnish which covered the pews and panelling of the nave has been scraped off, revealing the natural grey tint of the oak; while the old gallery at the west end, which extended across the whole breadth of the church, has been set back with a carved front, to within the width of the nave, leaving the aisles free. The west end of the south aisle has been converted into a baptistery, where has been set up a marble baptismal font presented in 1857 by the wife of Dean Ramsay. Over it has now been placed a cover in oak, in the form of a Gothic tabernacle of English 14th-century type, finished with a crocketted steeple, and surmounted by a gilded dove, symbolical of the Holy Spirit. The carving of the oak panelling in the chancel is varied in character and has its inspiration in the carved stalls of pre-Reformation date—about 1520—still existing in the chapel of King's College, Old Aberdeen, erected by Bishop Elphinstone. The oak work has been carved by Mr. J. S. Gibson, of Edinburgh. The external pinnacles and other stonework are being repaired.

HOVE.—A new parish hall, built and furnished by Mrs. Stephen Ralli as a memorial to her husband, was dedicated on All Saints' Day. The hall, which stands immediately outside Hove Station, is in the Georgian style. It includes an apartment for entertainments, with stage, dressing-rooms, and gallery, seating in all about 350 people, and is provided with a fireproof compartment for cinematograph and lantern displays. On the floor below, which, owing to a difference in levels, is lighted by daylight, is a gymnasium, bathroom, lavatory, and clubroom for boys. Above the hall are the committee-room and rooms for the use of girls' clubs. By a separate entrance on the ground floor access is given to a reading-room and billiard-room for the men's club. The architects are Messrs. Read and Macdonald, of 16, Cork-street, W., and the contractors were Messrs. Chapman, Lowry, and Puttick, of Grayshott, Hants.

LIVERPOOL.—The Earl of Derby inaugurated on Monday the Students' Union at Liverpool, the ceremony taking place in the Gilmour Hall of the new buildings erected, at a cost of £18,000, on a commanding site near the junction of Brownlow-hill and Bedford-street North. The block is devoted to the purposes of men's club, women's club, and debates. In the centre, between the two suites of clubrooms, is the hall given by Captain Gilmour, of West Kirby. The whole building has been erected from the designs of Professor C. H. Reilly, M.A., F.R.I.B.A., of the Liverpool School of Architecture.

Mr. P. J. Neary, architect, Newry, has been appointed town surveyor of Warrenpoint in the room of Mr. Wade, resigned.

Currente Calamo.

If a new "Apologia" for architecture is really our greatest need at the moment, certainly Mr. Blomfield gracefully and lucidly made it in his presidential address at the R.I.B.A. last Monday night. Whether the latest "familiar friend" who has worked himself up into imitation "polemics of the Neo-Gothic enthusiasts of the 'seventies'" over our own loss of the "fount of inspiration," and the "helpless ineptitude and dull impotence of Labour," was worth the President's paternal powder and shot is doubtful. One blows fluff away with a breath, not with cannon, and mere fluff and nothing else is the external criticism of the sort Mr. Blomfield devoted half his address to. As for its effect on "the general public," our own experience is that the public pays about as much attention to it as the world did to the Vicar of Wakefield's son's paradoxes. For the rest, denunciation is the stock in trade of the fledgling critic, whose little soul never swells with such vanity as when the statesman, the artist, or the man of letters wastes time on remonstrance with the self-constituted censor, who imitates the tub-thumpers in the Park, who know, if they make noise enough, some sort of an audience will gather.

Architects themselves are doing too good work to-day to heed this sort of thing. We say this with the knowledge and opportunities of comparison accumulated and utilised during a larger close acquaintance with, and observation of, architects and architecture than most can claim. Moreover, not only never was better work being done than now, but never were architects less disposed to waste their own time over wrangles about styles, or to notice the jeremiads of the distillers of Ruskin and water. And, most hopeful sign of all, never in our memory was real helpful criticism more thankfully welcomed by architects; never in their own friendly mutual interchange of experience was it more real and yet more considerate. It is only the fool who prophesies: the man of action and achievement forecasts, and Mr. Blomfield's pithy embodiment thereof admirably summed up the prospects of all real progress likely to be made in the future. Beyond all question the coming architects are, and will be, those who, genuinely alive to the lessons of the past, skilfully seize opportunities as they occur in plan and construction and material, concentrating all their power of design on the achievement of strength, refinement, and sincerity of expression.

Changes in the conditions of life and circumstance over which the architect has no more control than his fellow men—and that is not much—must, of course, be vigilantly studied, as they ever were by the great designers of the past. Even when such study is genuinely fruitful, recognition will come slowly from the mass of the people. That *will* come; but first must come that which we and those we work for have equally the right to demand—that the charlatan and the incompetent shall not do our work and leave us to be blamed for the result. Till esprit de corps has taught us to close our ranks and stand by each other, architects will be exploited, and architecture left to the mercies of the universal provider. We are glad to learn from the President's few words of reference to the matter, that the Council of the R.I.B.A. will at a near date be in a position to offer its considered suggestions for the solution of the problems which bars *the* initial step towards the just recognition of the rights and qualifications of the architect. We are free to confess a little more about that and one or two other kindred pressing needs would have been more welcome than much of the fore part of Mr. Blomfield's otherwise instructive and interesting address.

Sir Aston Webb's tribute to the British workman at the dinner given by the King last Friday was well deserved. Well directed, well paid, and well employed, the British workman need fear no comparison. That he has been well employed at Buckingham Palace must be patent to everybody. What we mean is that when skill to devise and ability to carry out work like the job at Buckingham Palace are forthcoming, "the methods of the builder" are as fully competent as ever to insure the best work in the shortest possible time, without any "bringing more closely into line" with those of the engineer, whatever the writer who does the notes for the *Times* "Engineering Supplement" means by that. That slack builders, slack engineers, and slack workmen are as unprofitable to the Commonwealth as the rest of its incompetents goes without saying; and we heartily and loyally thank the King that he has practically preached so excellent a homily on his well-remembered text, "Wake up, England!" But the King—unlike some of the smug hypocrites who preach to the workman, and the builder, and the architect—did what some grumbling clients neglect to do. He picked the best architect and builders for his work, thoughtfully gave them all reasonable facilities, and has generously acknowledged the manner in which they have been utilised, not forgetting the skilled service of the good workmen who are always to be had when treated well and directed by those who know how to organise and manage them.

It is unfortunately the case that where things are better in the building trades it is due not to the increase of ordinary work, but to the fortunately greater number of public buildings that are in course of erection as compared with the years immediately preceding this. The Lord Dean of Guild of Edinburgh emphasised this last Monday in his Annual Report. This time last year he had unfortunately a dismal tale to tell with regard to the building trade of the city, when the value of the work passed through the Court amounted to only £323,385, the smallest value recorded since the year 1904, which year represented the high tide of building prosperity, the value then being not far off a million sterling. This year a considerable improvement has taken place in the value of the building work in the city, the estimated sum being £521,663, an increase over last year amounting to £198,278. But when one comes to look into details, one is struck with the fact that things are not quite so rosy as they appear. In explanation of this, the Dean called attention to the following figures as to the warrants granted this year and the preceding year—From November to October, 1911-1912, the number of villas was 20, as compared with 20 in 1912-1913; self-contained houses 80, as compared with 10 in 1912-1913; alterations 752, as compared with 150 in 1912-1913; public or other buildings, 69, as compared with 61 in 1912-1913; tenements 8, as compared with none in 1912-1913; shops in tenements 8, as compared with none in 1912-1913. Except with regard to villas, where the number was the same, and public buildings where the number only lagged behind by 8, the bulk of the business during the past session was a long way short of what it was in the previous one, and he thought it must be a unique condition of matters when they found that not a single new tenement came before the Court during the twelve months. How came it, then, that, notwithstanding this stagnation with regard to residential property, the total value of building operations so largely exceeded that of the previous year? It was accounted for by the number of public buildings on which large expenditure had been incurred. As examples of these, he quoted the Labour Exchange, Lauriston; the Veterinary College, Summerhall; Agricultural College, George-square; and additions to the Museum. The above four buildings accounted for £133,000. Picture houses in various parts of the city accounted for £60,000. New schools accounted for £55,000. These items alone amounted to £248,000, and as the total sum for this year only amounted to £521,663, the comparatively small sum of £273,663 was all that was left to represent the cost of building so far as the residential and trading interests of the city were concerned.

It is the same to a great extent, of course, here in London, and in several of the provincial towns, and we need be thankful it is so. New public buildings and colleges and schools and picture houses are no doubt very important requirements in their respective ways, but we cannot go on indefinitely building such unless the general progress of the country, both in population and trade, keeps pace in something like the same proportions. No wonder, therefore, the Dean asked what was going to happen when the town was satiated with colleges and schools and museums and picture houses. What, then, was going to be found for the building trade to undertake? We all know well enough what is waiting to be done and why no one begins! The legislative disturbance of the past three years, and the crushing burdens placed on property owners and builders have simply paralysed the ordinary building trades.

By the way, we are glad to see that Lord Dean Carter, who has resigned, is succeeded by a good man whose name is familiar to most of our readers. Mr. Henry, who was appointed Dean of Guild on Monday, is senior partner of the firm of Messrs. Henry and Maclennan, architects, well known in Edinburgh. He is a Fellow of the Royal Institute of British Architects. His work has been of a varied nature, comprising church work, new halls, and important enlargement and reconstruction schemes, the costs varying from £4,000 to £8,000. Many of his works in Edinburgh are well known, such as the Mid-Lothian County Buildings, which cost over £40,000; the Royal British Hotel, over £20,000; the Palace Hotel Buildings, Princes-street, twice reconstructed and altered at a cost of over £20,000; while at three other hotels in Princes-street large internal alterations were made, costing over £30,000; also large additions to public buildings, private houses, shop and warehouse work. On many country estates in Perthshire, Argyllshire, Haddingtonshire, Dumfriesshire, Berwickshire, and Mid-Lothian, he has carried out important works

in the shape of new mansion-houses and extensive additions and alterations, new lodges, and other estate work, in several cases the cost running from £10,000 to £20,000. He has also had considerable experience of valuation work. Mr. Henry has been for the last nine years a member of the Dean of Guild Court, Edinburgh. He is an ex Moderator of the High Constables of Holyrood House, president of the Edinburgh Burns Club, and of the Edinburgh Perthshire Club, Rutland-square. For many years he took considerable interest in Freemasonry, having been one of the founders, and afterwards Master of Lodge Dramatic and Arts, and Grand Architect to the Grand Lodge of Scotland.

It seems possible that the architect of the coming new Houses of Parliament in Dublin whoever he may be—will have to incorporate in his design various features which, when the Act of Union was passed, and the old home of the last Irish Parliament was dismantled, found their way somehow all over the kingdom. Suggestions are now made that when Ireland once more has Home Rule, these relics of the earlier senate should, for sentimental reasons, be returned to Dublin. Liverpool, it is said, would have to surrender a set of historical statues. Four in number, these are the symbolical figures which now surmount the real balcony of the town-hall and look down on the flags. Under what circumstances they came to occupy their present position is not very clear, but, it is asserted locally, there is no question that they did once adorn the old Senate House in College Green, Dublin.

The lecture delivered last Friday by Mr. Alexander Melville at the Northern Polytechnic Institution, which we give on another page, is one of the most sensible and practical we have read. The cautions given with regard to the pretensions of the exploiters of some of the "systems," and their plausible methods of pushing them, are needed. We have confined ourselves in these pages to the illustration and recommendation of really reliable systems. There may be others. There certainly, as Mr. Melville says, are some which have proved failures, and instances are not far to seek where reinforced concrete has been unsuitably, uneconomically, and capriciously used. What the trained architect or engineer will do is to look for good designs based on the fundamental principles thereof, and to consider carefully the best means of insuring that his design is properly carried out. All Mr. Melville's cautions under this head are valuable, and the many hints he gives for guidance while the work is in progress are practical and to the point.

Where property is mortgaged the amount of the mortgage must be taken into account in assessing the site value for the Land Taxes. It is now clear, from a recent decision of the Court, that where there is more than one mortgage they must all be considered in that valuation. In the case to which we refer the property was mortgaged in 1894 for £12,500; in 1897 there was a further charge of £4,000, and in 1899 still another charge for £1,000, making total mortgages of £17,500. The Commissioners in 1911 assessed the site value at £7,000, thus leaving a good margin upon which to charge increment value duty upon a subsequent sale! On application under the Act for a substituted site value, they increased it to £7,300, taking into account, as the value on the "occasion," the one first mortgage. The owner contended that they must consider all three mortgages, and the Referee supported this view. The Commissioners appealed, but on coming into Court the Attorney-General gave it up by admitting that all the mortgages should be taken into account, and so the appeal was dismissed with costs against the Commissioners, who must now assess over again. The point of principle involved is of much practical interest to builders as well as to property owners, because cases of further charges after a first mortgage are numerous, for various reasons.

The encouragement of enterprise in building, and thus the betterment of builders' business, was one of the avowed objects of the Undeveloped Land Duty in the Finance Act. Incidentally, of course, the effect of using such urban land for building would be to raise assessments and so increase the yield of both rates and taxes. This duty, therefore, becomes, in fact, a fine upon owners who keep their land from being put to its best use as regards the community. But where such land was found to be let for a term or a tenancy under some lease or agreement it was clear that to tax an owner for not doing what he was unable to do would be unfair. So the Act provided that where land used for agricultural or similar purposes was held under a lease giving the owner power to determine the holding, the earliest date at which this could be done should be taken as that from which the duty should be charged. In a recent case (*Times*, Oct. 31) some agricultural land at Southend-on-Sea had been assessed with this duty. It was held under a lease giving the owners power to resume possession of the land whenever they wanted it for building or other purposes. They did not wish to build upon it, and make roads, etc., but the Court, confirming the Commissioners, held that the desire of the owners not to determine the tenancy did not affect the question. They had power to do so, and, therefore, under the Act duty was chargeable until they did. So it is probable that this land will now be profitably developed for building purposes.

St. James's Hall, Great Portland-street, W. which was built in 1907-8, from plans by Messrs. Joseph and Smithem, on the site of the disused church of St. Paul—after being closed for over six months, will, redecorated and reupholstered, and rechristened "The Philharmonic Hall," be reopened on the 20th inst. The new hall will seat 1,200 people, thus coming in capacity between Queen's Hall and the Bechstein Hall, which accommodate respectively 2,500 and 600 persons.

Some time ago it was resolved that by way of decoration for the corridors of the Usher Hall, Edinburgh, a series of portrait medallions of Scottish poets and song-writers and representative musicians of world-wide fame should be placed over the doorways. The number selected up to the present includes twenty-four representative poets and musicians, and a few others remain to be chosen by a sub-committee. The commission for the execution of the medallions has been entrusted to Mr. H. S. Gamley, A.R.S.A., sculptor, Edinburgh.

Messrs. Warren and Wetmore, of New York, have been appointed architects to draw up plans for the new Canadian Northern Railway Company's station to be constructed in connection with the Mount Royal Tunnel and the proposed electric-train service from Montreal to the Model City. Construction of the station will not be commenced until the spring. The same railway company have let the contract for the electrification of the Mount Royal Tunnel and terminals to the Canadian General Electric Company, Toronto, the cost being about 500,000dols.

OBITUARY.

Mr. Wm. Newton Bakewell, M.Inst.C.E., of Streatham, S.W., died at Keswick on Monday last, aged sixty-eight years. He was the contractor's engineer at the erection of the Forth Bridge, and when the freedom of Durham was conferred on the late Sir William Arrol the latter acknowledged that to Mr. Bakewell's care and accuracy in the setting-out of the work was due the uniform correctness with which all parts of the bridge met so completely. Mr. Bakewell was afterwards employed upon the setting-out of the Tower Bridge. Subsequently, at the request of Sir Benjamin Baker, he went to Egypt, where he was engaged at the building of the Nile dam. He was also connected with other works, notably the building of the English bridge at Cairo, and with schemes of irrigation in Asia Minor. His last work before retirement, which took place two years ago, was the survey, for Sir John Jackson, of two harbours on the Black Sea—one at Trezibond and the other at Samsun. Mr. Bakewell's improvements to the theodolite have proved of great practical utility.

After twelve months' illness Mr. George Ford, city surveyor of St. Albans for a period of nearly thirty-four years, passed to his rest at his residence, "Minterne," Gombards, St. Albans, on Saturday. Mr. Ford, who was in his seventy-fifth year, was the son of Mr. George Ford, of Hampstead, and having been connected with the building trade in various places, went to St. Albans in 1871 to take up a position with Messrs. Miskin and Sons, builders and contractors. He remained with them for eight years, and then, a vacancy occurring for the post of city surveyor, he applied and was, on December 10, 1879, appointed. That year, 1879, marked the extension of the city boundaries prior to that now in progress. Mr. Ford carried out the extensive scheme for the efficient sewering of St. Albans undertaken about that time, and was responsible for the laying-out of the sewage disposal works. Up to 1907, when Mr. A. Eade was appointed superintendent, he had those works under his personal control. His chief work was the laying-out of the Clarence Park and recreation-ground, the gift of the late Sir J. Blundell Maple to St. Albans, declared open on July 23, 1894, by the late Duke of Cambridge. Ten years earlier he had laid out the public cemetery, in which his remains now rest, and the chapel and cemetery superintendent's house were erected from his designs. The plans for the diphtheria hospital were also prepared in his department, as were those for the city police-station, the fire-brigade station, and other public departments. A great volume of additional work fell upon him in connection with the present city extension scheme. He resigned owing to ill-health on Lady Day of this year. He is survived by Mrs. Ford and two daughters.

The oldest house in Montreal the Lacroix mansion, built about 1636, on a site granted to a wealthy merchant of those days by Paul de Chomedy, Sieur de Maisonneuve, first governor of the city—has been saved by the efforts of the Numismatic and Antiquarian Society from the encroachments of the street extension campaign.

The growing necessity of shortening the route between Madrid and Seville has induced the Spanish Minister of Public Works to invite tenders for the construction of a railway 75 miles in length from Puertollano to Cordoba. The Government will assist in the work by granting a subsidy of £2,160, and by a returnable loan of £280 for each mile of line constructed.

A crippled children's nursing home at Marple, built at a cost of £5,000, was opened by Earl Derby on Friday. The home is, with the exception of the isolation ward and certain staff rooms, a one-storied building, and has wide verandahs. In the grounds there is an opportunity for extension in the way of open-air sleeping sheds, which can be put up very cheaply. Two wards in the building contain thirty beds—fifteen for girls and fifteen for boys. The site of the home is on a cliff overlooking the River Goyt and contains two acres of land.



PARR'S NEW BANK AND PREMISES, BISHOPSGATE, E.C. Mr. STANLEY H. BURDWOOD, Licentiate R.I.B.A. Architect.

BANK AND BUSINESS PREMISES, BISHOPSGATE.

These buildings have the principal frontage in Bishopsgate, E.C., with the return frontages in Pindar and Primrose streets. They are being erected for Mr. T. Richards, of 31, York-place, Portman-square, on land he has recently acquired from the City Corporation. The builders are Messrs. Rice and Son, of Stockwell. The shops vary considerably in depth, and at the moment none are dealt with except the corner, which has been let on a long lease to Parr's Bank, Ltd., as a branch; they have also acquired the next shop, for the purpose of an extension, if necessary. The buildings are being built of fire-resisting construction throughout, and the client is also acquiring the adjoining block, starting at Pindar-street, on which he is going to erect another block of buildings, starting at the corner with a fully-licensed house known as the King's Arms, the license from the old one being transferred to the corner. Mr. Stanley H. Burdwood, Licentiate R.I.B.A., M.S.A., of York-place, W., is the architect.

CHIPS.

H.M. Trade Commissioner for South Africa reports that the ratepayers of Oudtshoorn Cape Province have decided to erect a new town hall at a cost of £30,000.

The Bishop of London will take part in the formal inauguration of the new hostel in Vincent-square on Thursday, February 26. The residential part will be complete, but lack of funds forbids the building of the chapel and library wing. The architect, Mr. Arthur Martin, has provided both large public rooms and a great number of small bedroom studies.

Arrangements are in course of conclusion whereby the custody of Jedburgh Abbey will shortly be assumed by the Commissioners for Ancient Monuments, acting under his Majesty's Board of Works. Under the arrangement, the property rights remain in the hands of the Marquis of Lothian, and facilities of access to the abbey and its precincts are secured to the public.

The Scarborough Town Council have decided to proceed with additional work at the South Cliff Gardens this winter, at a cost for labour of £3,420. The work includes the making of "an invalids'" path for bath-chairs leading across the whole of the gardens.

New works of sewerage for the village of Withyham, carried out for the East Grinstead Rural District Council from plans by their engineer, Mr. Charles Turton, were inaugurated last week. Mr. James M. Vine, of Tunbridge Wells, was the contractor, and Mr. John E. Foster the clerk of works.

The town council of Bridlington is about to extend the Prince's Parade at a cost of £50,000. Messrs. R. Field and Son, Ltd., have submitted plans to the council for extensions and improvements to the Esplanade Lounge, or Café, which will involve an expenditure of £12,000 (estimated), and the New Spa and Gardens Company have in hand the erection of a new concert hall, with balconies, to accommodate over 4,000 additional people under the dome.

Mr. Groom, Minister of Trade and Customs, speaking on Friday at a dinner given by the Chamber of Manufacturers, declared that the primary and secondary industries of Australia had grown tremendously since the Federation. The factories of the Commonwealth in 1912 numbered nearly 15,000, employing 327,000 hands—increases as compared with 1911 of nearly 4,000 and 130,000 respectively. The factories' wages bill in 1912 amounted to £31,296,000—an increase in five years of £12,972,000. The value of plant in 1912 was £69,272,000—an increase in five years of £19,772,000.

The electric-lighting committee of the Edinburgh Town Council have under consideration the necessity of an addition to their generating plant, the question to be decided being whether extensions should be carried out on the vacant ground at M'Donald-road generating-station, or whether a new station should be erected. A preliminary report in regard to a new station was submitted by Sir Alexander Kennedy, and a sub-committee has been appointed to go into the merits of the whole question. In the meantime the committee have accepted tenders amounting to £12,000 for the supply of plant to meet immediate needs at M'Donald-road station.

A Conservative clubhouse was opened at Felixstowe on Friday. It is Georgian in style, and two stories in height, and is situate near the town railway-station. The clubhouse was designed by Mr. H. W. Buxton, of The Parade, Felixstowe, and has been erected under his personal supervision by Mr. W. R. Andrews, of Cobbold-road, Felixstowe.

The monument to Oscar Wilde by Mr. Jacob Epstein, in Père Lachaise Cemetery, was unveiled on Wednesday by Mr. Alesteir Crowley, in defiance of the Prefect's authority. This Assyrian-like monument, a nude figure, with powerful uplifted wings, which was illustrated in our issue of May 31, 1912, has remained hidden from public gaze since its erection by order of the Prefect of the Seine, on account of certain features which were considered to be objectionable.

The cost of the proposed new secondary school for girls at Parkfields Ceders, planned by Mr. G. H. Widdows, A.R.I.B.A., of St. Mary's-gate, Derby, the county education architect, was shown at the last meeting of the Derbyshire Education Committee, to compare favourably with that of similar buildings in other towns in the county. Replying to questions, the secretary, Mr. W. Cooper, stated that it worked out at £46 15s. per scholar, as against £70 at Stockport, £64 at Chesterfield, £60 at Ilkeston, £57 at Rotherham and £56 at Heanor.

At Sheffield Town Hall, on Tuesday, a Local Government inquiry was held before Mr. M. K. North, as to applications from the city council for sanction to borrow sums amounting to £29,793, for various works of improvement. The town clerk (Mr. W. E. Hart), explaining the first application, for permission to borrow £19,993 for paving in Holme-lane, Loxley-road, Main-road, Darnall- and Sheffield-road, Tinsley, said this formed part of a scheme covering twenty roads, and costing £40,000. The Road Board had promised a grant of £17,000, and the balance would be paid out of revenue. The town clerk and Mr. C. F. Wike, city engineer, also explained applications for leave to borrow £2,000 for the construction of a railway siding at the Attercliffe goods yard; £3,030 for alterations at Attercliffe Baths; and £3,270 for the purchase of land in Staniforth-road, Rushby-street, and Crookes, as sites for proposed district baths.

PROFESSIONAL AND TRADE SOCIETIES.

ASSYRIAN PALACES.—Mr. Banister Fletcher delivered a lecture on Thursday in last week at the British Museum on "The Palaces of the Assyrian Kings." The Assyrians, he observed, built neither temples nor tombs except in the Early Babylonian period, which ended 1290 B.C. Their architecture differed from Egyptian in purpose, as also in character, for it was vaulted, and not trabeated, as was inevitable in an alluvial country which supplied clay for the making of bricks to be used in vaults, but no stone for flat beams. German excavations had unearthed plans in asphalt of the Temple of Baal and numberless towers, as well as remains of irrigation, which suggested that here might have been the hanging gardens near the Palace of Nebuchadnezzar; while the towers of Babylon expressed a natural desire to break the monotony of a flat country. The enormous Palaces of the Kings were the dominating features in the valleys of the twin rivers during the Assyrian period. The incised wall-slabs recorded nothing of religious rites, but were devoted to war and the chase. The perishable brick material had mostly reverted to its original clay, but some of the stone door architraves and many incised alabaster wall-slabs remained. British excavations at Khorsabad had revealed the Palace of King Sargon as a royal town of twenty-five acres in itself, and there were long, narrow apartments suitable for roofing by brick arches. The great interest of Assyrian architecture was that the Greeks obtained from it, by way of Asia Minor, the Ionic scroll, and also the palmette and honeysuckle ornament, as well as their use of colour in decoration.

BRITISH SCHOOL AT ROME.—The thirteenth annual meeting of the British School at Rome took place at Burlington House on Tuesday evening, Sir Rennell Rodd, the British Ambassador in Rome, in the chair. The report stated that there were over eighty students and associates on the books of the school, an increase of twenty on last year's figures. Mr. A. H. Smith (hon. treasurer) read a paper on the Endymion sarcophagus, found in a vault at Ostia in 1825. Though the sculpture was not perhaps of the highest class, the work was of its kind admirably complete and characteristic. The sarcophagus was sold at Christie's in July, and was purchased for 1 600 guineas for a Chicago collector.

GUILD OF ARCHITECTS' ASSISTANTS.—The annual report of the Guild of Architects' Assistants states that the position of vice-president, vacated by the resignation of Mr. Max Clarke, is now filled by Mr. George Hubbard, F.S.A., V.P.R.I.B.A., and Mr. J. E. Winfield has been appointed hon. treasurer in succession to Mr. Gerald Large, who has left London for Birmingham. The council accentuate the fact that the Guild remains neutral on the question of Architects' Registration, and repeat their contention that unless the interests of assistants are protected it will prejudice them.

LIFE IN ANCIENT EGYPT.—Mr. P. S. P. Hancock delivered on Saturday afternoon a second lecture on Ancient Egypt at the British Museum. After a survey of the architectural achievements of the eighteenth, nineteenth, and twentieth Dynasties, he referred to the child-life of the population. The Ancient Egyptian children played with dolls, balls, and toys just as modern European children; when at school they were instructed in accounts, geometry, and mensuration, and wrote exercises on papyrus, limestone, or white-washed boards. The material used for clothing was [illegible] unclean. This fact markedly contrasts with the use of wool as a material for garments by the early Sumerians of Babylonia. Both men and women decorated themselves with jewelry of gold, lapis lazuli, turquoise, and amethyst. The camel must have been known in Egypt as early as the Pre Dynastic period as a terracotta figure of one has been found in a grave of that time. Mr. Hancock [illegible] scribed the excavations carried on by Harvard University at the Pyramids, and the archæological results that have attended them. The valley temple of Menkaura, the builder of the Third Pyramid, has been entirely uncovered, and a slate group of Menkaura and his Queen has been brought to light, together with alabaster heads of Menkaura and his son Shepses-Kaf, the last King of the 4th Dynasty. We now know definitely that the Pyramids of the 4th Dynasty had valley temples, in which offerings were made and ceremonies performed on behalf of the Royal personage buried in the Pyramid itself. The Sphinx Temple is now known to be the valley temple of the Second Pyramid, the Tomb of Khafra, while the similarity of the newly-discovered statues to the Diorite statue of Khafra, and also to the head of the Sphinx, has finally disposed of the arguments urged in support of a later date for the one and the other. The best early example of the work of the coppersmith is a life-sized statue of King Pepy of the 6th Dynasty, and a smaller figure of his son.

MANCHESTER SOCIETY OF ARCHITECTS.—At a meeting of the student members held on Friday, October 31, a paper on "Architecture and Personality" was read by Mr. J. H. Worthington, M.A., Professor A. C. Dickie being in the chair. Following is a brief résumé of the paper: In studying all past styles it is essential to get behind the mere facts and to see things all round, to study the life and conditions that promoted them. It is no use slavishly taking bits from books or buildings unless one has first tried to understand why and how these bits originated. The history of architectural styles should be studied as Greek and Latin are in schools, not to talk Greek or Latin, but to educate the mind. Taking things too literally is to be avoided; one needs to think over and digest one's reasons for doing things, to learn why Greek is Greek, Roman is Roman. Likes and dislikes in Art are for the most part temperamental. Just as some prefer Bach to Wagner, or Meredith to Wordsworth, so others would prefer Pruzzi to Semmichele. There is also need for more imagination, for imagination is one of the first qualities in art; cultivate it by reading poetry, and good books, and going to good plays, and hearing good music, mostly by studying past periods of history, for the study of lives of others more than anything else broadens the sympathies and strengthens the imagination. The value of the Renaissance lies not only in its actual achievement—for, as compared with Greece and Rome, this was small—but because great art was produced under conditions much like our own. The Roman Renaissance school combined a number of geniuses, all working under the same limits and towards the same goal, yet each expressing his own particular personality in his work. Peruzzi and San Gallo are quite distinct individuals. The best Renaissance work teaches us to restrain Roman megalomania and apply Classic ideals to ordinary, everyday practice like our own; one does not want to take it too literally, but Anglicise and modernise it—get the spirit of it rather than the letter. Study principles rather than facts. The works of all great architects show that personality tells more than knowledge in art; as a man is so will his work be: his work cannot be greater than he is himself. Art is the expression of a man's physical, mental, moral, and spiritual being; therefore one should try to educate oneself all round, to read and mix with people and become citizens of the large world, and by keeping in touch with its highest ideals, prepare oneself to express these in our works.

THE ROYAL INSTITUTE OF THE ARCHITECTS OF IRELAND.—A general meeting of the above body was held at 31, South Frederick-street, Dublin, on Thursday, October 30. The president, Mr. A. E. Murray, R.H.A., occupied the chair. There was a good attendance of members. Prior to the meeting the council received a deputation from the Architectural Association of Ireland, consisting of the president, Professor W. A. Scott, Messrs. H. G. Leask, H. J. Lundy, and H. Allberry, in connection with a scheme of architectural education promoted by the association. The proposals of the deputation were welcomed by the council, who agreed to co-operate in several material respects. Some suggested alterations to the by-laws of the institute were discussed, and were subsequently referred to council for further consideration.

COMPETITIONS.

BELFAST.—The City of Belfast is about to erect a new Public Art Gallery and Museum in the Botanic Park, and invites designs in competition. Mr. John J. Burnett, A.R.S.A., LL.D., will act as assessor. The competition is open to all architects. The author of the selected design will be entrusted with the work, unless, in the opinion of the corporation, "with the acquiescence of the assessor, after consultation with him, there are imperative reasons to the contrary." The author of the design placed second will receive £100; of the third, £75; and of the fourth, £50. Should the selected design not be carried out the second premiated architect will be given the work, and in that case the author of the originally-selected design will be paid £100. If from any cause the work is not proceeded with within twelve months, the selected architect will be paid four hundred guineas, to merge in his commission if, and when, the first section is carried out; if the work is abandoned altogether he will be paid two hundred guineas more, making altogether six hundred guineas. The corporation will exhibit the designs, which must be sent in on or before Friday, March 24, 1914.

COVENTRY TECHNICAL INSTITUTE.—Members and Licentiates of the Royal Institute of British Architects are advised that the conditions of this competition are not in accordance with the Institute Regulations for architectural competitions. The Institute Competitions Committee are in correspondence with the promoters, with a view to getting them amended.

CAPETOWN.—The competition for the official residence for the Governor-General of the South African Union has been closed, but the results have not yet been announced. There are four assessors: Messrs. Herbert Baker, P. Eagle (Government architect), W. H. Stucke, and E. H. Waugh.

The Pudsey Town Council have adopted a proposal that the £3 000 voted some months ago for the erection of public baths and fire-brigade station on land owned by the council should be increased to £5.000, and should include the purchase of a new motor fire-engine.

Mr. B. T. Batsford will publish early in December Mr. Louis Ambler's book upon the "Old Halls and Manor Houses of Yorkshire," which has been some years in preparation. The volume will be profusely illustrated by collotype plates, photographs, and drawings. Mr. Ambler is a Yorkshireman, and has devoted considerable study to the domestic architecture in his native county. Mr. Batsford intends publishing in the book a list of subscribers whose names are received up to the end of November.

Mr. T. C. Ekin, M.Inst.C.E., Local Government Board Inspector, at the Town Hall, Darlington, on Monday, inquired into an application by the Darlington Town Council for sanction to borrow £21,190 for the electricity undertaking, and £2,168 for the widening and improvement of Woodland-road. This thoroughfare, it was explained by the town clerk, now varied in width from 11ft. 3in. to 50ft. 9in., and it was proposed to widen it to an average of 65ft.

Work in connection with the London and South-Western Railway Company's scheme of electrification of their suburban lines has been begun at Teddington. The foundation of the power-house, which will cover an area of 250ft. by 210ft., have been laid at Wimbledon, immediately to the east of Durnsford road sidings, and the current will be transmitted to nine sub-stations, each 83ft. by 50ft., in various districts. It is the intention to begin electric working on the Kingston circular route, and this line will be in operation before the end of next year. Electric services on the Hampton Court and Shepperton branches, and on the Hounslow loop line, will be added as [illegible] as possible.

Our Illustrations.

THE ATHENÆUM, GRAY'S INN ROAD.

This building, shortly to be erected on a site on the south side of Gray's Inn Road, will accommodate upwards of 2,000 persons. The reinforced concrete gallery, accommodating 800, owing to its great size, will, in addition to the entrances on the top floor, have four entrances in the centre. The landing forms a handsome foyer with retiring rooms adjoining it, formed under the centre of the gallery. Messrs. James A. Bowden, M.S.A., and A. St. Hill Brock, A.R.I.B.A., of the Adelphi, are the architects.

NATIONAL GOLD MEDAL PRIZE SHADED DRAWINGS OF FIGURES FROM THE NUDE.

We have already given one double-page plate of Mr. Arthur Mason's Gold Medal Studies from the Nude in our issue of Oct. 3 last, which we quoted the judges' special references in their official report, highly commending his work. The recognition of grace in line, to which we referred in our previous remarks, seems to be particularly well illustrated by the accompanying drawing of the recumbent figure in the centre of this second sheet, reproduced to-day, the pose being realised with fidelity to nature and much skill and verve in the modelling of its forms. The drawings were made in the Margaret-street School of Art, Birmingham.

THE HIPPODROME AND CINEMA, HULL.

This building is the reconstruction of an existing music-hall of that name, which had old-fashioned side-galleries. The building was entirely gutted, leaving only the side walls and roof; the premises have been reconstructed in such a manner as to secure a capacity of 1,680 seats, of which number 550 are accommodated in the capacious gallery, which is constructed of reinforced concrete. The façade has been entirely rebuilt as shown. Messrs. James A. Bowden, M.S.A., and A. St. Hill Brock, A.R.I.B.A., of the Adelphi, are the architects.

DETAILS, NEW BIG SCHOOL, HAILEYBURY COLLEGE.

This double-page reproduction from the architect's working drawings completes the series of three sheets, two of which have appeared during the past fortnight in illustration of the Big School at Haileybury. Taken together and compared with the general drawings which we published in the BUILDING NEWS for August 23, 1912, these carefully shown details really illustrate themselves, as, of course, all working drawings should do, and every part is fully figured, also the accompanying notes attached make all points obviously clear, nothing being left uncertain or unexplained. The architects are Messrs. John W. Simpson, F.R.I.B.A., and Maxwell Ayrton, A.R.I.B.A., of Gray's Inn, W.C.

The contract for the buildings now in course of erection for Cheshunt College, in Batemans-street and Brookside, Cambridge, from plans prepared by Mr. P. Morley Horder, F.R.I.B.A. (selected in limited competition), has been given to Mr. W. Saint, of Cambridge, who has undertaken to complete the first section by the early autumn of 1914. About £40,000 will be needed for the completion of the whole scheme, including cost of site and furnishing. Nearly £15,000 has been given or promised so that about £25,000 is still required. The college was illustrated by a bird's-eye perspective in our issue of June 6 last.

The parish church of St. Mary, Rougham, Norfolk, was rededicated by the Bishop of Norwich last week, after restoration and the addition of a north aisle. The works, which were the gifts of Colonel North, were executed by Messrs. Cornish and Gaymer, of North Walsham, the architects being Messrs. Nicholson and Corlette, of London. Besides the aisle they include the complete flooring of the church with oak blocks, a new altar of oak, font cover of oak, a new oak roof throughout, and new lamps for the building. There is also in course of construction a new rood-screen, which will be added in the near future.

Correspondence.

BLACKBURN COMPETITION FOR NEW FIRE-STATION, ETC.

To the Editor of the BUILDING NEWS.

SIR,—In conversation with several of the competing architects in the above competition, I find that a general impression is prevalent that justice has not altogether been meted out. The main grievances appear to be that the conditions of the competition have in instances been altogether ignored by certain competitors, and that the full assessor's report has never been published in the local Press or elsewhere, which is the usual procedure in such cases.

Further, the reports and estimates of cost of the various competitors were not open for perusal—which is also the general rule—at the time the designs were on view, and when one considers that the average cost of the ten schemes, other than the winner, was £20,000, and that of the winner £25,000, surely the assessor's report and the estimates of the various competitors should have been open for perusal, and thus have given the unsuccessful a chance—if only for future professional guidance—of comparison of specification and estimates with the respective designs.

Snatches of the assessor's report appeared in the local Press, but conveyed nothing beyond that "too much notice had been taken of the suggestion that if a portion of the site could be reserved it would be a point in the competitor's favour," and also "that the winner was the only competitor who had the courage to state the cost of the fire-engine station proper."

In the majority of cases I understand the cost was stated in exactly the same manner as that of the winner—which the Conditions asked for—and as regards the reserving of a portion of the site, why was such a suggestion made if it had not to be taken notice of? The reserving of a portion of the site in this locality means a considerable item. Take, for instance, a plot of 2,000 yards—about which size most of the competitors reserved. This has a market value of £1,200 to £1,500, which is, in reality, a saving off the cost of the scheme. Therefore the winner, who was the only competitor to utilise the whole of the site, must have this capitalised value added to the cost of his scheme.

All the above matters, taken along with the fact that the competitors' plans have been returned without a word of acknowledgement or thanks from anyone for the month or six weeks' real hard work they each entailed, and no assessor's report having come to light other than the "snatches" referred to above, one cannot help but think that there is reason for a certain amount of dissatisfaction.—I am, etc.,

NON COMPETITOR.

Mr. W. Burton, inspector of nuisances, has also been appointed as surveyor and water engineer to the Amble Urban District Council.

Mr. Charles Jones, of The Lodge, Culmington-road, Ealing, civil engineer, for over 50 years surveyor to the Ealing Local Authority and mayor-designate of the borough for the municipal year beginning on Monday next, who died on August 24, left £26,672 gross, with £3,994 net.

The Bishop of Southwark concluded on Monday a ten days' visitation to the rural deanery of Caterham, during which he dedicated the new Church of St. Barnabas at Higher Drive, Coulsdon, dedicated the new vestries of Christ Church, Purley, and cut the first turf on the site of the new Church of St. Andrew, to be built in Woodcote-grove-road, Coulsdon, at a cost of £6,200.

Mr. Lewis H. Berens, for eleven years hon. treasurer of the English League for the Taxation of Land Values, and hon. director of the Land Values Publication Department, has died at his residence in Dawson-place, Pembridge-square. Mr. Berens, who was formerly in business in South Australia, was one of the earliest to be influenced by the teachings of Henry George's "Progress and Poverty." He retired from business at an early age, and returned to England, devoting his energies to the land values movement. He leaves a widow and one son.

STATUES, MEMORIALS, &c.

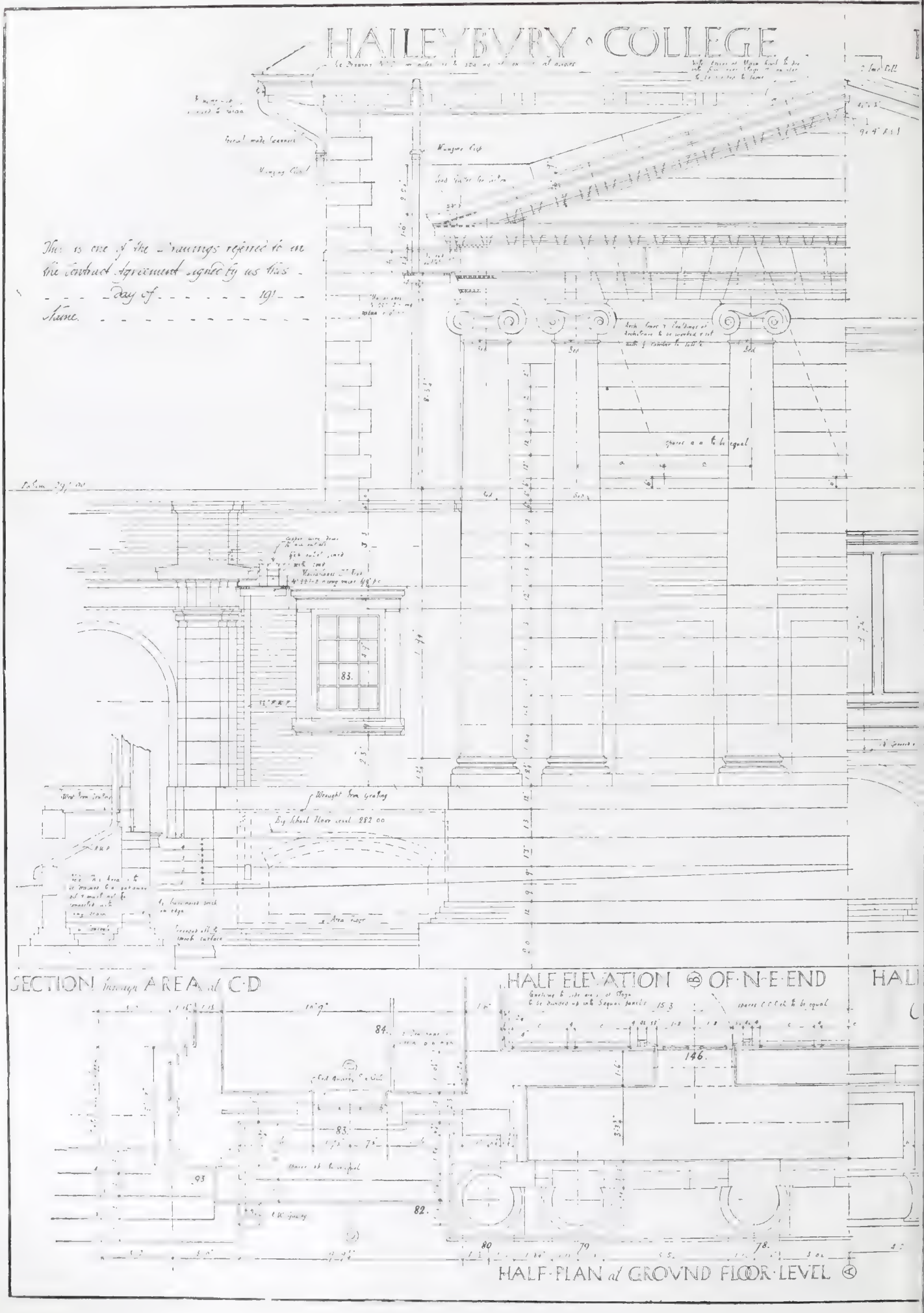
STIRLING.—On Saturday the Prime Minister unveiled at Stirling a statue of the late Sir Henry Campbell-Bannerman, who was Member for the Stirling Burghs for forty years. The statue depicts the late Premier in the robes of the Order of the Bath. The figure, which is of bronze, is 9ft. high, and, with the pedestal, the monument reaches a height of 21ft. It is the work of Mr. Paul Montford, of London, who executed the bust of Sir Henry in Westminster Abbey. The statue occupies a commanding site at the foot of a wooded back-walk leading round what were once the walls of Stirling Castle. Opposite is the Carnegie Library. On the pedestal, which is of Westmoreland granite, are the words "Campbell-Bannerman. 1836-1908." Below is a recumbent female figure, representing "Peace," with the inscriptions: "South Africa" and "An Empire's tribute."

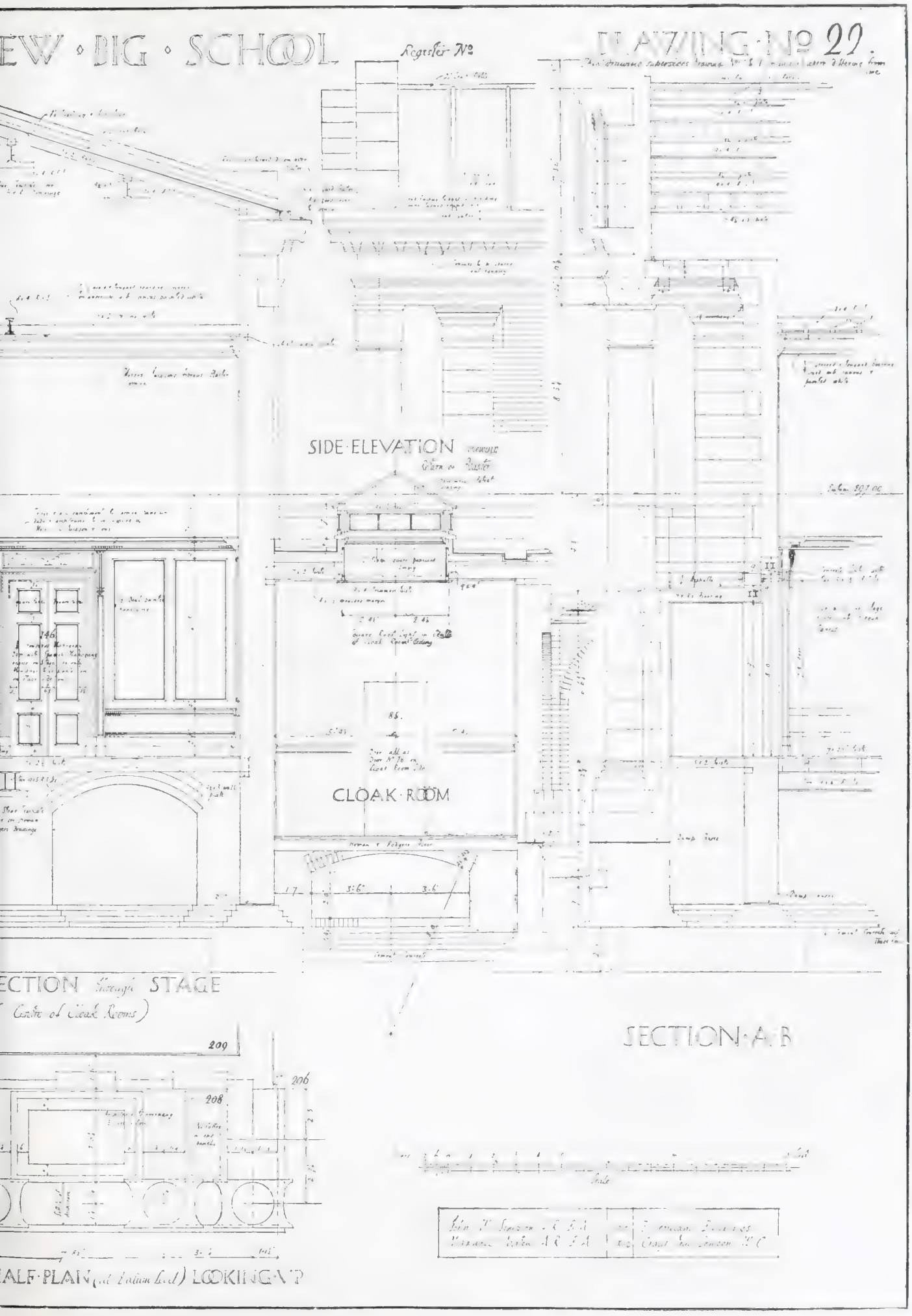
LEGAL INTELLIGENCE.

IN RE ROBERTS, ADLARD AND CO.—At Bankruptcy Buildings, creditors met on Monday under a receiving order made against Mr. Arthur Charles David and Mr. George Charles Johnson, who lately traded in partnership as slate merchants, under the style of Roberts, Adlard, and Co., at Bermondsey-wall. The business was established in 1803; Mr. David and Mr. Johnson joined the board in 1889, and had been sole partners since 1904. On August 13 last the partners, with a view of raising further capital, transferred it to a private company, of which they became directors. The debtors do not admit that they are insolvent, and attribute their present position to the long-continued and exceptionally severe depression in the building trade. The accounts had not yet been filed, but proofs of debt amounting to £13,187 had been lodged. Mr. A. F. Whinney, accountant, was appointed trustee, with a committee of inspection.

ENFIELD BUILDER'S APPEAL.—Master as Worker.—A Divisional Court of the King's Bench Division, composed of Justices Bray and Lush, had before them on Thursday, November 6, the case of Thomas v. Carr, a builder's appeal which raised an interesting point. The plaintiff, Mr. Thomas, builder and decorator, of Enfield, moved to set aside a judgment of the Official Referee, Mr. Muir Mackenzie. The action was originally brought to recover £117 10s., representing the balance of an account between the parties for work done. The plaintiff a builder and decorator, and the defendant the owner of a house at Winchmore Hill. The defendant paid £50 into court, and entered a counter-claim. The Official Referee felt that the account stated should be reopened, because of various discrepancies in the account, and plaintiff applied for leave to amend the writ, which application was granted. The Official Referee then found for the plaintiff for £103 10s. The defendant had paid into court another £55, making a total of £105, and the plaintiff only recovering £103 10s., no question being raised as to the counter-claim, he ordered the plaintiff to pay the costs. Plaintiff now appealed on the grounds of misdirection by the Official Referee, and the exclusion of interest for a period of about six months or more. The Official Referee had reduced the plaintiff's claim by £15 10s., which the plaintiff claimed partly for work done by himself, and partly for superintending. He was his own foreman, and he worked as well, and he claimed to be entitled to charge this amount under the contract as work. Further, the Referee also disallowed 30s. which plaintiff claimed as interest, and these items reduced the claim to under the amount paid in by defendant, with the result that the plaintiff had to pay the defendant's taxed costs.—Mr. Justice Bray said this was a claim by the plaintiff to two items that had been disallowed. In regard to the £15 10s., which represented the price of work done by the plaintiff himself, he did not think the Referee's decision to disallow was correct. In regard to the question of interest, plaintiff was not by contract entitled to interest beyond June 25, and he could not say that the Official Referee's decision on this point was incorrect. He thought the interest ought not to be allowed; but there ought to be added to the £103 10s. the sum of £15 10s., so that the result would be, he would recover more than the amount paid into court. The appeal would be allowed with the costs of the appeal, and judgment entered for £119, with the costs of the action, except so far as they had been specially dealt with by the Official Referee.

The extension of the Young Men's Christian Association buildings at Brighton was commemorated on Monday. About £2,600 has been expended on the work.


HALEYBURY · COLLEGE
This is one of the drawings referred to in the Contract Agreement signed by us this
day of 191
Same.
Wrought Iron Grating
Big School Floor cond 282 00
Area Floor
SECTION through AREA at C·D
HALF ELEVATION @ OF N·E END
HALF PLAN at GROUND FLOOR LEVEL


EW · BIG · SCHOOL
Register No
DRAWING No 22.
SIDE ELEVATION
CLOAK ROOM
SECTION A B
ECTION Looking STAGE
Centre of Cloak Rooms)
209
208
206
ALF PLAN (at Datum Level) LOOKING UP

Intercommunication.

GUINEAS FOR BEST REPLIES.

We offer a prize of one guinea every week for what we deem the best reply to any query appearing in the columns which we deem worth insertion.

Replies must be sent in over real name and address. No other can receive a prize. The Editor's judgment is final.

Due competition is restricted to buyers of the paper, and with each reply a coupon cut from our front page must be enclosed.

Any number of replies can be sent, but a coupon of this date must accompany each.

All else being equal, brief replies will stand the best chance. We emphasise this, as some correspondents ignore the fact that queries want terse facts, not long essays. Any necessary illustrations must be in line only—no tints or washes and about twice the size they are meant to be reproduced. We are unable to avail ourselves of replies that contain illustrations unless we receive them by first post on Tuesdays.

The right to withhold the prize in the event of no reply being received worthy of it is reserved by the Editor, who also claims the right to publish any other replies he may deem useful.

We divide the guinea between Mr. Wm. H. Adams and Mr. Eric Wiseman.

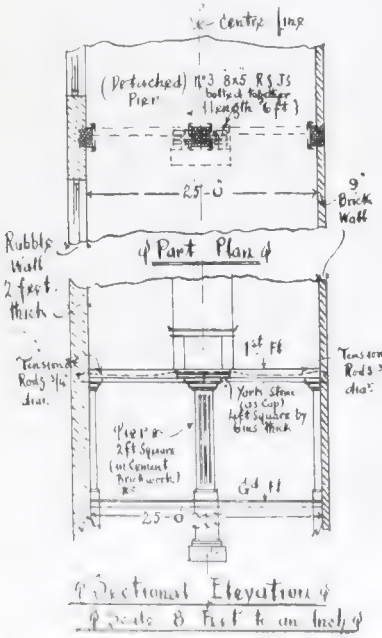
QUESTIONS.

13136.—RETAINING WALL.—What is the best way to arrive at the thickness of a wall of a building where the road gets 5ft. above the ground floor and 15ft. above the cellar floor? The wall is over 15ft. long and 30ft. high, and can scarcely be called a retaining wall.—Park.

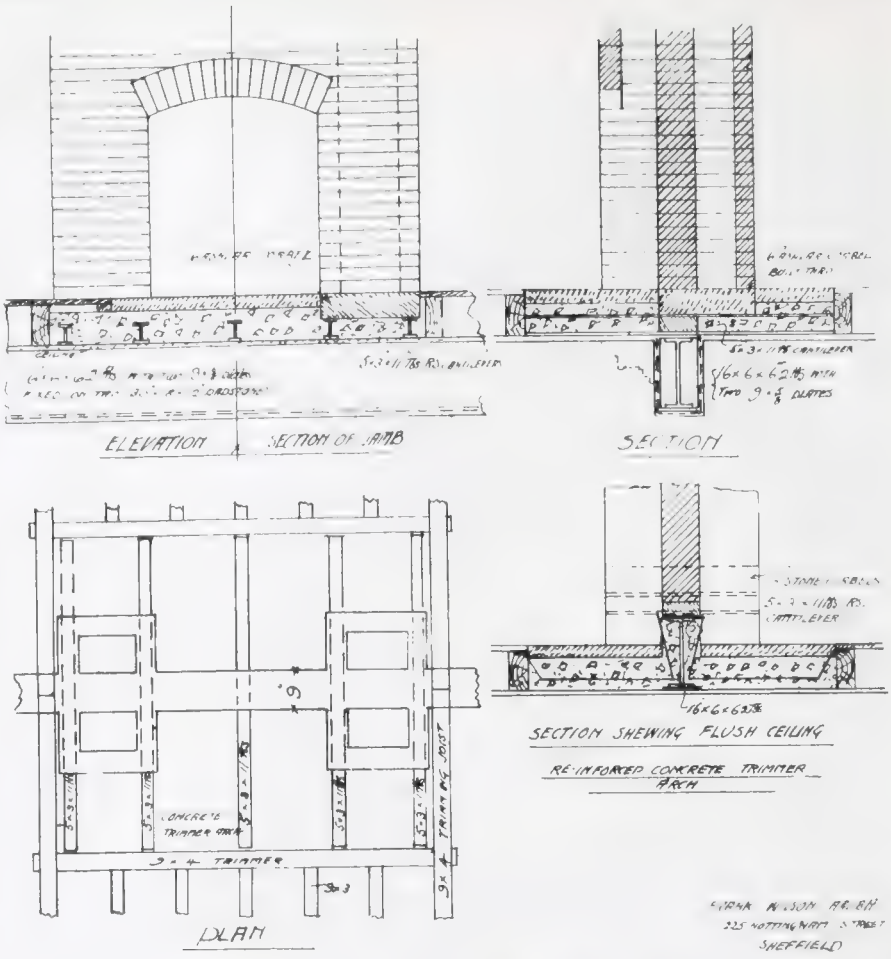
13137.—OUTFALL DRAIN.—An outfall drain (6in.) for slop-waters of some houses is to be discharged into the sea at low-water mark across about 60 yards of shifting sandy foreshore, of which 30 yards is between high and low-water marks, in which drain must be sunk and covered. Fall of foreshore only about 1 in 80. What is the best construction to adopt for drain, and also at the point of discharge, having regard to the following considerations?—Burying of pipes in trench sunk in sand; corrosion by sea-water; clogging of drain and outfall by sand and seaweed; laying between tides.—W. M. P.

REPLIES.

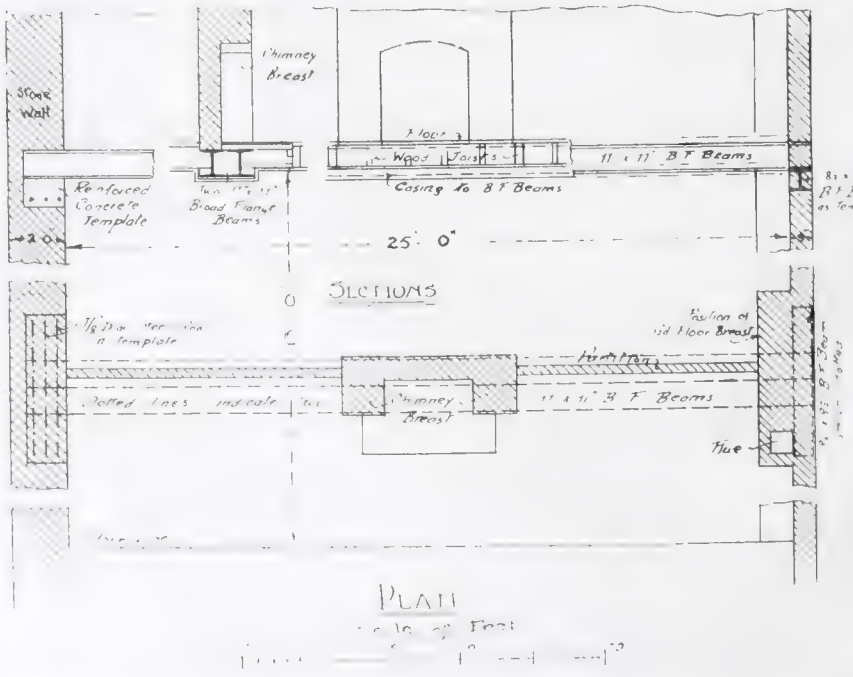
13133.—CARRYING CHIMNEY BREAST.—This question appeals to me as one requiring some simple architectural treatment on lines suggested by the sketches submitted. The rolled steel joists would,



in. bearing (at least) on walls at each end. The wall being 2ft. wide, and divided into 9ft. piers, is ample to carry the load required. There should be padstones on wall 30in. by 18in. by 12in. By the use of 5ft. by 3in. and 11lb. R.S.J. cantilevers and concrete, the old-fashioned brick trimmer arch is dispensed with. Additional sketch shows a flush ceiling.—Frank Wilson, 225, Nottingham-street, Pittsmoor, Sheffield.



—[13133.]—CARRYING CHIMNEY-BREAST.—It is gathered from the particulars given that a single chimney-breast is to be carried centrally, and that broad flange beams resting on a 9ft. by 2ft. pier in by 8½in. by 4ft. long broad-flange beam is provided as a template for the former beams, the space between the flanges filled in with brick on edge. Half the load will be borne by this template, viz., 12½ tons, and will be distributed over an area of 3½ square feet, producing approximately a load of 3½ tons per foot super. on the brickwork. As stock brickwork in cement is calculated to carry a safe load of 5 tons per foot super., the above bearing is ample, lateral stability being gained by the bonding-in of the ground-floor chimney-breast. To use a similar template in duplicate on the stone wall would, perhaps, not prove as satisfactory; therefore as reinforced concrete lintels are to be employed, it would make a



sound job to construct a reinforced concrete template as shown, 5ft. long, 1ft. 6in. broad, and 1ft. deep, having three ¾in. diameter steel rods embedded. This would carry the other half of load safely, and distribute it at the rate of just over 1½ tons per foot super., the concrete having previously bedded itself evenly upon the stone during construction. The stone wall should take with safety 2 tons per foot

A. H. Winterburn, M.S.A., 12, South-view, Blythroad, Worksop, Notts.

13133.—CARRYING CHIMNEY BREAST.—One's client does not take it in addition as an architect he requires this detail information. Sketch herewith shows method of dealing with the problem. The wall is carried by a 9in. by 4in. R.S.J. having two 9in. by ½in. steel plates, cast to have

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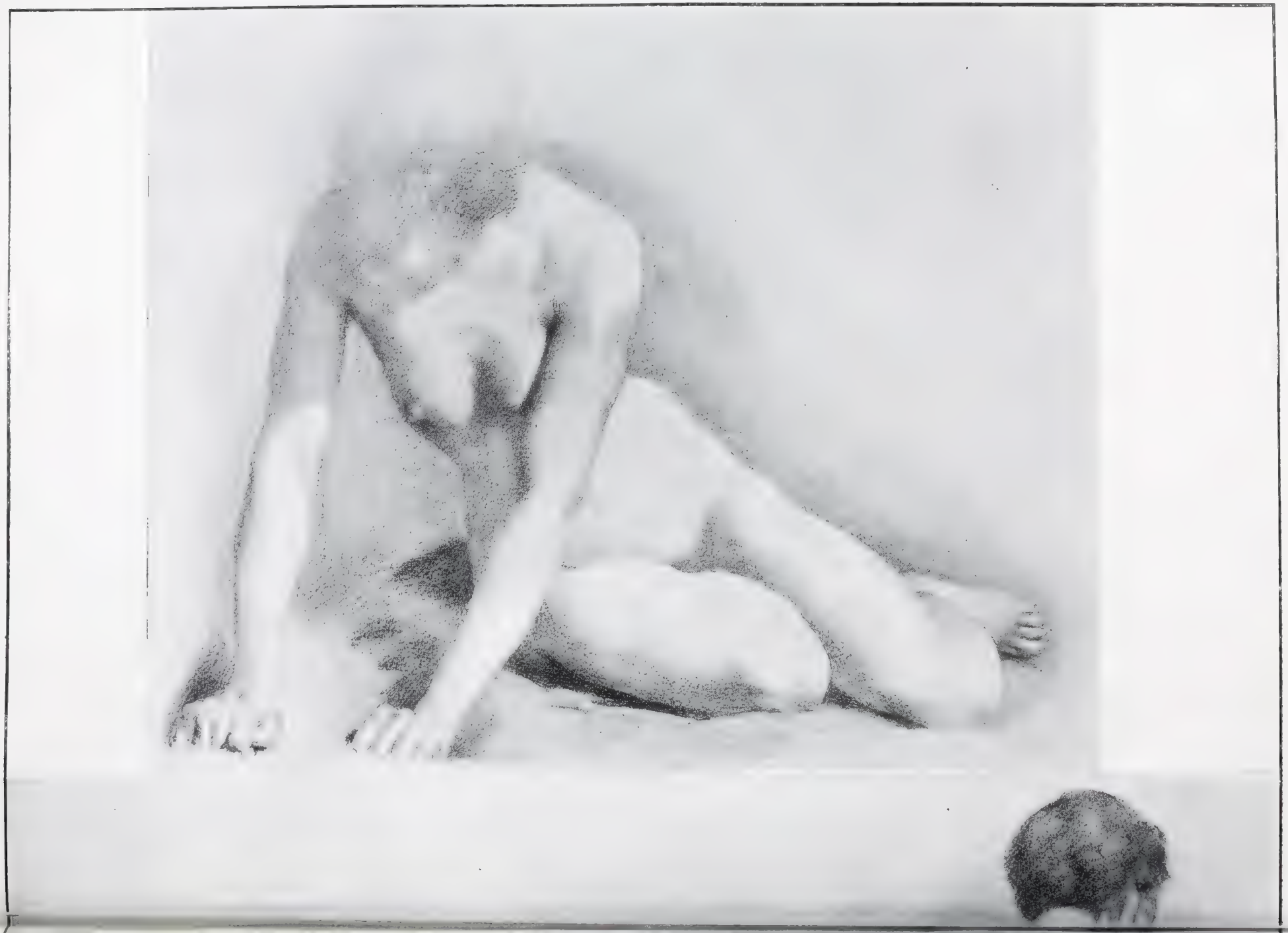


New Church, Woodlands, nr Doncaster: W.H. Wood, F.R.I.B.A. Archt. Late C. Hodgson Fowler, F.S.A. Newcastle & Durham



NEW HIPPODROME AND CINEMA, HULL. Messrs. James A. Bowden and A. St. Hill Brook, Architects.

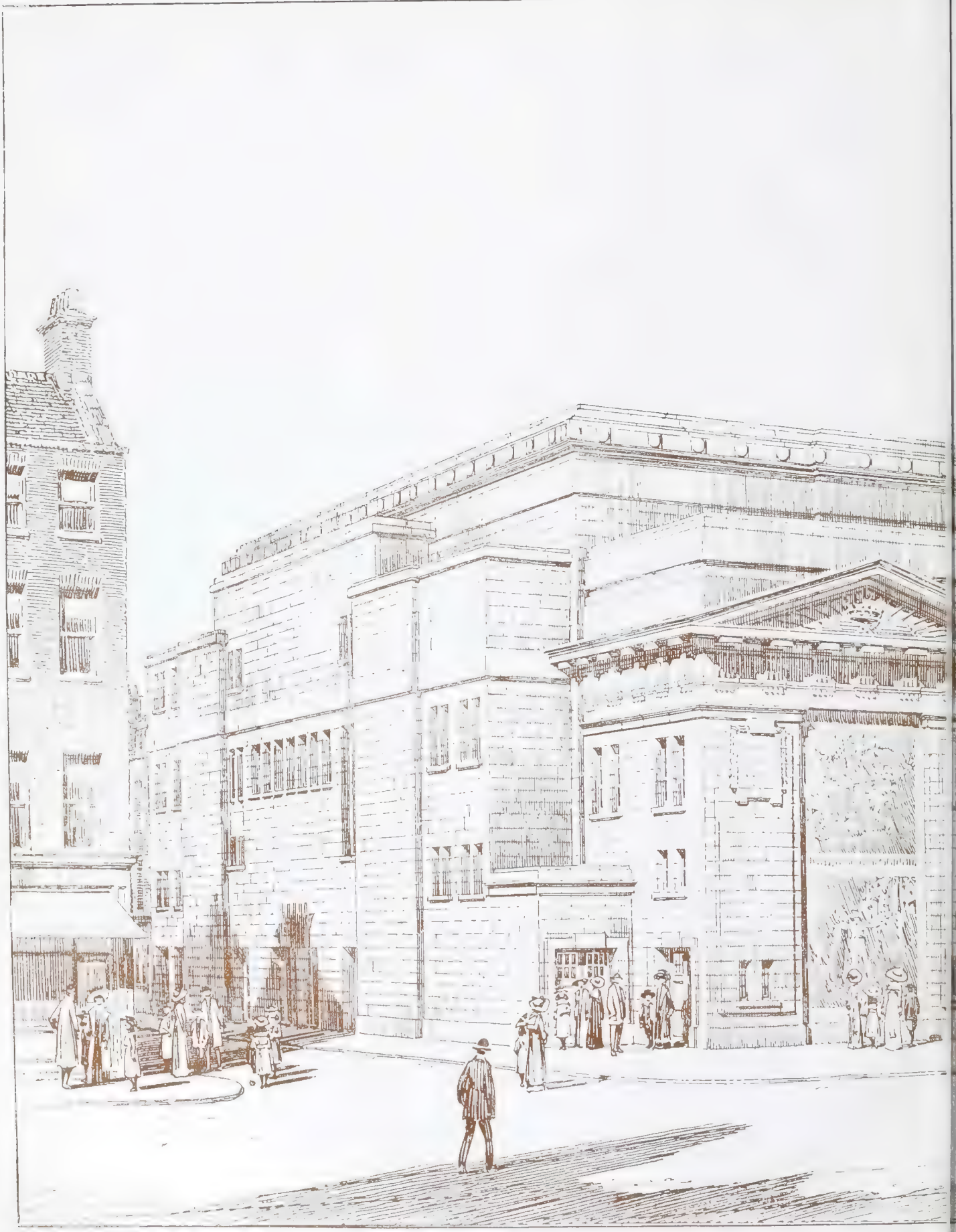
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NATIONAL GOLD MEDAL PRIZE SHADED DRAWINGS OF FIGURES FROM THE NUDE.—By Mr. Arthur Mason.

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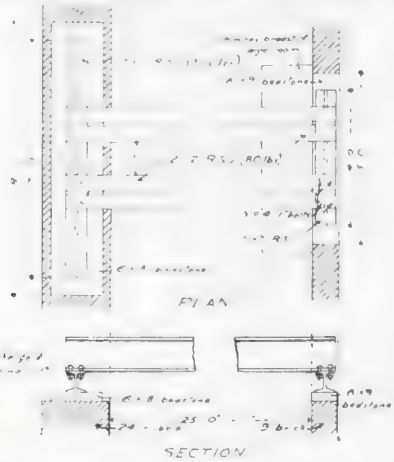
"THE ATHENÆUM," GRAY'S INN ROAD, W.C.—



rs. James A. Bowden and A. St. Hill Brock, Architects.

upper, therefore the area covered by the template should suffice.—C. Hoffman, M.S.A., 60, Edward street, Wrexham, N. Wales.

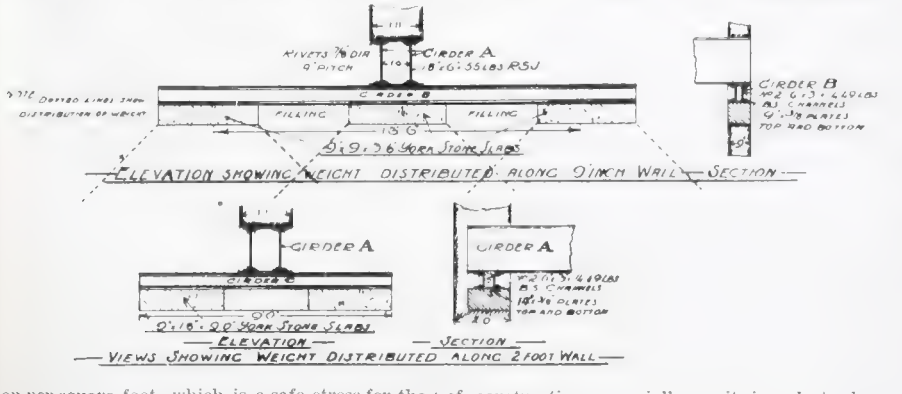
13133.—CARRYING CHIMNEY BREAST.—In reply to "Builder," I do not think in the circumstances he can do better than adopt the method of design (by me herewith), which is economical and



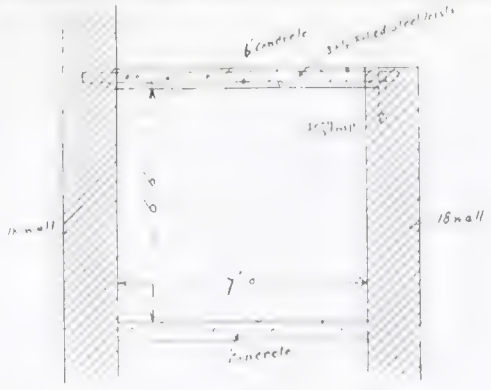
would make a thoroughly sound job. The ends of the two broad flange beams to be bolted to the top of 7in. by 7in. broad flange beams of lengths shown with No. 4 inch bolts. The bedstones need not be in one length, provided they are bedded perfectly true to upper surface. Felt pads should be introduced between the bedstones and 7in. by 7in. joists. The first-floor girder each side of new girder must be tied in at both ends with 1½in. dog-ties, taken through wall, threaded and secured with one 18in. by 18in. iron plate and nut. The iron plate could be let into face of rubble wall and concealed.—Wm. H. Adams, Council House, Romford, Essex.

13133.—CARRYING CHIMNEY-BREAST.—When visiting the City Tea House at Gloucester about a fortnight ago, where alterations and additions are in progress, a similar problem was shown to the students. I fail to see how the use of stanchions can be avoided, as in the first place the inner wall is only 9in. thick (true, it is strengthened by the chimney-breast, but does this come directly under the one end of the broad-flange beams?), whilst there is only a rubble masonry wall at the other, a most unsatisfactory material at the best of times for a concentrated load. The question of the length of the room does not enter into the matter at all. "Builder" wants to think of the mechanics of his problem, and treat it as an inverted pair of scales, the standard being the chimney-breast and the pans the supports—unless equilibrium is maintained, there will be movement. I would recommend that stanchions be used on both sides (or if used on one side only, an allowance of, say, 2in. be made for the compressibility of the mortar-joints), and sufficient area given to the loose plates and their foundations, say, 5ft. super., with the rock taking 3 tons per foot super., allowing 5 tons for stanchions and foundations. More will be necessary if the broad-flange beams, with the necessary separators, are not included in the 25 tons. Remember that care now may save endless bother later, and also a reputation.—K. H. Read, Lecturer on Building Construction, Gloucester and Stroud Technical Schools.

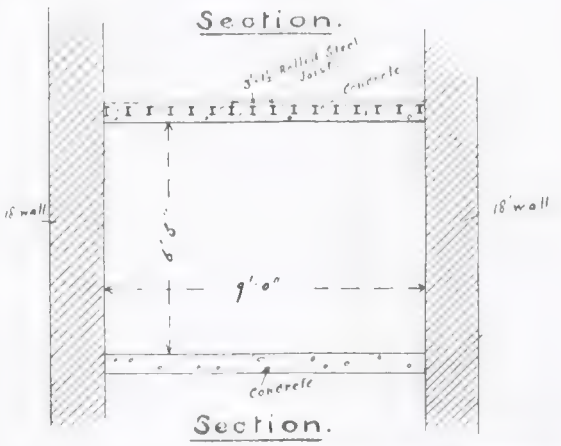
[13133.]—CARRYING CHIMNEY-BREAST.—Carry chimney-breast on steel girder, marked A, as shown. The end of girder A, supported ultimately by 9in. wall, bears on a distributing girder B, which in turn bears only at ends and in centre on York bedstones 9in. deep to secure the distribution of reaction of 13 tons from girder A along the wall as far as necessary. The bearing of girder A on the 9in. wall should, if possible, come over chimney-breast below. The maximum stress is on the top of the wall, and not greater than 1.62 tons per square foot, which is amply safe for the height of 13ft. The end of girder A supported ultimately on the 2ft. wall bears on distributing girder C, which in turn bears on York bedstones 9in. deep, as shown, along one of the piers 9ft. wide. The pressure on the flat bedded rubble is



1 ton per square foot, which is a safe stress for the height. The maximum stress in girders is 7.7 tons per square inch, which, as the load is entirely dead, is suitable.—Eric Wiseman, County Surveyors Office, Chelmsford.



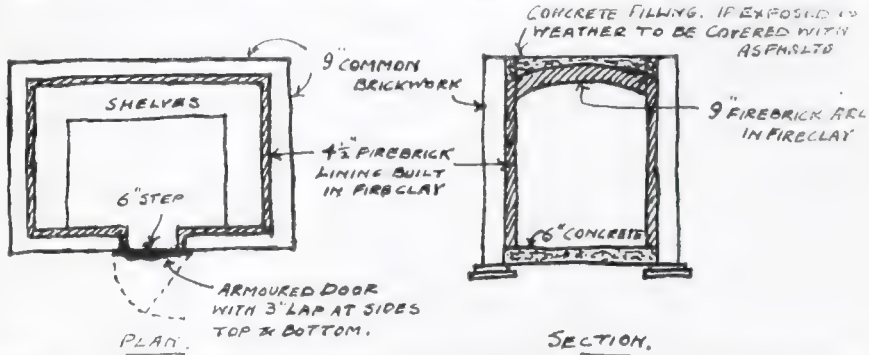
Section.



Section.

[13134.]—STRONG-ROOM.—Build the walls with bricks in cement 18in. thick, tied together with hoop-iron, the roof to be 6in. cement concrete, reinforced with 3in. by 1½in. rolled steel joists, fixed 7in. from centre to centre, or old iron metals fixed 9in. from centre to centre. If the walls are not carried above the level of strong-room, roof ends of joists to be fixed down with 2in. by ⅜in. iron straps built 15in. down into brick walls. Floor to be 6in. cement concrete resting on ground; but if there is a space below floor, it should be reinforced with iron, similar to roof. Strong-room door and frame to form doorway. At any time the building is pulled down, most of the old materials can be used again for other work.—J. W. Shaft, Guildford-road, Woking.

[13134.] STRONG-ROOM.—Your querist, "Old Subscriber," does not state whether he wants a fire-resisting or burglar-proof strong-room. If he only want it incombustible, one of the cheapest methods

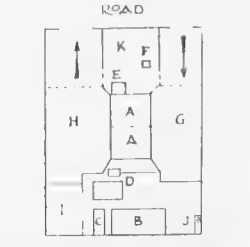


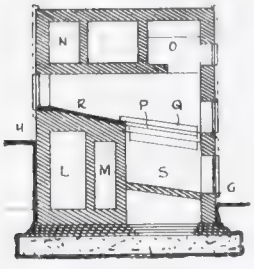
of construction, especially as it is only to be a temporary one, would be to build as shown in accompanying sketch, and fit with a fireproof door of approved make. The door could be reused for the permanent strong-room when same is ready. The whole could be constructed for about £40.—H. Kendrick, Ulvaley Green-road, Oldbury, near Birmingham.

13134.—STRONG-ROOM.—For temporary requirements, querist could not do better than form a strong-room with steel plates, bolted together on the inside by means of lugs and flanges, so that no bolt head are visible externally, and having a steel lining also built up in sections with the intervening space filled in with slag-wool, or asbestos, for fire-resistance. The plates would vary in thickness, from ⅛in. upwards, according to the resisting qualities required. It is advisable to see that the floors are capable of sustaining the increased weight before proceeding with the work. The advantage of this method of construction is that it can be moved from position to position at any time in sections, whereas a brick or large dimensions would be awkward to manipulate around stairs and landings, and also through doorways. To build a temporary strong-room of brickwork, a good foundation of concrete is required: hence they are usually placed in the basement; 14in. brickwork in cement, with the ceiling or roof of concrete, with small R.S.J. or T-irons at very close intervals, say, 12in., and having a proper strong-room door and frame, upon which will be the necessary lugs for building in the walls. The head can be formed of concrete or stone. Querist would do well to consult the manufacturers under the heading of "Safes," in the "Directory" of this week's "B.N."—K. H. Read, Lecturer on Building Construction, &c., Gloucester and Stroud Technical Schools.

13135.—REFUSE DESTRUCTOR.—According to the site, and the kind and quantity, of refuse a two-cell destructor, on the single-row system, as herewith illustrated, forms a scheme to meet the requirements. The upper or line diagram is the complete plan showing the lay-out and arrangement of the plant: A, two furnaces 5ft. by 5ft.; B, boiler; C, economiser; D, 6H.P. engine pump and fan; E, screen and dust catcher; F, chimney; G, tipping platform leading from the approach road to the charging openings; H, clinkering floor and approach to road; I, stores; J, stokehold, &c.; K, yard. The lower diagram shows a section through the destructor, which is constructed of solid brickwork throughout, the several chambers being lined with firebrick, heavy iron furnace doors with weights to the charging and withdrawing openings. In plan the construction

chamber, finally leading to the chimney. M, blast or forced draught air flue. N, flue to the boiler tubes; O, exhaust or outlet flue; P, grate bars; Q, side air box. R, drying, hearth. S, ash pit; G, clinkering floor. H, feeding, tip and tipping floor. The chimney must be 60ft. high and should be erected upon a concrete foundation, 2ft. 6in. deep and 12ft. in diameter, octagonal in shape. The shaft should be of ordinary bricks in two lifts with a diameter at top of 27in., and in 9in. work, increasing by 4½in. at each lift, and with a batter of 1in. to every foot in height and lined with 4½in. firebrick, and finished with cap and lightning conductor. The building should be so arranged as to permit the refuse carts being emptied right on to the tipping platform, where a provision should be made for storage accommodation, as the feeding of the chambers should be continuous throughout the 24 hours. The temperature of the furnaces is kept high, and reaches its maximum in the combustion chamber, where it is maintained at 1,800 Fahr. The final process takes place in this chamber, which also receives and consumes the





gases generated in the respective furnaces. Dust interceptors, constructed on the spiral principle, are placed near the base of the chimney to prevent the escape of fine dust, or carbonised paper, which, on account of the great draught necessary, would be carried off into the atmosphere. They also intercept the heat, and being themselves invariably in an incandescent condition, any unconsumed gases from the chamber are rendered innocuous before reaching the chimney. By the vitrifying operations the organic substance of the putrescent or decomposing matter is converted into water vapour, carbon dioxide, and nitrogen, all found in the ordinary atmosphere. The residuals consist of ashes, cinders, tin, iron, and so forth, and amount to about 35 per cent. of what is passed through the cells. The clinker forms from 5 to 80 per cent. of the residuals according to the refuse and thoroughness of vitrification, and is a mass of incombustible slag. — Chas. S. Longley, 2, Ivanhoe-road, Denmark Park, London.

A Wesleyan chapel in Holderness-road East Hull built from designs by Messrs. Renton and Barry of Land o' Green Ginger, Hull has just been opened. The cost was £6,500.

The restoration of Paisley Abbey was inaugurated on Friday by the laying of the foundation-stone for the new choir. Mr. McGregor Chalmers of Glasgow is the architect, and all the funds needed have been contributed.

Plans for a comprehensive sewerage system for the whole northern half of the city of Toronto, including old North Toronto, Moore Park and Cedarvale, have been completed by the works department of the city council. It is estimated that the cost of the work will run into several million dollars.

The Salop County Council at their meeting held at Shrewsbury on Saturday agreed, on the recommendation of the Main Roads Committee, to increase the salary of the assistant county surveyor (Mr. M. S. Stobbs) from £200 to £250 per annum, increments of £10 and to retain the services of the six divisional surveyors at the discretion of the committee from £200 to £225 by two yearly increments of £12 10s.

The small-holdings committee reported to the Shropshire County Council on Saturday that the arbitrator appointed by the Board of Agriculture had fixed £8,164 as the amount payable by the council for the 160 acres of the Crowmoor Farm, Shrewsbury. It was agreed that, subject to the approval of the Board of Agriculture and the Local Government Board, the clerk be authorised to enter into a contract with the Shrewsbury Corporation for the sale to them of about 5a. 3r. 29p. of the land for £1,187, and an option of leasing an additional 6 or 7 acres of land for allotments.

Our Office Table.

The new issue of the "Kalendar" of the Royal Institute of British Architects shows an increase in bulk to 502 pages. The membership roll reveals a steady increase in the two principal classes of practitioners. The number of Fellows at the beginning of the present session is 851, as against 826 a year ago; the list of retired Fellows has been reduced by death from 32 to 24. There are now 1,621 Associates, as against 1,578 a year ago, but as is inevitable with a closed list, there are 2,089 Licentiates, in lieu of the 2,119 recorded last year. The Honorary Associates number 53, against 55, and the Hon. Corresponding Members 67, against 66. We note an improvement in the indexing, and the use of bolder type in the lists showing the local distribution of members, and in other minor particulars.

The Treasury has conceded the point as to its contribution to the improvement of the Admiralty Arch, and the cost will be divided equally between the Government, the Westminster City Council, and the London County Council. The estimated net cost of the improvement is £115,000. The Government Bill will provide for the acquisition of the whole of the site belonging to the Liverpool and London and Globe Insurance Company, at 56, Charing Cross, and parts of 55, Charing Cross, and 17, Spring-gardens; for that of the Phœnix Insurance Company's premises at 57, Charing Cross, and 15, Spring-gardens; and that of Messrs. Anderson's premises at 58 and 59, Charing Cross, and those in the rear at Nos. 11 and 13, Spring-gardens. The proposal is to complete the circle as far as possible by the acquisition of premises, which will increase the width of the approach from about 65ft. to 90ft., and to give a vista from the Strand through the triple arch along the Coronation Avenue to the Victoria Memorial and the Palace behind.

The annual dinner of the Builders' Benevolent Institution will be held in the Whitehall Rooms, Hotel Metropole, Charing Cross, on Thursday, the 27th inst., at 6.30 for 7 p.m. The president, Mr. Fred Shingleton (Messrs. Leslie and Co., Ltd.), will occupy the chair. In presenting the sixty-sixth annual report of this excellently-managed institution, the committee of management express their thanks to Mr. F. G. Minter for his services as president. During the last twelve months three male and three female pensioners have been added to the pension list. A grant of £5 was made in one case, and burial money in another. There are now on the pension list thirty male and twenty-seven female pensioners. One male and one female pensioner, both of whom were elected in December, 1911, died during the past year. The committee tender their thanks for valuable assistance to the trustees (Mr. F. J. Dove, Sir Arthur C. Lucas, Bart., Mr. Frank May, J.P., Mr. T. F. Rider, Mr. T. Stirling, and Mr. John T. Bolding), and to the honorary auditors (Mr. John T. Bolding and Mr. Hubert S. Ward, F.C.A.). The next election of pensioners will be held in December.

Lecturing before the Leeds Camera Club on Monday night on "Yorkshire Minsters," Mr. C. B. Howdill, A.R.I.B.A., of that city, who showed many interesting coloured slides, said it was rather refreshing to him as an architect to find that the jerry-builder was not a product simply of the 20th century. In the restoration of the south transept of York Minster, in 1870, it was discovered that the top portion of the wall was filled in with dry rubble, and it had to be pulled down and rebuilt solidly. This was the work of 13th century builders, and if it had been done by 19th- or 20th-century builders, it would have been characterised as jerry building.

A report which is being presented to the city council of Birmingham by the general purposes committee constitutes an unpleasant reminder that the two council house extensions of 1911 and the present year are going to cost considerably more than was expected three years ago. When the first extension was authorised, it was estimated that the building proposed to be erected could be put up for £150,000. It was explained that this sum would not include the cost of "desks, furniture, and fittings," nor that of certain incidentals. As a matter of fact, the builders' contracts have amounted to £162,000, fittings and furniture have absorbed £34,749, architects' and other professional fees some £19,000 more, the total amounting to £218,678. The increase of outlay over the original estimate is accounted for partly by the substitution of granite for Darley Dale stone on the lower floor (£3,541); partly by alterations and additional work found necessary in the various departments during the progress of the work (£3,980); and partly by the greatly increased cost of materials and labour since the architects' estimate was made four years before. The second extension of the building was estimated to cost £53,350, and actually involved an expenditure of £58,800. The corporation will be asked on Monday next to sanction the borrowing of £66,157 to clear up accounts.

Some remarkable disclosures were made at St. Austell Rural District Council meeting on Friday concerning the Mount Charles and Charlestown sewerage scheme, carried out a short time ago at a cost of about £6,000. The sanitary inspector (Mr. W. H. Moffatt) reported that a short time ago he received a complaint that a branch sewer at Slades was choked. Upon examination he found that from a point about midway along the length of the sewer in question the sewage was flowing backwards. He had the road opened up in various places and took the levels of a section of about 75ft. length. He found that the pipes in this section had been laid with a fall in the reverse direction to the remainder of the sewer. Also, upon investigating a similar complaint at Watering Hill, he found that a manhole communicating with the choked sewer had been constructed without any invert channels—the bottom being simply roughly made in concrete and a junction branch brought in at right angles. With such work as that in existence little wonder that the sewers were choked from time to time. He presumed that the council employed a clerk of works to supervise the contractors who carried out the work, and while not desiring to cast any reflections on that official, whoever he was, he (Mr. Moffatt) must say that gross neglect and incompetence were shown in passing such work and certifying payment for the same. The discussion of the subject was referred to the sanitary committee, a member urging that the cost of rectifying the alleged errors, if proved, should be charged to the contractor.

Out of fifty-five applicants for the post of county surveyor in Kent, in succession to Mr. H. P. Maybury, the following six were selected to interview the bridges and roads committee at a meeting at Maidstone: Mr. Herbert Turlay Chapman, county surveyor and road engineer to Somerset County Council; Mr. Herbert Wm. Bowen, county surveyor of West Sussex; Mr. Ernest John Elford, borough engineer and surveyor, Southend-on-Sea; Mr. Charles Frederic Gettings, county surveyor of Worcestershire; Mr. Herbert William Longdin, surveyor to the Penge Urban District Council; Mr. John Andrews Manning, divisional main road surveyor to the Hampshire County Council. The two first-named were selected in the order in which their names appear, for the final choice of the county council, on November 19. Mr. Chapman has been county surveyor and road engineer for Somersetshire since 1908. His previous appointments have been: County district surveyor and assistant county surveyor, Lancashire, 1898-1908; county district surveyor of main roads and bridges, Derbyshire, 1895-1898; and assistant surveyor of West Sussex, 1892-1895. Mr. Bowen was appointed county surveyor for West Sussex in 1907, his previous appointments having been: Assistant county surveyor of main roads, East Sussex, 1900-1907; engineer and surveyor, Wigmore District Council and North Hereford main roads, 1897-1900; assistant Shropshire combined districts, main and district roads, 1890

1897. The salary attached to the Kent appointment is £800. Under the Somerset County Council Mr. Chapman is receiving £600 per annum, exclusive of travelling and out of pocket expenses, Mr. Bowen's salary being £400 and £270 allowances.

Messrs. Crosby Lockwood and Son, 7, Stationer's Hall-court, E.C., have published a second edition of their most useful and handy help, "The Public Works Calculator," the tables of which show at sight the cubic contents of square or round bricks, stone, etc., and the superficial measurement and weight of mild steel bars and angles. The "Calculator" can be carried in the breast pocket without feeling it, and will save years in the life of every estimator who uses it. The present edition is enhanced in value by the addition of tables for obtaining the superficial measure in square feet, to be obtained without calculation.

MEETINGS FOR THE ENSUING WEEK.

FRIDAY (To-day).—Institution of Municipal Engineers. Annual Meeting, 4, Southampton-row, W.C., 12 noon. Presidential Address by Frank Latham, M.I.C.E., Penzance. 2.45 p.m.

Incorporated Institute of British Decorators. "Stencilling," by W. Stewart-Greene. Painters' Hall, E.C. 8 p.m.

Glasgow Architectural Craftsmen's Society. "Needle-Shorms," by D. S. Pringle; and "Underpinning," by Robert T. Anderson. 8 p.m.

MONDAY.—Architectural Association. "Nationality in Art," by H. M. Fletcher, M.A., F.R.I.B.A. 8 p.m.

Liverpool Architectural Society. Opening Address by the President, Hastwell Grayson, M.A., F.R.I.B.A. 6 p.m.

TUESDAY.—Institution of Civil Engineers. "The Construction of the White Star Dock and adjoining Quays at Southampton," by Francis Ernest Wentworth-Shields. 8 p.m.

WEDNESDAY.—Manchester Society of Architects. "Dublin Architecture in the Eighteenth Century," by Page L. Dickenson.

THURSDAY.—Society of Architects. Address by the President, Percy B. Tubbs, F.R.I.B.A. 28, Bedford-square, W.C. 8 p.m.

Trade News.

WAGES MOVEMENTS.

BERWICK-ON-TWEED.—Wages in the building trade at Berwick have been increased 1d. per hour.

TODMORDEN.—Labourers in the general building trade at Todmorden have formed themselves into a union, and given the masters six months' notice of a demand for an increase of wages, the minimum to be 7d. an hour.

DALKEITH PLUMBERS.—A further advance of ½d. per hour has been conceded by the master plumbers to their employees—the increase to date from Monday last, the 3rd inst. The new wage will be 9½d. per hour, the rate having been raised to 9d. in July last.

Mr. David Galloway, St. Andrews, was appointed on Friday night to the joint office of burgh engineer and sanitary inspector of Inverkeithing. There were 31 applicants for the post.

Mr. W. L. Michael, of Crickhowell, has been appointed surveyor and inspector to the Newcastle Emlyn Urban District Council, in succession to the late Mr. Thomas Williams, of Drefach.

The Secretary of State for India in Council has appointed Mr. Rupert William Palmer as an Assistant Superintendent in the Geological Survey of India, to fill the vacancy notified in March last.

On Thursday in last week, at Harrogate, Mr. T. C. Ekin held a Local Government Board inquiry respecting the application of the town council for sanction to borrow £9,439 for the purposes of the electricity undertaking.

The first sod in connection with the building of a new church in Woodcote-grove-road, Coulsdon, has been formally cut. The architects are Messrs. Greenaway and Newberry, of Westminster, and the contractors are Messrs Grace and Marsh, of Croydon. The cost of the section now in course of erection will be £6,200.

LATEST PRICES.

IRON.

Steel Joists, Belgian and German (ex steamer, London)	per ton	£6	2	6	to	£6	5	0
Steel Joists, English		7	10	0	,,	7	12	6
Wrought-Iron Girder Plates		7	0	0	,,	7	5	0
Steel Girder Plates		7	2	6	,,	8	2	6
Bar Iron, good Staffs		6	5	0	,,	8	10	0
Do., Lowmoor, Flat, Round, or Square		20	0	0	,,	0	0	0
Do., Welsh		5	15	0	,,	5	17	0
Boiler Plates, Iron—								
South Staffs		8	0	0	,,	8	15	0
Best Snedshill		9	0	0	,,	9	10	0

Angles 10s., Tees 20s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £8 15s. to £9.
Ditto galvanised, £14 to £15 10s. per ton.

Galvanised Corrugated Sheet Iron—

	No. 18 to 20.	No. 22 to 24
6ft. to 8ft. long, inclusive	Per ton.	Per ton.
gauge	£13 0 0	£13 10 0
Best ditto	13 0 0	14 0 0

Wire Nails (Points de Paris)—

3 to 7	8	9	10	11	12	13	14	15	B.W.G.
8/3	8/9	9/3	9/9	10/3	11/-	11/9	12/6	13/6	per cwt.

	Per ton.				Per ton.		
Cast-Iron Columns	£7	10	0	to	£9	0	0
Cast-Iron Stanchions	7	10	0	,,	9	0	0
Rolled-Iron Fencing Wire	8	5	0	,,	8	10	0
Rolled-Steel Fencing Wire	7	5	0	,,	7	10	0
,, ,, ,, Galvanised	8	15	0	,,	9	5	0
Cast-Iron Sash Weights	5	0	0	,,	5	5	0
Cut Floor Brads	9	15	0	,,	—		
Corrugated Iron, 24 gauge	16	0	0	,,	—		
Galvanised Wire Strand, 7 ply, 14 B.W.G.	14	5	0	,,	—		

B.B. Drawn Telegraph Wire, Galvanised—

0 to 8	9	10	11	12	B.W.G.
£10 10s.	£10 15s.	£11 0s.	£11 5s.	£11 15s.	per ton.

Cast-Iron Socket Pipes—							
3in. diameter	£6	2	6	to	£6	7	0
4in. to 6in.	6	0	0	,,	6	5	0
7in. to 24in. (all sizes)	5	7	6	,,	6	0	0

[Coated with composition, 5s. 0d. per ton extra, turned and bored joints, 5s. 0d. per ton extra.]

Pig Iron—	Per ton.
Cold Blast, Lilleshall	110s. 0d. to 117s. 6d.
Hot Blast, ditto	70s. 0d. ,, 75s. 0d.

Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—

Gas-Tubes	75 p.c.
Water-Tubes	72½ ,,
Steam-Tubes	67½ ,,
Galvanised Gas-Tubes	65 ,,
Galvanised Water-Tubes	62½ ,,
Galvanised Steam-Tubes	57½ ,,

OTHER METALS.

Spelter, Silesian	Per ton	£20	7	6	to £20	12	6
Lead Water Pipe, Town		25	0	0	,,	—	
,, ,, ,, Country		25	10	0	,,	—	
Lead Barrel Pipe, Town		26	0	0	,,	—	
,, ,, ,, Country		26	15	0	,,	—	
Lead Pipe, Tinned inside, Town		27	0	0	,,	—	
,, ,, ,, Country		27	15	0	,,	—	
Lead Pipe, Tinned inside and outside, Town		29	10	0	,,	—	
,, ,, ,, Country		30	5	0	,,	—	
Composition Gas-Pipe, Town		28	0	0	,,	—	
,, ,, Country		28	15	0	,,	—	
Lead Soil-pipe (up to 4½in.) Town		28	0	0	,,	—	
,, ,, ,, Country		28	15	0	,,	—	
[Over 4½in. £1 per ton extra.]							
Lead Shot, in 28lb. bags		24	15	0	,,	—	
Copper Sheets, sheathing & rods		91	0	0	,,	91	10	0
Copper, British Cake and Ingot		79	10	0	,,	80	0	0
Tin, English Ingots		186	0	0	,,	186	10	0
Do., Bars		186	15	0	,,	187	0	0
Pig Lead, in 1cwt. pigs (Town)		21	15	0	,,	—		
Sheet Lead, Town		22	0	0	,,	—		
,, ,, Country		25	5	0	,,	—		
Genuine White Lead		31	15	0	,,	—		
Refined Red Lead		25	0	0	,,			
Sheet Zinc		29	0	0	,,	—		
Old Lead, against account		19	10	0	,,	—		
Tin	per cwt.	10	10	0	,,	—		
Cut nails (per cwt. basis, ordinary brand		0	11	3	,,	—		

TIMBER.

CONSTRUCTIONAL.

Yellow Pine Deals, Quebec, per standard:	1st quality	£38	0	0	to £45	0	0
,, ,, ,,	2nd ,,	26	0	0	,, 32	0	0
,, ,, ,,	3rd ,,	16	0	0	,, 18	10	0
Spruce Deals: St. Johns		10	0	0	,, 11	10	0
,, ,, Miramichi		9	10	0	,, 10	10	0
,, Boards: Swag		11	0	0	,, 12	0	0
Red Deals: Archangel 1st quality		21	0	0	,, 24	0	0
,, ,, ,,	2nd ,,	16	0	0	,, 19	0	0
,, ,, ,,	3rd ,,	13	0	0	,, 14	0	0
,, ,, St. Petersburg—							
,, ,, ,,	1st quality	16	10	0	,, 18	0	0
,, ,, ,,	2nd ,,	14	10	0	,, 15	10	0
,, ,, Wyburg & Uleaborg		12	10	0	,, 15	0	0
Gefle, Gothenburg, and Stockholm		12	10	0	,, 17	0	0
White Deals: Crown		14	0	0	,, 15	10	0
,, ,, Seconds		11	10	0	,, 13	0	0
Flooring: White and Planed—1st and 2nd quality mixed		10	15	0	,, 11	15	0
1st, 2nd, & 3rd quality mixed		10	5	0	,, 11	0	0
Red Planed, 1st quality		14	10	0	,, 17	0	0
Pitch Pine: Prime Deals and Boards		18	0	0	,, 23	0	0
Lignum Vitæ	Per ton	7	0	0	,, 14	0	0
		Per cubic foot.					
Yellow Pine Logs (waney board)		0	5	0	,, 0	5	6
Pitch Pine Logs		0	2	0	,, 0	2	6
Birch: Quebec Logs		0	2	3	,, 0	2	9
Oak: Austrian Wainscot		0	7	0	,, 0	8	0
Mahogany: Gaboon		0	3	0	,, 0	3	3

FURNITURE AND HARDWOODS.

Teak: Burmese, per load, 50ft.	£20	0	0	to	£25	0	0
Teak: Java, per load, 50ft.	16	0	0	,,	21	0	0
	Per cubic foot.						
Oak Planks: U.S.A., imported	0	1	9	to	0	2	6
,, Boards ,, ,, Prm.	0	3	0	,,	0	3	6
,, ,, ,, ,, Mdm.	0	2	6	,,	0	2	9
Sequoia (Californian Redwood)	0	2	4	,,	0	3	6
Birch: Quebec logs	0	2	3	,,	0	2	9
,, ,, sawn planks	0	1	3	,,	0	2	0
Oak: Austrian Wainscot	0	7	0	,,	0	8	0
Walnut: Prime boards and planks	0	6	0	,,	0	6	6
Walnut: Mdm. ,, ,,	0	3	6	,,	0	4	6
Greenheart: Hewn logs	0	3	3	,,	0	4	0
Cedar: Cigar box	0	4	9	,,	0	5	6
Satin Walnut: Imp. sawn boards, prime	0	2	4	,,	0	3	9
Orham: Imp. sawn boards, prime	0	2	0	,,	0	2	3
Mahogany: St. Domingo, Cuba, and Honduras	0	6	0	,,	0	9	0
,, African, Assinee, &c.	0	5	0	,,	0	6	6
,, Lagos and Benin	0	4	6	,,	0	6	0
,, Sekondi and Cape Lopez	0	3	0	,,	0	4	0
,, Gaboon	0	2	0	,,	0	2	3
Satinwood: West Indian	0	10	0	,,	0	14	0
Rosewood	Per ton	8	0	0	,,	12	0	0
Lignum Vitæ	,,	7	0	0	,,	14	0	0

STONE.*

Red Mansfield, in blocks	per foot cube	£0	3	4
Darley Dale, ditto	,,	0	2	3
Red Corsehill, ditto	,,	0	2	2
Closeburn Red Freestone, ditto	,,	0	2	0
Ancaster, ditto	,,	0	1	10
Greenshill, ditto	,,	0	1	1
Chilmark, ditto (in truck at Nine Elms)		0	1	1½
Hard York, ditto	,,	0	2	0
Ditto ditto 6in. sawn both sides, landings, random sizes	per foot sup.	0	2	8
Ditto ditto 3in. slab sawn two sides, random sizes	,,		1	3

*All F.O.R. London.

Bath Stone, delivered on road waggons, Paddington Depot	per foot cube	0	1	7½
Ditto, ditto, Nine Elms Depot	,,	0	1	9½
Beer Stone, delivered on rail at Seaton Station	,,	0	1	0
Ditto, delivered at Nine Elms Station	,,	0	1	6

Portland Stone, in random blocks of 20ft. average:—

	Brown Whit	White Bed.	Base Bed
	Per foot cube.		
Delivered on road waggons at Paddington Depot, Nine Elms Depot, or Pimlico Wharf	£0 3 3	£0 3	1

SLATES.

	in.	in.	£	s.	d.	
Blue Portmadoc	20×10	12	12	6	per 1,000 of	
,, ,,	16× 8	6	12	6	1,200 at r.stn	
Blue Bangor	20×10	13	2	6	,,	,,
,, ,,	20×12	13	17	6	,,	,,
First quality	20×10	13	0	0	,,	,,
,, ,,	20×12	13	15	0	,,	,,
,, ,,	16× 8	7	5	0	,,	,,
Eureka unfading green	20×10	15	17	6	,,	,,
,, ,,	20×12	18	7	6	,,	,,
,, ,,	18×10	13	5	0	,,	,,
,, ,,	16× 8	10	5	0	,,	,,
Permanent green	20×10	11	12	6	,,	,,
,, ,,	18×10	9	12	6	,,	,,
,, ,,	16× 8	6	12	6	,,	,,

BRICKS.

(All prices net.)

First Hard Stocks	£1	15	0	per 1,000 alongside, in	
Second Hard Stocks	1	11	0	,, ,,	[river.
Mild Stocks	1	9	0	,, ,,	,,
Picked Stocks for Facings	2	5	0	,,	delivered at rly. stn.
Flettons	1	10	0	,,	,, ,,
Pressed Wire Cuts	1	18	0	,,	,, ,,
Red Wire Cuts	1	14	0	,,	,, ,,
Best Fareham Red	3	12	0		,, ,,
Best Red Pressed Ruabon Facing	5	0	0	,,	,, ,,
Best Blue Pressed Staffordshire	3	15	0	,,	,, ,,
Ditto Bullnose	4	0	0		,, ,,
Best Stourbridge Firebricks	3	14	0	,,	,, ,,
2½in. Best Red Accrington Plastic Facing Bricks	4	10	6	,,	Net, delivered in full truck loads in London.
"Accrington Best Red Plastic Facing Bricks					per 1,000 £2 10 0
3⅜" ditto Second Best Plastic ditto					2 2 6
Ditto Ordinary Second Bricks					1 11 3
Ditto Plastic Engineering Bricks					1 17 6
Sewer Arch Brick not more than 3⅜" in thickest part					2 0 0
3⅜" Chimney Bricks fit for outside work					2 6 0
3⅜" ditto ditto through and through					3 0 0
3⅜" Beaded, Ovolo and Bevel Jambs; Octagons; 2¼" and ½" radius Bullnoses; Stock patterns					3 7 6
Accrington Air Bricks, 9"×2 course deep, each					0 0 6
Ditto ditto 9"×1 course				,,	0 0 3

Accrington Camber Arches:—

3 course deep, 4½" soffit, per foot opening						0	1 3
4	ditto	4½"	ditto	ditto	ditto	0	1 8
5	ditto	4½"	ditto	ditto	ditto	0	2 1
6	ditto	4½"	ditto	ditto	ditto	0	2 6
3	ditto	9"	ditto	ditto	ditto	0	2 1
4	ditto	9"	ditto	ditto	ditto	0	2 11
5	ditto	9"	ditto	ditto	ditto	0	3 9
6	ditto	9"	ditto	ditto	ditto	0	4 6

Net free on rail or free on boat at works

GLAZED BRICKS.

HARD GLAZES, (PER 1,000.)

	White, Ivory, and Salt Glazed. Best.	Best. Seconds.	Buff, Cream, & Bronze.	Other Colours.	Second Colours.
Stretchers—	£12 7 6	£10 17 6	£13 17 6	£17 17 6	£12 7 6
Headers—	11 17 6	10 7 6	13 7 6	17 7 6	11 17 6
Quoins, Bullnose, and 4½in. Flats—	15 17 6	14 17 6	17 17 6	21 7 6	15 17 6
Double Stretchers—	17 17 6	16 7 6	20 17 6	24 7 6	17 17 6
Double Headers—	14 17 6	13 7 6	17 17 6	21 7 6	14 17 6
One side and two ends, square—	18 17 6	17 7 6	21 17 6	26 7 6	18 17 6
Two sides and one end, square—	19 17 6	18 7 6	22 17 6	26 17 6	19 17 6
Splays and Squints—	17 7 6	15 17 6	21 17 6	24 17 6	17 7 6

Plinth and Hollow Bricks. Stretchers and Headers—
5d. each 4d. each 6d. each 6d. each 5d. each

Double Bullnose, Round Ends, Bullnose Stops—
5d. each 4d. each 6d. each 6d. each 5d. each

Rounded Internal Angles—
4d. each 3d. each 5d. each 5d. each 4d. each

MOULDED BRICKS.

Stretchers and Headers—
8d. each 8d. each 8d. each 8d. each 8d. each

Internal and External Angles—
1/2 each 1/2 each 1/2 each 1/2 each 1/2 each

Cill Bullnose, Stretchers and Headers—
5d. each 4d. each 6d. each 6d. each 5d. each

Majolica or Soft Glazed Stretchers and Headers ..... Per 1,000 £22 17 6

" Quoins and Bullnose... 27 17 6

Compass bricks, circular and arch bricks of single radius £6 per 1,000 over above list for their respective kinds and colours } Not exceeding 9in.

Camber arch bricks, any kind or colour, 1s. 2d. each ..... } by 4½in by 2½in.

Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.

* These prices are carriage paid in full truck loads to London Stations.

	s.	d.	
Thames Sand	7	6	per yard, delivered
Pit Sand	7	0	" "
Thames Ballast	6	0	" "

	s.	d.	Per ton,
Best Portland Cement	36	0 to 41	0 delivered
Ground Blue Lias Lime	21	0	per ton delivered.

Exclusive of charge for sacks.

	s.	d.	s.	d.	Per yard,
Grey Stone Lime	13	6 to	14	0	delivered

Stourbridge Fireclay in sacks 27s. 0d. per ton at railway station.

TILES.

	s.	d.	Dlvrd. at
Plain red roofing tiles	42	0	per 1000 ry. stn.
Hip and Valley tiles	3	7	per doz. " "
Broseley tiles	50	0	per 1000 " "
Ornamental tiles	52	6	" " "
Hip and Valley tiles	4	0	per doz. " "
Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000 " "
Ornamental do.	60	0	" " "
Hip tiles	4	0	per doz. " "
Valley tiles	3	0	" " "
Selected "Perfecta" roofing tiles :—Plain tiles (Peake's)	46	0	per 1000 " "
Ornamental do.	48	6	" " "
Hip tiles	3	10½	per doz. " "
Valley tiles	3	4½	" " "
"Rosemary" brand plain tiles	48	0	per 1000 " "
Ornamental tiles	50	0	" " "
Hip tiles	4	0	per doz. " "
Valley tiles	3	8	" " "
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 " "
Hand-made sand-faced	45	0	" " "
Hip tiles	4	0	per doz. " "
Valley tiles	3	6	" " "
Hartshill" brand plain tiles, sand-faced	50	0	per 1000 " "
Pressed	47	6	" " "
Ornamental do.	50	0	" " "
Hip tiles	4	0	per doz. " "
alley tiles	3	6	" "

OILS.

Rapeseed, English pale, per tun	£28	15	0	to	£29	5 0
Do., brown ... ... ,, ...	26	15	0	,,	27	5 0
Cottonseed, refined ... ,, ...	29	0	0	,,	30	0 0
Olive, Spanish ... ... ,, ...	39	10	0	,,	40	0 0
Seal, pale ... ... ,, ...	21	0	0	,,	21	10 0
Cocoanut, Cochin ... ... ,, ...	46	0	0	,,	46	10 0
Do., Ceylon ... ... ,, ...	42	10	0	,,	43	0 0
Do., Mauritius ... ... ,, ...	42	10	0	,,	43	0 0
Palm, Lagos ... ... ,, ...	32	5	0	,,	33	5 0
Do. Nut Kernel ... ... ,, ...	35	0	0	,,	35	10 0
Oleine ... ... ,, ...	17	5	0	,,	19	5 0
Sperm ... ... ,, ...	30	0	0	,,	31	0 0
Lubricating U S ... ... per gal.	0	7	0	,,	0	8 0
Petroleum refined ... ,, ...	0	0	6½	,,	0	0 6½
Tar, Stockholm ... per barrel	1	6	0	,,	1	10 0
Do., Archangel ... ,, ...	0	19	6	,,	1	0 0
Linseed Oil ... ... per gal.	0	2	[illegible]	,,		—
Baltic Oil ... ... ,, ...	0	2	5	,,		—
Turpentine ... ... ,, ...	0	2	9½	,,		—
Putty (Genuine Linseed Oil) ... per cwt.	0	9	0	,,		—
Pure Linseed Oil "Sterity" Brand ...	0	10	0	,,		—

GLASS (IN CRATES).

English Sheet Glass :	15oz.	21oz.	26oz.	32oz.
Fourths	2d. ...	3d. ...	3½d. ...	4½d.
Thirds	2½d. ...	3½d. ...	4½d. ...	6d.
Fluted Sheet	2¾d. ...	3¾d. ...	6½d. ...	7d.

Hartley's English Rolled Plate :	⅛in.	3/16in.	¼in.
	2½d.	2¾d. ...	3d.
Figured Rolled and Repoussine		White.	Tinted
		3½d. ...	5d.

TRADE NOTES.

Pudlo, the powder which makes cement waterproof, has been used on a swimming-bath at the Kendal Grammar School with great success.

Under the direction of Mr. S. G. Scales, architect, Eastbourne, Boyle's latest patent "air-pump" ventilators have been applied to the Presbyterian Church, Eastbourne.

The Amberley Roman Catholic Schools, Sussex, are being warmed by means of Shorland's patent Manchester stoves, supplied by Messrs. E. H. Shorland and Brother, Ltd., of Failsworth, Manchester.

Amongst the many new tower clocks in construction, or recently erected by Messrs. J. B. Joyce and Co., Ltd., Whitchurch, Shropshire, are the following: Quarter-chime clocks for St. Thomas's Church, Chester; Daresbury Church, Cheshire; Llanddulas Church House, Wynstay Park, Ruabon; Norton Church, Evesham Hour-striking clocks for Caerwys Church, N. Wales; Shanghai, China (two clocks with four dials each). Non-striking clocks for new premises at Seaforth (for Mr. W. Ashworth), Messrs. John Stanning and Son, Ltd., Leyland, and another for Huelva, Spain.

Wembley is the latest suburban town to decide on the adoption of motor fire apparatus, the type selected being the well-known Merryweather "Hatfield" fire-engine, which, it may be noted, will be fitted with a new design of pump. The pumping capacity will be 250 to 300 gallons per minute, and, in addition to ample accommodation for hose and gear, a fire-escape will be carried. Arrangements will also be made for the pump to throw a first-aid jet for dealing with small fires, so that the machine will embody a complete fire-extinguishing and fire-escape equipment on one chassis.

Messrs. Stephens and Carter, Ltd., Greenstreet, Paddington-green, W., are issuing an excellent new illustrated price-list, which they are publishing at the commencement of the New Year, which fully figures and describes their specialities in ladders, steps, barrows, trestles, scaffold-poles, and putlogs. In all of these, as some builders seem still not to know, suitability of design saves labour and cost, not merely in the actual cost of the appliances, but, to a far greater degree, on the job. These ends Messrs. Stephens and Carter have kept well in view, and a perusal of the list will convince all that, at lowest prices, their goods are serviceable, up to date, and in the best sense of the word economical. A capital folding caterer's table, strong, rigid, and cheap, suitable for bazaars, etc., is figured on p. 17.

A new Primitive Methodist chapel was opened at Attleborough, Norfolk, last week. Mr. A. E. Scott, of Norwich, is the architect, and Mr. Eldon J. Smith, of Bunwell, the builder.

At Wandsworth, on Tuesday, Local Government Board inquiries were held with respect to the borough council's applications for sanction to borrow £11,009 wherewith to construct a swimming-bath in Elmfield-road, Balham, and £5,000 for the laying out of seven acres of land as an addition to Putney Vale Cemetery. The populous district of Balham at present has no public baths.

PILKINGTON & CO.

(ESTABLISHED 1838.)

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WHITE SILICA PAVING.

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TELEPHONE NOS.: NEW CROSS 1102 (2 Lines).

FOR

Olivers'

Seasoned

Hardwoods,

APPLY TO—

WM. OLIVER & SONS, Ltd.,
120, Bunhill Row, London, E.C.

TENDERS.

*** Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

BETHNAL GREEN. — For remodelling Virginia-road School, for the London Education Committee :—

Bowyer, J. and C., Ltd., Upper Norwood	£12,042 17 5
Chessum, J., and Sons, 7a, Southplace	11,933 16 9
Shurmur, W., & Sons, Ltd., Upper Clapton	10,431 0 0
Perry & Co., Bow, Ltd., Victoria-street, Westminster (accepted)	10,414 0 0

Architect's estimate, £10,545.

BRISTOL.—Tenders accepted by the Bristol Docks Committee :—

For spare starter for motors at the Granary, Royal Edward Dock, Electric Construction Co., Wolverhampton.

For additional compressing machinery for the cold storage on the upper floor of Transit Shed No. 1, Avonmouth Dock, Linde British Refrigeration Co., Ltd.

For reconstruction of grain-shed on the west side of Portishead Dock, and supply of timber bulkheads, Perkins, J. and Son, Bristol.

For 2½in. indiarubber hose, India Rubber Co.

For permanent-way fittings, Railway and Engineering Co., Ltd.

BRISTOL.—For alterations to premises adjoining St. Peter's Hospital, for the board of guardians :—

Pickard & Son, Bristol (accepted)	£1,861 0 0

CAMBERWELL.—For erecting special school in Marlborough-road, for the London Education Committee :—

Rice and Son, Stockwell-road ...	£8,790 0 0
Parker, G., and Sons, Peckham ...	7,998 0 0
Downs, W., Walworth-road ...	7,941 0 0
Bowyer, J. and C., Ltd., Upper Norwood	7,823 0 0
Holliday and Greenwood, Ltd., Battersea	7,725 0 0
Garrett, J., and Son, Balham Hill	7,664 0 0
Wallis, G. E., & Sons, Ltd., Haymarket	7,532 0 0
Akers, W., and Co., Ltd., South Norwood	7,489 0 0
Smith, W., & Son, Harleyford-rd.	7,469 0 0
Triggs and Co., 92, The Chase, Clapham (accepted) ...	7,170 0 0

Architect's estimate, £17,250.

CLAPHAM, S.W.—For adapting the disused premises of the old fire-station facing Clapham Common, for use partly as a tenement for the head-keeper and partly as an office and store, for the London County Council :—

Bickerton, W., Catford	£299 10 0
Rice and Son, Brixton	298 0 0
Harding, R., and Son, Brixton Hill	288 10 0
Triggs and Co., Clapham	279 0 0
Fletcher, F. W., Tooting*	227 0 0

Estimate of the architect, £249.
* Recommended for acceptance.

HACKNEY.—For sanitary improvements at Millfields-road School, for the London Education Committee :—

Smith, F., & Co., Abchurch-lane	£851 0 0
Finch B., & Co., Ltd., Belvedere-road	830 0 0
Symes, A. E., Stratford	822 0 0
Horswill, H. C., Forest Gate ...	815 0 0
Ashby and Horner, 8, Aldgate ...	794 0 0
Bull, F., Upper Clapton	791 0 0
Thorne, F. and T., Isle of Dogs ...	775 0 0
Beattie, W., 8, Lower Grosvenor-place	763 0 0
Price, C. R., 87, Bishopsgate ...	761 0 0
Silk, W., and Son, Homerton ...	738 0 0
Griggs and Son, Cubitt Town ...	650 0 0
Vigor and Co., 15, King-street, Poplar (accepted)	633 0 0

Architect's estimate, £676.

ISLINGTON.—For new school, Wilson-street, for the London Education Committee :—

Leslie and Co., Ltd., Kensington Square	£29,578 0 0
Bowyer, J. and C., Ltd., Upper Norwood	27,472 0 0
Chessum, J., and Sons, 7a, Southplace	26,492 11 7
Wallis, G. E., and Sons, Ltd., Haymarket	26,217 0 0
Lawrence, W., and Son, Finsbury-circus	25,448 0 0
Brand, Pettitt, & Co., Tottenham	25,441 0 0
McCormick and Sons, Ltd., Essex-road (accepted)	24,683 0 6

Architect's estimate, £26,000

ISLINGTON.—For remodelling Gifford-street school, for the London Education Committee :—

Carmichael, J., Wandsworth Common	£26,089 0 0
Bowyer, J. and C., Ltd., Upper Norwood	25,112 0 0
Holliday and Greenwood, Ltd., Battersea	24,787 0 0
Chessum, J., and Sons, 7a, Southplace	24,107 16 7
Wallis, G. E., and Sons, Ltd., Haymarket (accepted)	22,969 0 0

Architect's estimate, £22,740.

ISLINGTON.—For building a temporary school in Shebbon-street, Islington, for the London Education Committee :—

	A.	B.
Hygienic Constructions and Portable Buildings, Ltd.	£1,662 0 0 ...	—
Harrison, J., and Co. ...	1,246 0 0 ...	1,420 0 0
McManus, J.	*1,171 14 4 ...	1,184 7 3

* Accepted. Architect's estimate, £1,275.

A.—For building in corrugated iron studding and asbestos cement lining. B.—In concrete slab construction.

LEWISHAM.—For building a temporary school at Burnt Ash-hill, for the London Education Committee:—

	A.	B.
Hygienic Constructions and Portable Buildings, Ltd.	£1,662 0 0	(Dorker Construction.)
Humphreys, Ltd.	1,369 0 0	£1,351 0 0
MacManus, J.	1,162 17 4	*1,182 15 2

* Accepted. Architect's estimate, £1,195.

A.—For corrugated iron construction. B.—For concrete slab construction.

LITTLE HAMPDEN.—For proposed new house at Little Hampden, Great Missenden, for Captain T. Trevor-Battye. Mr. G. H. Fellowes Prynne, F.R.I.B.A., 6, Queen Anne's Gate, S.W., architect. Quantities by Mr. R. Henry Hale, F.S.I., 6, Queen Anne's Gate, S.W.:—

Dickens, W. J., Ealing	£6,267 0 0
Honour, J., and Sons, Ltd., Tring	6,239 0 0
Bowman, A. W., Bournemouth	5,895 0 0
Franklin, Ltd., Deddington	5,748 0 0
Schooley, R., and Sons, Finsbury	5,690 0 0
Webster and Cannon, Aylesbury	5,668 0 0
Biggs, G., & Son, High Wycombe	5,185 0 0
Blake, W. E., Bloomsbury	5,150 0 0
Gibson, G. H., and Sons, High Wycombe	5,049 0 0
Wright, H. J. and A., Great Missenden	4,955 0 0
Walden & Cox, Henley-on-Thames*	4,951 2 5

* Accepted.

LONDON.—For the supply of 200 cast steel driving-wheel centres for electric cars, delivered to a siding at Charlton, S.E., for the London County Council:—

	Each wheel.
Baker, J., and Co. (Rotherham), Ltd., Rotherham	£2 7 6
The Springfield Steel Co., Ltd., Glasgow	2 6 0
Hadfield's Steel Foundry Co., Ltd., Tinsley, Sheffield	2 3 3
Fried. Krupp Aktiengesellschaft, Essen-Ruhr, Germany	2 2 0
The National Steel Foundry, Ltd., Leven Fife	1 16 9
Société Anonyme Aciéries et Fonderies d'Art de Haine-Saint-Pierre et Metallurgique, Lilloise	1 14 0
Estler Bros., Dowgate Hill, E.C.	1 12 0
The British Griffin Chilled Iron and Steel Co., Ltd., Barrow-in-Furness*	1 11 0
Usines Gustave Boel, Belgium	1 5 2
Société Anonyme Usines et Aciéries Allard, Belgium*	1 4 8
	Per ton.
Tennent, R. B., Coatbridge, Scotland	3 10 0
Firth, T., and Sons Ltd., Sheffield	—
Hurst, Nelson, and Co., Ltd., Motherwell	3 0 0
The Glasgow Engineering Co., Ltd., Glasgow	2 15 0

† Not to specification. * Recommended for acceptance.

LONDON, S.E.—For proposed alterations and decorative work, Nos. 44 and 46, Harleyford-road, S.E., for the owner. Mr. Gordon Wilson and Co., 1, Vaughan-avenue, Goldhawk-rd, Hammersmith, W., architects:—

Constructional Work, lighting, heating, and drainage (including adjustment on drainage) —	
Smith, W. S. and Sons	£872 9 1
Galpin, J., and Son	855 8 0
Selway, J., and Sons	852 1 1
Sims and Sons (accepted)	799 18 6
Painting and decorating:—	
Selway, J., and Sons	149 1 3
Galpin, J., and Sons	124 18 0
Sims and Sons (accepted)	124 15 4
Cooke, H.	105 6 0
Smith, W., and Sons	98 0 0

LOWBOURNE, WILTS.—For building a new council school at Lowbourne, near Melksham, for the Wilts Education Committee:—

Sturgess and Co., Andover (Accepted.)	£4,360 0 0

MANCHESTER.—For the erection of Parochial Hall, &c., at Ardwick, for the Bishop of Manchester's Commission. Mr. E. H. Lingen Barker, 4, Moscow-court, W., architect. Quantities by Mr. G. Silvester, F.S.I., 7, Adam-street, Adelphi, W.C.:—

Parish and Co.	£3,765 0 0
Peace and Norquoy	3,725 0 0
Normanton and Sons	3,614 0 0
Burgess and Salt	3,550 0 0
Thorpe and Son	3,459 0 0
Moore, J. F. (accepted)	3,410 0 0

(All of Manchester.)

NORWOOD.—For enlarging school, Gipsy-road, for the London Education Committee:—

Holliday and Greenwood, Ltd., Battersea	£16,297 0 0
Wallis, G. E., and Sons, Ltd., Haymarket	14,626 0 0
Appleby, J., and Sons, Ltd., Southwark Park	13,991 0 9
Bowyer, J. and C., Ltd., Upper Norwood (accepted)	13,854 0 0

Architects estimate, £13,890.

NORWOOD.—For the erection of a school for mentally defective children, Gipsy-road, for the London Education Committee:—

Holliday and Greenwood, Ltd., Battersea	£4,124 0 0
Bowyer, J. and C., Ltd., Upper Norwood	3,986 0 0
Wallis, G. E., and Sons, Ltd., Haymarket	3,955 0 0
Appleby, J., and Sons, Ltd., Southwark Park (accepted)	3,822 0 0

Architect's estimate, £3,814.

POPLAR, E.—New school for infants, Woolmore-street, for the London Education Committee:—

Bowyer, J. and C., Ltd., Upper Norwood	7,575 0 0
Chessum, J., and Sons, 7a, South-place	7,490 17 4
Symes, A. E., Stratford	7,416 0 0
Patman and Fotheringham, Ltd., Park-street, Islington (accepted)	7,283 0 0

Architect's estimate, £7,745.

ST. PANCRAS.—For enlarging central school, Haverstock-hill for the London Education Committee:—

Stevens and Sons, Crouch-hill	£4,132 11 1
Bowyer, J. and C., Ltd., Upper Norwood	4,069 0 0
Lawrence, W., and Son, Finsbury-circus	3,970 0 0
Ford and Walton, Ltd., Kilburn	3,880 7 4
Gedson, G., and Sons, Kilburn	3,788 0 0
Roberts, A., and Co., Ltd., Earl's Court-road	3,744 0 0
McCormic & Sons, Ltd., Essex-road	3,699 0 0
Willmott, J., and Sons, Hornsey, N. (accepted)	3,561 14 7

Architect's estimate, £3,665.

SUTTON VALENCE.—For the erection of Sutton Valence council school, for the Kent Education Committee. Mr. Wilfrid H. Robinson, M.S.A., architect to the committee:—

Holmes, J., and Son, Catford	£4,895 10 6
Fenn, A. M., Weoowich	4,128 0 0
Cox Bros., Maidstone	4,049 0 0
Parren and Son, Erith	3,932 0 0
Friday and Ling, Erith	3,927 0 0
Barwick, R. F., Dover	3,838 0 0
Godden, D., and Son, Ashford	3,768 0 0
Shippam, W., Ashford	3,748 0 0
Bowles, E. J., Ashford	3,742 0 0
Pooger, J., and Sons, Bromley	3,695 0 0
Wallis, G. E., and Sons, Maidstone	3,561 0 0
Burrows, W. T., Maidstone	3,499 0 0
Wood, J., and Son, Boughton Monchelsea (accepted)	3,473 0 0

SWANSEA.—For the supply of the whole of the timber required for the building of the show yard at Swansea, for the Bath and West and Southern Counties Society:—Gregor Brothers, of Swansea (accepted).

WANDSWORTH.—For enlarging Brandlehow-road school, for the London Education Committee:—

Smith, F., and Co., Abchurch-lane	£3,954 16 0
Garrett, J., and Son, Balham Hill	5,159 0 0
Rice and Son, Stockwell-road	5,099 0 0
Bowyer, J. and C., Ltd., Upper Norwood	4,895 0 0
Wallis, G. E., and Sons, Ltd., Haymarket	4,750 0 0
Kent, H., Hither Green	4,660 0 0
Triggs and Co., Clapham	4,310 2 1
Fletcher, F. W., Tooting	4,287 0 0
Dickens, W. J., Ealing*	4,131 6 0

* Accepted, with terracotta dressings, at £4,136 10s.

TO CORRESPONDENTS.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

It is particularly requested that all drawings and all communications respecting illustrations or literary matter, books for review, etc., should be addressed to the EDITOR of the BUILDING NEWS, Effingham House, 1, Arundel-street, Strand, W.C., and not to members of the staff by name. Delay is not infrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

RECEIVED.—W. and W. D. Bros., Ltd.—L. B. V.—G. T., Ltd.—M. and Co.—L. L. Co., Ltd.—B. P. P. and Co.—W. C. M., Ltd.—G. P. A.—F. B. and Co.—C. L. Co.—E. T. W. L.—E. H. S. and Bro., Ltd.—B. S. Co., Ltd.—O. S.—J. W. and Co.—H. Bro.—A. W. C.—B. M.—B. O. Co.—W. H. S. and Son.—M. G. and Co.—R. H. M.

CHRONOS.—Yes.

S. B. L.—We are not sure.

TURNER.—Out of our line. Take it or other paper the "English Mechanic."

BRICCO.—We do not know if the firm still exists. It does not appear in our "Directory" of recent addresses.

J. HOLMES.—Question as to examination are quite beyond the scope of "Inter-communication." We think ourselves you ought to have no difficulty, but a few lessons from a good coach familiar with Southern practice would be advisable.

"BUILDING NEWS" DESIGNING CLUB.

DRAWINGS RECEIVED.—"Scot," "Bevan," "Coral," "Kilo," "Cole," "Norvic," "Corinth," "Tweedie," "Roy," "Keystone," "Youngsted," "Pinto," "H," "Beeswise," "Infant," "Arno."

A. ARCHER BELHAM.—1. The printed description on xiv. Oct. 31 is quite correct as to number of stories for the London area, four stories, including the ground floor. The basement makes a fifth floor, but that is described more for the purpose of giving competitors an idea of how the accommodation specified for that part is to be accounted for, otherwise they might put a coal place in the roof or on the ground floor. The problem mainly is concerned with the ground, first, second, and third floors. The section need not show the basement if the sheet of paper does not afford room. The best way to lay out the sheet to advantage is to sketch out roughly the various elevations, plans, and Section to the scales specified, and then cut them out and lay these items down on the final sheet, so as to make how they will best fit in and make a good looking sheet. 2. See Rules, BUILDING NEWS, Oct. 3, 1913, p. 465, for size of paper, &c. 3. The lift to have one carriage over another, not a pair of lifts side by side. 4. The site out-to-out is 74ft. deep by 40ft. wide, from depth take 14ft. for forecourt. All as stated in the Instructions, p. xiv., Oct. 31.

An Absolutely Unique Work on Decoration

By R. GOULBOURN LOVELL, A.R.I.B.A.

"Home Interiors" is an absolutely unique work for all interested in any way in the application of colour to internal decoration.

Not only does it contain a series of 38 large facsimile water-colour drawings, providing in complete detail, suggested decorative schemes for all sorts of houses with full half-size detail plans, instructions, etc. It does much more than this.

Patented Colour Charts.

It provides, for the first time, the means of drawing up similar schemes, and, indeed, colour schemes of any kind with absolute accuracy. For this purpose, it includes a series of patented mechanical colour charts, designed for the selection of colour schemes and harmonising colours. By the use of these charts, the exact complementary of any given colour is at once disclosed, and at the same time not only those other colours that can be used to produce any desired scheme, but also the proportion of each that must be used to give the best possible effect. These charts teach, moreover, in a particularly valuable manner, the whole theory and practice of colour.

Large Water-colour Drawings.

But apart even from this unique invention, the many large facsimile water-colour drawings of specimen rooms would be extremely valuable as showing practical and economical schemes of decoration that will appeal as being decidedly novel and at the same time in the best of taste. Moreover, these plates are the first large-size plates which show how windows can be treated effectively and without obscuring light.

Full Working Details.

Each plate, moreover, is accompanied by ful half-size details, as well as complete explanatory notes, explaining its principles and objects, and pointing out an alternative scheme where, for any reason, it cannot be adopted in its entirety.

BUILDING NEWS, October 31th, says:—

"The small householder, at a rental of from £25 to £75 a year, has not had much done for him yet as regards the economical and effective decoration of his home, and 'Home Interiors' will prove a boon to decorators and designers of such dwellings and all concerned in their adornment. We cordially recommend the work to all."

The work, however, is so unlike any other ever published that a clear idea can better be given by the

FREE BOOKLET,

which will be sent free of charge, and without any obligation, upon receipt of this form.

To the Caxton Publishing Co., Ltd.,
130, Surrey Street, London, W.C.

Please send me, free of charge, booklet on "Home Interiors" and your offer to deliver the work as published for a first payment of 2s. 6d. only, the balance being paid by small monthly payments.

NAME .....
(Send this form or a postcard.)

ADDRESS .....

.....

LIST OF COMPETITIONS OPEN.

Nov. 12	Elementary School, Denby-road, Luton (United Competition)		The Education Secretary, Town Hall, Luton.
,, 14	Three Pairs of Workmen's Cottages, Needham Market	5gs.	R. M. Cook, Clerk, 6, Providence-street, Ipswich.
,, 18	Destructor, Schaerbeek-le.-Bruxelles		Service de l'Ingenieur, 30, Rue de la Roche, Brussels.
,, 29	Band Pavilion, West Cliff, Folkestone (limit of cost £20,000). (Edwin T. Hall, F.R.I.B.A., 34, Bedford-square, W.C., Assessor)		A. F. Kidson, Town Clerk, Folkestone.
Dec. 29	New Offices for Board of Trade, &c., Whitehall Gardens, S.W. [R. Blomfield, M.A. (Oxon), A.R.A., P.R.I.B.A. J. Belcher, R.A., and Sir Aston Webb, C.V.O., C.B., R.A., Assessors] Sketch Designs, ten will be Selected,		
1914.	with £300 Honorarium each		The Secretary, H.M. Office of Works, Storey's Gate, S.W.
Jan. 2	Manchester Royal Exchange, Additional New Buildings and Alterations. Open to all architects in U.K. Not more than 12 architects of repute have been specially invited; each of whom will receive one hundred guineas. The three selected architects will receive one hundred guineas each. Author of design placed first will be appointed. (J. S. Gibson, F.R.I.B.A., Assessor)		Rich. J. Allen, Master, Royal Exchange, Manchester.
,, 20	Masonic Temple, Toronto (Estimated cost, about £51,400)	Five unsuccessful competitors to receive 750dol., 500dol., and 250dol. respectively	W. H. Best, 181, Avenue-road, Toronto.
Feb. 1	Municipal Technical Institute, Pool Meadow, Coventry		G. Sutton, Clerk, Education Office, 44, Bayley-lane, Coventry.
,, 15	Savings Bank, Verona (Five Assessors)	£1,200, £600	The Savings Bank, 1, Via Garibaldi, Verona.
Mar. 20	Public Museum and Art Gallery, Belfast (John J. Burnet, A.R.S.A., LL.D., Assessor)	Selected Architect to carry out work; second, £100; third, £75; fourth, £50	R. Meyer, Town Clerk, City Hall, Belfast.
April 2	Departmental and Courts Buildings, Ottawa (T. E. Collcutt, J. H. G. Russell, and J. O. Marchand, Assessors). Double Competition, five unsuccessful competitors in second to receive 3,000dol. each		R. C. Desrochers, Department of Public Works, Ottawa, Ont.
No date	Wesleyan Church, Findochty		Rev. J. Whitaker Bond, Wesleyan Manse, Portessie, Buckie.
do.	Technical School, Cookstown, Ireland	10gs.	L. Bradley, Director, Mount Royal, Dungannon.
do.	Cottages, Loughton, Bucks		C. W. Powell, Clerk, Newport Pagnell.

LIST OF TENDERS OPEN.

BUILDINGS.

Nov. 8	School (136 places), Fazeley	Staffordshire Education Committee	Graham Balfour, Director of Education, Fazeley.
,, 8	Cemetery Chapel and Lodge, Ludlow	Corporation	W. G. Lane, Boro' Eng., Ludlow.
,, 8	Cottage, Merrifield, Holsworthy	Devon County Council	D. Ward, 7, Courtenay-street, Plymouth.
,, 8	Council School, Camelford	Cornwall Education Committee	B. C. Andrew, Archt., Biddick's-court, St. Austell.
,, 8	Electric Lighting Station, Extension of, Rathmines	Urban District Council	Beckett and Medcalfe, Surs., 6, Clare-street, Dublin.
,, 8	Golf Club House, Castlerock, County Derry		Robinson and Davidson, Archts., Richmond-st., Londonderry.
,, 8	Drumwhindle Public School, Alterations to, Ellon		W. Davidson, Archt., Ellon.
,, 8	Farmhouse, Uppaton Farm, Milton Abbot, Devon	County Council	D. Ward, 7, Courtenay-street, Plymouth.
,, 8	Public Bath House, Cage-lane, Walton, Suffolk	Felixstowe and Walton U.D.C.	H. Clegg, A.M.I.C.E., Sur., Town Hall, Felixstowe.
,, 8	Six Cottages, Repairs to, New Yard, Workington	T. W. Ward and Co., Ltd.	W. G. Scott and Co., Archts., 2, Park-lane, Workington.
,, 10	School Works, Chelsford Pratts Bottom	Kent Education Committee	W. H. Robinson, Archt., Caxton House, Westminster, S.W.
,, 10	Cottages (39), Fairfax-avenue, Selby	Urban District Council	B. Gray, C.E., F.R.S.Edin., Council Chambers, Selby.
,, 10	Training College, Caerleon, Monmouthshire	Education Committee	A. Swash and Son, FF.R.I.B.A., Newport, Mon.
,, 10	Workhouse, Infants' Wards at, Huntingdon-road, York	Guardians	S. Needham, 18, Coney-street, York.
,, 10	Teacher's House, Townhead School, Kirkcudbright	School Board	A. Cavan, Clerk, Kircudbright.
,, 10	Voluntary School, Additions to, Sapiston, Suffolk	Managers	S. Naish, M.S.A., 7, Hatter-street, Bury St. Edmunds.
,, 10	Engineer's Smithy, Extension of, Dundalk	Great Northern (Ireland) Ry. Co.	T. Morrison, Sec., Amiens-street Terminus, Dublin.
,, 11	Smallpox Hospital, Renovation of, Haine, Ramsgate	Joint Hospital Board	H. B. Langham, Archt., Bank Chambers, High-st., Broadstairs.
,, 11	Swimming Bath, Elmfield-road, Balham, S.W.	Wandsworth Borough Council	The Council House, East-hill, Wandsworth.
,, 11	House for Station Master, Twizell	North Eastern Railway Co.	W. Bell, Archt, York.
,, 11	Rebuilding No. 18, Peas Hill, Cambridge	Town Council	The Borough Surveyor, Guildhall, Cambridge.
,, 11	Parish Church of Saint Vincent de Paul, Ghent		M. H. Geirnaert, Archt., 26, Ottogeacht.
,, 11	Workhouse Infirmary, Alterations to, Birkenhead	Guardians	E. Kirby and Sons, Archts, 5, Cook-street, Liverpool.
,, 11	School, Trafford Park, Old Trafford	Stretford Education Authority	Woodhouse and Howard, Archts., 88, Mosley-st., Manchester.
,, 11	Stationmaster's House, South Milford	North-Eastern Railway Co.	W. Bell, Archt., York.
,, 12	Workhouse Hospital, Nurses' Home at, Firvale, Sheffield	Guardians	Potter and Sandford, Archts., 16, St. James'-row, Sheffield.
,, 12	School of Art, Extensions to, Waverley-st., Nottingham	School of Art Committee	W. J. Board, Town Clerk, Guildhall, Nottingham.
,, 12	Eight Houses for Working Classes, Brigg	Urban District Council	E. K. Clark, Sur., Brigg.
,, 12	Glebe Farm Buildings, Sutton Veny		Harding and Son, Archts., 58, High-street, Salisbury.
,, 12	Two Semi-detached Houses, Skipton-avenue, Fartown		J. Berry and Sons, Archts., 3, Market-place, Huddersfield.
,, 12	Five Houses, Sackup-lane, Darton		Crawshaw and Wilkinson, Archts., 13, Regent-st., Barnsley.
,, 13	Public Baths, Nelson-street, Kingston	Glasgow Corporation	J. Lindsay, Town Clerk, City Chambers, Glasgow.
,, 13	Houses (63 blocks), Belfast	Public Health Committee	Chillingworth and Levie, Archts., Belfast.
,, 13	Engine and Boiler Houses and Coal Stores, Tweedmouth	Berwick-on-Tweed San. Authority	Gray and Boyd, Archts., Berwick.
,, 13	Infirmary, Alterations to, Bancroft-road, Mile End, E.	Guardians	E. J. Harrison, Archt., 9, Gray's Inn Square, W.C.
,, 13	Premises, Additions to, Low Field House, Churwell	Working Men's Club	T. A. Buttery, L.R.I.B.A., Queen-street, Morley.
,, 14	Pair of Cottages and Shop, East Stoke		W. W. Fookes, Archt., North-street, Wareham.
,, 15	Pendomer House, Alterations to, West Walks Dorchester	Dorset Municipal Charities	F. T. Maltby, Archt., Dorchester.
,, 15	Infectious Diseases Hospital, Sandy-lane, Hindley	Urban District Council	O. P. Abbott, Council Offices, Hindley.
,, 15	Swimming Bath, Stalybridge	Corporation	J. N. White, Boro' Sur., Town Hall, Stalybridge.
,, 17	Cottages (16), Pinvin, Pershore	Rural District Council	Dicks and Waldron, Archts., Evesham.
,, 17	Isolation Hospital, Additions to, Shirley	Southampton Corporation	The Borough Engineer, Southampton.
,, 17	Eight Workmen's Cottages, Beach-street, Dover	Town Council	W. C. Hawke, A.M.I.C.E., Maison Dieu House, Dover.
,, 17	Technical School, Extensions to, Leigh, Lancs	Town Council	H. Littler, 16 Ribbledale-place, Preston.
,, 17	Fire Station, Additions to, Alroy-road, Harringay, N.	Hornsey Town Council	E. J. Lovegrove, Boro' Eng., Municipal Offices, Highgate, N.
,, 17	Two Cottages, Llantilio Crossenny	County Council	W. Tanner, F.S.I., County Sur., Newport, Mon.
,, 17	Isolation Hospital, Hinckley		Heaton and Walker, Archts., 3, The Boro, Hinckley.
,, 17	Gendarmes' Barracks, Arlon		Direction des Pontes, 4, Rue de l'Athenee, Brussels.
,, 17	Two Cottages, Aspatria, Cumberland		W. G. Scott and Co., Archts., 2, Park-lane, Workington.
,, 18	Council School, Additions at, East Howle	Durham County Council	W. Rushworth, Shire Hall, Durham.
,, 18	Workmen's Dwellings, Rectory Estate, Rushden	Urban District Council	W. B. Madin, Sur., Council Buildings, Rushden.
,, 18	Tramway Offices, Additions to, Seaview-road, Wallasey	Corporation	W. H. Travers, A.M.I.C.E., Boro' Eng., Falkland-rd., Egremont.
,, 18	Seven Working Class Houses, Meare	Wells Rural District Council	Petter and Warren, Archts., Yeovil.
,, 18	Two Cottages, Alterations to, Heckmondwike	Liversedge Urban District Council	A. Rothera, M.I.M.C.E., Sur., Liversedge.
,, 18	Subways at Sick Asylum, Bow, E.	Poplar Sick Asylum District	J. and W. Clarkson, Archts., 136, High-street, Poplar, E.
,, 18	Inland Revenue Offices, Pulling Down, Birmingham	H.M. Works Commissioners	J. Tosh, H.M. Office of Works, 42, Paradise-street, Birmingham.
,, 18	Council School (560 places), High Spen	Durham County Council	Liddle and Browne, Archts., Aldon-square, Newcastle-on-Tyne.
,, 19	Workmen's Houses (22), Wellington, Salop	Urban District Council	J. Littlewood, Clerk, Bank Chambers, Wellington, Salop.
,, 19	Married Soldiers' Quarters, Newbridge, Ireland	Secretary of State for War	The Director of Barrack Construction, 80, Pall Mall, S.W.
,, 21	School, Alterations to, Stourton, Rothwell	West Riding Education Committee	The Education Architect, County Hall, Wakefield.
,, 21	Headquarters, Wood-lane, Harborne	Warwickshire Terr. Force Assoc.	S. N. Cooke, 117, Colmore-row, Birmingham.
,, 22	School, Nansen-street, Ardwick, Manchester	Education Committee	The Education Offices, Deansgate, Manchester.
,, 22	East End Council School, Additions to, Pembroke	Education Committee	K. McAlpin, Archt., Pembroke Dock.
,, 22	Two Cottages, Grangegreen		P. Fulton, Archt., Forres.
,, 24	Police Station, Dacre-street, Middlesbrough	Corporation	S. E. Burgess, M.I.C.E., Municipal Buildings, Middlesbrough.
Dec. 1	Houses and Farm Buildings, Ridley Estate, Nantwich		W. H. Lancaster, Land Agent, 49, Northgate-street, Chester.
,, 3	Workhouse, Buildings at, Pleck-road, Walsall	Guardians	H. E. Lavender and Son, Archts., Bridge-street, Walsall.
,, 6	Debt Control Offices, Casablanca, Morocco		President de la Commission, Dar En Niaba, Tangier.
,, 17	Houses (113), Penton Village	Chester-le-Street R.D.C.	J. H. Mole, Sur., Chester-le-Street.
No date	St. Joseph's schools, Wolverhampton	Managers	Fleeming and Sons, Archts., 10, Queen-square, Wolverhampton.
do.	Shop, Grove-road, Southsea		S. Eveland Isted, F.S.I., 6, Merton-road, Southsea.
do.	Four Houses, Station-road, Featherstone	Hon. J. C. Lister	W. H. Fearnley, Archt., Station-lane, Featherstone.
do.	Branch Store, Additions to, Dudley Hill	Birkenshaw Industrial Soc., Ltd.	A. T. Verity, Archt., Kirkgate-terrace, Birkenshaw.
do.	Workhouse Infirmary, Flooring Three Wards at, Dudley	Guardians	E. Allen, Clerk, St. James'-road, Dudley.
do.	Wesleyan Sunday School, Horbury	Cadbury Bros., Ltd.	Cadbury Bros., Ltd., Bourneville Works, Bourneville.
do.	Ten Cottages, Removal of, Bourneville		Garside and Pennington, Archts., Pontefract.
do.	Two Houses, Scotchman-lane, Batley		A. Jackson, Howley Park Colliery, Batley.
do.	New Co-operative Stores, Wheatley Hill, Co. Durham		J. Wilson Hays, Architect, Co. Durham.

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THE BUILDING NEWS

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OUR ILLUSTRATIONS.

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London County and Westminster Bank, Palmer's Green. View and plan. Mr. A. Sykes, F.R.I.B.A., Architect.

New Fire Brigade Station and Firemen's Dwellings, Blackburn. Selected Design. Mr. Walter Stirrup, F.R.I.B.A., Architect.

A Shop at Eastbourne. Mr. A. Sykes, F.R.I.B.A., Architect.

The White House, Edgware. View and plans. Mr. J. E. Dixon Spain, A.R.I.B.A., Architect.

BUILDING NEWS Designing Club. A Block of Almshouses, with Chapel and Hall. Three Selected Designs.

Ornamental Tile-Work.

"CHARTERED ARCHITECTS," OR STATUTORY REGISTRATION?

The R.I.B.A. Council has apparently determined to abandon the Registration Bill. Its report and recommendations, which are now in the hands of all members, will be considered at the special general meeting to be held on Dec. 1. We trust that meeting will be fully attended, for the occasion is a momentous one, and nothing will be more disgraceful to all concerned, or, possibly, more disastrous to the profession, if acceptance or rejection of the Council's proposals is the work of a mere handful of members. Let us add here, at the outset, that it is not very creditable to the Provincial Architectural Societies which have been asked for their opinion, that out of nineteen consulted six "have not yet completed their consideration of the Report," although over seven months have passed since this question was submitted to them; and it is not reassuring to note the absence of unanimity among these allied societies which have sent in replies. It is most emphatically the business of every architect, and of every association of architects in the Kingdom, to have an opinion on this matter at the present juncture, and to express it. Let us, at any rate, do all we can by recalling recent facts and explaining the present position.

On March 4, 1907, the R.I.B.A. was definitely committed by the resolutions of a General Meeting to the policy of endeavouring to obtain the Statutory Registration of Architects. The ultimate outcome was the submission by the Council on Jan. 8, 1912, to a General Meeting of proposals for the absorption of the Society of Architects and the promotion of a Registration Bill. Those proposals were referred back by the General Meeting to the Council for further consideration. The Council thereupon appointed a Committee, which included representatives of the provincial societies, to consider the whole question and report to it. That Committee spent more than twelve months over the business, and reported to the Council on March 28 last. The Committee first submitted "a complete case for Registration as it stands to-day" to Messrs. Markby Stewart and Co., solicitors, and Mr. John Kennedy, Parliamentary Agent, who advised the Committee that a Bill on those lines appeared to them to be impracticable; first, because that the principles established were not suitable material on which to frame a Bill; that it was contrary to public policy and Parliamentary practice to create such a monopoly as would result; that the R.I.B.A. had failed to include the whole of the practising architects in its membership, and could not now do so, as the Class of Licentiates was closed; and that if such an Act were passed the Licentiates would be liable to statutory control without representation on the R.I.B.A. governing body.

It will be observed that no indication is given in the Committee's report of the scope and purpose of the "complete case for Registration as it stands to-day." If it embodied proposals to make the R.I.B.A. the sole qualifying authority, we can quite understand the objections urged by the solicitor and Parliamentary agent. However that may be, the Committee then proceeded to consider the Draft Registration Bill of 1905, that "having been recommended to the Committee by Messrs. Markby Stewart and Mr. Kennedy as a suitable measure of this kind." This, now "and largely revised and brought up to date," the Committee submitted to the Council, expressing the opinion that there is little prospect of any Bill of this nature becoming law in the near future, and recommending the Council to call a General Meeting to receive the Solicitor and Parliamentary Agent's Reports, examine the Bill as now drafted, and decide whether efforts should be made to pass the Bill, or

Whether some alternative course, apart from Registration, should be determined on, such as obtaining by a new Charter the recognition by the Privy Council of the compulsory Examination of the R.I.B.A. for all intending architects, and of such a scale of charges as the Privy Council may approve.

The Council thereupon appointed a "Constitutional Committee" to consider the Registration Committee's Report. We presume the result of that Committee's labours is embodied in the decision the Council has come to, realising the restrictions embodied in the present Charter as recognised in their Report, to abandon any further present action in respect of Registration, and to apply for a new Charter extending the privileges and powers of the Institute and enabling it to "distinguish persons qualified to practise."

THE NEW CHARTER

is to enable all members of any rank—Fellows, Associates, or Licentiates—to have the exclusive right of calling themselves "Chartered Architects," and the Institute is to maintain a Register of all such. The Institute is also to control "all examinations"—of outsiders as well as members, we gather—for qualification as "Chartered Architects."

The rest of the proposals with regard to the New Charter are mainly domestic. Associates are to vote on all matters in the future, and 10 per cent. of the Licentiates. The Council is to be enlarged and made more representative, and the Institute is to be empowered to purchase and hold a hall of a value not exceeding £5,000 per annum.

The pith of the scheme, of course, is the value of the qualification the Institute proposes to seek the power compulsorily to impose, and the probability that the Privy Council will give that power to the Institute exclusively. We doubt it. The Society of Architects and the Universities will urge that no such single qualifying body has been recognised in the other professions. Supposing it is granted either to the Institute exclusively or in conjunction with other qualifying bodies, if it is largely responded to by outsiders, it will certainly affect the status and probably the membership of the Institute itself. With the general public a "Chartered Architect" will be as good as a "F.R.I.B.A.," and the Institute will have given him the same status as its own examined and subscribing architects. On the other hand, it will afford him no more protection against the charlatan or the incompetent than it gives him to-day and the public will be as much at the mercy of the interloper as it is now.

Honestly, we wish the new proposals seemed more workable. The Institute has done so much during the last eight years to advance the interests of architecture that it deserves all possible support. As things are to-day, our feelings would prompt its legal recognition as the sole compulsorily qualifying body; and had the absorption of the Society of Architects been completed, and the admission of the Licentiates been more general, possibly Parliament might have made it so ultimately. What Parliament certainly would refuse the Privy Council will hardly grant. State control is the inevitable price of State recognition; and State control will never be permitted to be exercised—at any rate, in any such effective fashion as the G.M.C. controls medicine, with the conjunction of only one qualifying body.

ORNAMENTAL TILE-WORK. IV.

PORCHES, DOORWAYS, AND HOODS.

One of the best positions to introduce a little ornamental relief with the greatest effect is undoubtedly that of the porch, particularly where the nature of the work does not admit of much decoration, and, in consequence, has to be sparingly applied. In such cases it is far better to mass it in some particular feature than to "coat" a building with a species of cheap "decoration," either by means of ready-made moulded bricks, etc., or otherwise. A little tile-work, combined with brick relief, massed, something after the style illustrated in Fig. 1, has a far better

...resh. With the top of a building treated ...also in a somewhat similar manner, and a ...r cornice on similar lines, it would give a large amount of picturesque architectural effect. At the same time, generally speaking, it would be far lower in cost than many systems of decoration, inasmuch that it does ...involve any special materials. The arch

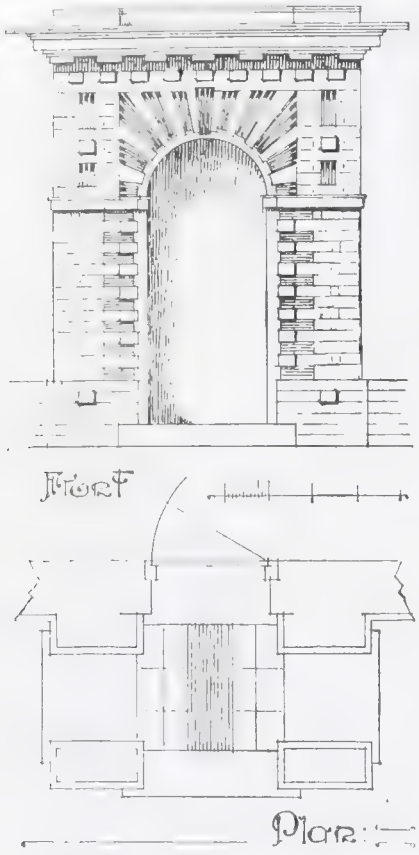


Fig. 1.

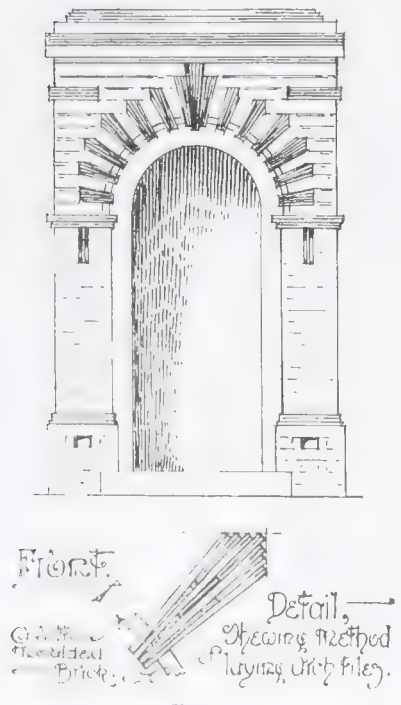
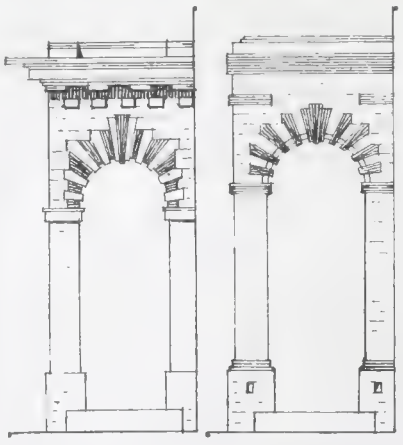


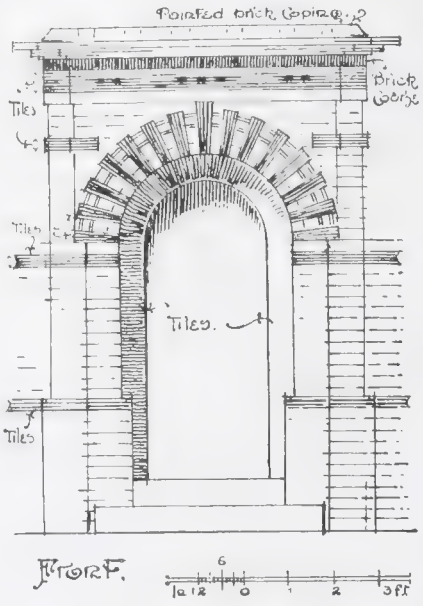
Fig. 2.

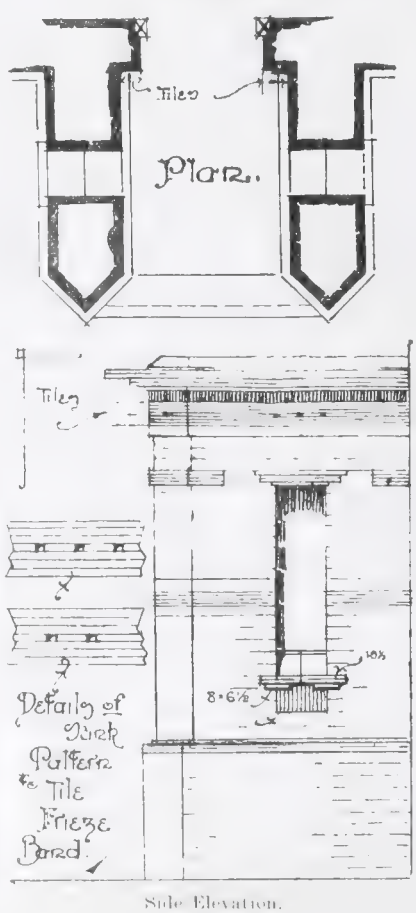
...way can be treated either in a square out...line ...be as be the front, or as depicted by the side elevation. The cornice has broad dentil blocks formed by a couple of tiles superimposed, with a brick course introduced in the centre, the blocking course over being also formed with a course of bricks and a couple of rows of tiles flush with same, as a capping-piece, set in cement.

Small panels of vertical fluted tiling (as described in previous article) are introduced



Side Elevation of Fig. 1 — Side Elevation of Fig. 2.





Side Elevation.

Fig. 3.

in the frieze, on either side of the arch, with a slightly-raised header brick in the centre. Raised rusticated bricks are also introduced on the inside of the front piers, between the tile quoins, with one in each base-plinth. On plan, broad stone steps or other material are shown, with a large tile centrepiece, having a row of tiles on edge in the middle, introducing a further variation here. Fig. 2 illustrates a still simpler method of using tile

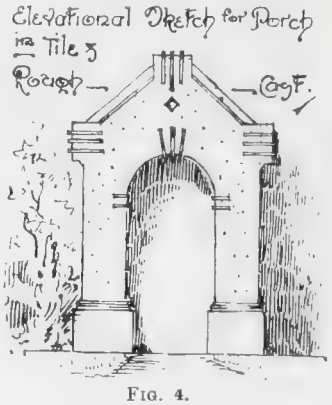


Fig. 4.

relief in a restrained manner, for such positions. At the same time it possesses a good deal of effect. The detail sketch on this figure shows a method of forming the tile arch blocks, which dispenses with the more expensive rubbing involved by arch-bricks. A couple of short tiles are inserted at the top (between the long double lengths), whilst a single short one is again inserted at the end of these, thus obtaining the taper, as shown. A cavetto moulded brick is introduced to alternate with the tile blocks. The two side elevations, as contrasted together, well illustrate the varied feeling which can be imparted to work in a simple, yet really refined, architectural manner. Far different from results often observed by the endeavour to erect showy structures of a Renaissance or other character from ready-made stock moulded bricks, etc., which are nevertheless only too often coarse in effect. A class of work usually wearing a strongly pronounced makeshift appearance, the various members looking clearly enough as though they had dropped out of some other building—or just been used up in an emergency, but were evidently not "designed" for the position in

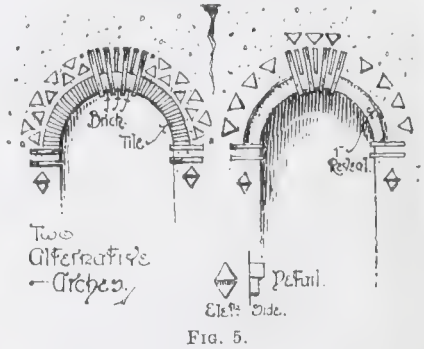
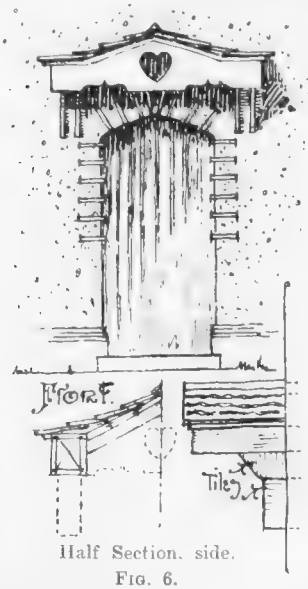


Fig. 5.

which they were found. Fig. 3 illustrates a larger porch of a different type, with small side-windows or openings. Although there is a fair amount of brick cutting to the spandrel ends at the sides of the arch, such a method of introducing a deep splay arch has a fine effect. The small square recessions illustrated in the tile-frieze, although slight, are quite sufficient to just break the monotony without possessing undue prominence. A point worthy of special consideration with brick or tile relief. These small squares are formed by spacing the narrow ends of the tiles and filling with cement. If preferred, the little cement pointing required to these can be coloured to match the tiles and slightly pressed in to form the shallow recession illustrated by the details on the side of Fig. 3. This method, with a single or double row of tiles, particularly is rather effective where some further

or slight variation might be required to break the monotony of a long band of tiling.

A very simple but effective method of tile relief in roughcast work, which can also be readily adapted to concrete work as well, is



Half Section. side.

Fig. 6.

illustrated by the succeeding figure—No. 4. A couple of designs for alternative arches which would go well with this class of work are illustrated by No. 5. The variation of plain brick and tile with the triangular ends of pointed coping-bricks, as shown, afford quite a decorative appearance. The small



Fig. 7.

diamond ornament under the impost blocks are also formed with the pointed coping-bricks, the upper one being slightly projected. The combination of tiles in hood-work is also capable of producing quite a large number of exceedingly original and good designs, when carefully studied. Merely two or three methods are illustrated by the

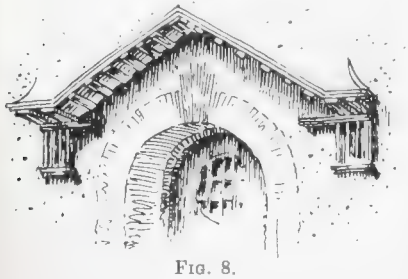


Fig. 8.

succeeding sketch designs. Fig. 6 shows the use of a couple of thick tile brackets in supporting a wooden hood of a sufficient projection to be serviceable as well as ornamental. Groups of two or three tiles, backed together, for forming the brackets, also afford a further variety in place of thick, single tiles. A somewhat shallower method of constructing tile-hoods, but, nevertheless, one which can be given a good projection, quite sufficient to form a very serviceable weathering to the door-head, is illustrated by Fig. 7. Two courses of projecting tiling are here shown, worked in a semicircular manner, with a series of single-tile dentils. The bracket piece to each end being formed with a small fillet composed of one or two tiles, with a projecting course of four or five more over. The same method can also be adopted in obtaining a triangular hood of the open pediment type, as illustrated by the rough sketch design, Fig. 8. The use again here of vertical tiling at the ends, with each alternate tile, or pairs of tiles, slightly recessed, forming fluting, gives the appearance of a triglyph with quite a satisfactory result. The method, too, of dressing out the roughcast so that it curves gradually and dies into the wall over, is one which always has a picturesque and good appearance, the feeling being imparted that the hood is partially suspended, as well as supported from under.

W. G. Kerby, Architect.

"BUILDING NEWS" DESIGNING CLUB.

A BLOCK OF ALMSHOUSES, WITH CHAPEL AND HALL.

This subject manifestly commended itself to the imagination, though at the same time, some special attention to its individual parts no doubt, the scheme naturally demanded in order to insure an economic solution. A group of almshouses, anyway, ought not to be a very difficult problem. Unfortunately, the ideal has not been quite realised by the competitors, so we cannot claim on their behalf that the result is by any manner of means really satisfactory, and no model plan was forthcoming. "You can no more have poetry all gems than a midnight all stars." Perhaps we expected too much; but while acknowledging the industry and serious work of several of the contributors, the sum-total of their efforts scarcely reaches the standard established by very many years' experience of our Designing Club. This is a matter of regret, specially when considering, as we may, the advance made of late in the direction of architectural training on all hands in most of the great towns as well as in London.

The primary attractive-looking proposal on this occasion is, perhaps, the design submitted by "If," who, however, is much too casual in his setting out, notwithstanding the surplus labour obviously devoted to his drawings by the filling-in of the brickwork, as he has done it, brick by brick. The spacing of his windows does not agree with those on the plan in all cases, and we remain in the dark as to the utility of the second floor over the middle house, its first floor not even being drawn out. Ample room for it might have been found by omitting the title-scroll. He has also not adhered to the instructions by failing to project the hall and chapel, as we specified, "about six feet in front of the end houses, at right angles with the main front." "If" has seemingly read this instruction to mean that the foremost ends of these "detached buildings" were to be set forward six feet; but then he omitted to observe the stipulation as to the porches of the hall and chapel being made to face the quad at the rear end of both these two buildings. Besides this oversight, "If" has taken a very free view of what is more generally understood as being associated with the "Georgian style, in brown bricks, with red-brick quoins." This is an easily-recognised type of old work, and we laid it down for the guidance of the members when we set this subject. In a competition of an educational kind, like this, such discrepancies, perhaps, need not exactly place "If" out of the running, but they certainly do preclude the author from taking the premier position. We have commenced our review in this negative way because, in our judgment, this design by "If," with all its failings, displays more fancy, and better avoids mere conventions of style, than any of its fellows, opening out, as "If" does, some chance of personal expression in the handling of these problems. Possibly this freedom of his leaves too much to chance; but, at the same time, we wish to recognise the possibility of a broad view, instead of labouring too critically by adopting a stricter judgment and over-esteeming minor issues by following a lifeless adherence to circumscribed details. There is a limit in all things, and perhaps "If" has trifled with the limitations of decorum, and thus risked his chances by doing so. We urge him to be more judicious in future.

"Enfant" is not brilliant, and much remains for him to learn in the way of design; but he has followed the lay-out which we set down as the one to be adopted. This is clear from his ground-floor and block plan. We suppose the elevations may be considered approximately "Georgian," or sufficiently so to pass muster as a free rendering; but his "Flamboyant" traceries in the chapel windows look incongruous enough, and in themselves are none too shapely. The double-hipped roofing over the central dwelling suggests the need of rainwater-pipes: a pair would be required, as one might look odd. "Enfant" shows nothing on this point as to his intentions. "Enfant's" plan is probably the best part of his proposal, and we consider him, on the whole, better justified to take the first place. "If" ranks second, and "Amo" third. In considering the premier plan as a plan, we could easily pick it to pieces; but, on the other hand, our initial purpose is to recognise its merits. The chapel and the hall are very superior to "Amo's" buildings; but we prefer "If's" ideas and shapes for these two structures. The w.c. and lavatory in the chapel, and also in the hall, as shown by "Enfant," would be likely to prove a troublesome nuisance. The chaplain might not require such a convenience in the chapel, and the old folks' hall most assuredly would also be sweeter without one. The isolation of the larder from the w.c. in these houses is a distinct gain, and the wind-lobby in all cases is placed external to the keeping-rooms. We do not like the staircase immediately facing the front door in the middle house, while the outside stairways to the first-floor end dwellings make a doubtful arrangement for old people's use when slippery in frosty, and in any rough weather are too exposed. "Enfant" has not shown the upper floor of the master and matron's residence, though we can make out, by the aid of section AA, pretty much what he intends. He has not, at any rate, wasted space on scrolls, but he might have, perhaps, omitted one section to make room for this plan.

"If" has already had a good amount of space allotted him, but we have one or two more things to add about his plan. Six houses have lifting baths, though the two end upper ones are without them, and we are not told how the master and matron fare in this respect. Tip-up baths, anyhow, are not suitable for aged men and women to manage, and, in practice, baths for old isolated folks are a source of danger. The w.c., larder, and scullery place in the end houses are not well arranged, and the living-room of the middle house is too big, being made so in disproportionate regard to the very occasional use of the committee, and at the same time leaving nowhere for the "master and missus" to keep in meanwhile other than in the scullery or bedrooms. The wind-lobby here is very awkward. The segment pediments over the intermediate cottage doorways are ugly and out of place. w.c., larder, and scullery place in the end The circular porch in the midst is made an unduly important feature, and no way is afforded to reach the balcony on the top. To bring the big middle gable line right down over a void, as happens above the flanking windows, is not commendable, and such a structural device should be avoided. The chimney caps are overweighted, while the central one has no capping like the others.

For brown-brick and red-brick dressings of the ordinary sort of commonplace Georgian type, "Amo's" design is more befitting, but he has failed to appreciate good proportions, and the doorways also lack interest, even if

utility claims them for its own. The mid-position of the entrance in the keeping-rooms spoils the comfort of the occupiers who have to live there. The pantry cupboard without air and light would not be a good place to keep food in. The inside staircase up to the end houses located on first floor is a gain, and we rather like the unsophisticated look of the three windows above stairs in all the three projecting pavilions. "Amo" has not shown how the master and matron are provided for, and how these windows are allocated in their house. The staircase out of their keeping-room makes them less well off than the ordinary single dwellers, and they have no cupboard for their food. The fireplace in their living-room happens to be more capacious than that in the assembly-hall, where the ingle nook is too small for comfort. There seems to be no reason why it should have been pinched up in this way. The chapel also is enormously too big, and the sanctuary arrangements are very badly contrived. The window over the altar is horrid. "Amo's" inset perspective, with its cobweb sky, rather puts one off his scheme, to which he has thus done sparse justice. Evidently he ought to do so much better.

"Because," placed fourth, has in many ways a very good elevation, and sends quite the best perspective view received, besides which, the individual parts of the planning seem above the average; but he has misconstrued the lay-out to the extent of placing the chapel and hall parallel to the rear elevation of the almshouses, which mistake does away with the suggested semi-quadrangular arrangement of the forecourt. He scatters his plans promiscuously all over his sheet of paper with a most awkward result. The treatment adopted well becomes brown facings and red quoins. The wind-lobbies to the single-floor houses project and form an ingle nook for the alms-people to crone in over the fire, but there are no external doors provided to these lobbies, a fault observed already in other plans. The lobby between the bedroom, coal-place wall, scullery, and larder is dependent upon a borrowed light, and in the master's house the w.c. door faces immediately that of the larder. The chapel is not a success, though the hall seems befitting its purpose, subject to the objection of location already spoken of. The staircases to the end first-floor dwellings have a bull's-eye window, put high up under the eaves, which provision is none too ample for lighting the entry on the ground floor. The bedrooms of these two flats are not well arranged for locating the bed conveniently.

The desolate-looking perspective showing "Pinto's" scheme detracts from the appropriate sense of homeliness which the elevations no doubt possess. Why the plan should have been drawn in this fashion the wrong way up on the sheet we cannot imagine. The hall ingle is set out at one end matching the chapel sanctuary, as shown on the block plan. The organ recess is not put on the flank wall, as specified, but is contrived at the entrance end of the chapel with a wasteful double lobby. The three pavilions of the two fronts of the main building have twin hipped roofs divided by a central gutter, and no rainwater pipes, or any good place for them in either block, unless these tubes were duplicated. Why the chancel should be at the west end, and the porches at the front end of both hall and chapel, is not clear, for it is contrary to instructions on this point.

"Youngster" complies with the designated lay-out and recognises the style of design asked for, working out his proposal with care, but omitting to send a perspective sketch as he was asked to do. He enters his houses by an open porch with an arched opening to every pair, and the staircase to the upper tenancies is covered in. The middle house has a portico. Somehow, the group reminds one of a stable block, with houses for the grooms at the ends and centre. The planning of the dwellings is good in detail, and the general result is more tasteful than some others.

"Keystone" draws capitally for clear reproduction, but his draughtsmanship has, perhaps, an overdone and restless effect, such as the executed work would probably present with the fancifully-shaped Dutch gable in the middle of the façade. We think this plan, however, is quite one of the best. Winders for the aged folks upstairs, and set-offs on dark landings, are not only blameworthy, but actually dangerous. The choir-seating in the chapel is pretentious, and the organ-chamber is not well placed immediately flanking the sanctuary. The window over the altar is merely a counterpart of the stage window in the hall, and so looks incongruous. The quoins are drawn as if stone would be used, and not red brick.

"Roy" sends an incompleted perspective. His elevations are neat enough, and the plan, in some points, is not dissimilar to "Youngster's" scheme—such, for example, as the entrance portals set between the tenancies. Neither hall nor chapel is high enough, and the hall ingle nook would roast the folks seated on the settles there. The elevations of the houses are neatly finished, and evince patience, and some quiet taste. The end buildings look like railway-station designers' work. Space is sacrificed to corridors; such things are out of place in model almshouses, which should be compact, and more simply arranged.

"Tweenie" is just the sort of draughtsman who cuts a dash without very much recognition of propriety, though his façade, in a general sense, balances well, and the accommodations of the dwellings is nicely thought out. He has put his accessory buildings immediately in front of his two end houses without rhyme or reason. The chapel and hall ends have twin treatments, in the main recalling too much a school building. The way in which the windows are partly blacked in is a premeditated conceit carried out in an erroneous manner of delineation, producing a very false impression. The view is devoted to the hall, and it is well done, so far as it goes.

"Corinth" is poor, not to say commonplace. The bedrooms have a recess for the bedsteads. This is got by carving the wind-lobby out of these apartments. We dislike his chapel, and the end tenements are too much like villas. The grouping suitable for a series of almshouses is not realised at all well.

"Norvic" sends his design on a wrongly-shaped sheet of paper, and he does not allocate any particular spot for either his chapel or hall. It is to be inferred, however, we presume, that these features extend right and left of the main block because the entrance approaches to the end houses are attached to the flanks of both chapel and hall under a covered way. We do not like "Norvic's" plan, but his façades are more in accord with almshouses than any of the others. He has not shown how the sides of the chapel and hall are treated, but the large circular windows in their end gables allow a fine expanse of brickwork, unmolested with trumpery detail, such as some benighted writers on brickwork seem to consider the chief consideration of taste in the use of that material, a consummate mistake peculiar to the eclectic inanities of the latter half of the 19th century. "Norvic" sends no block plan nor perspective.

There is an absence of regal grandeur in "Old King Cole's" performance which, so far, is right, and his plans resemble others fairly closely in several particulars, such as the double approaches out of one open porch. The elevations strike one as indifferent, if neat. In execution, possibly, the effect would be more interesting than the drawing suggests.

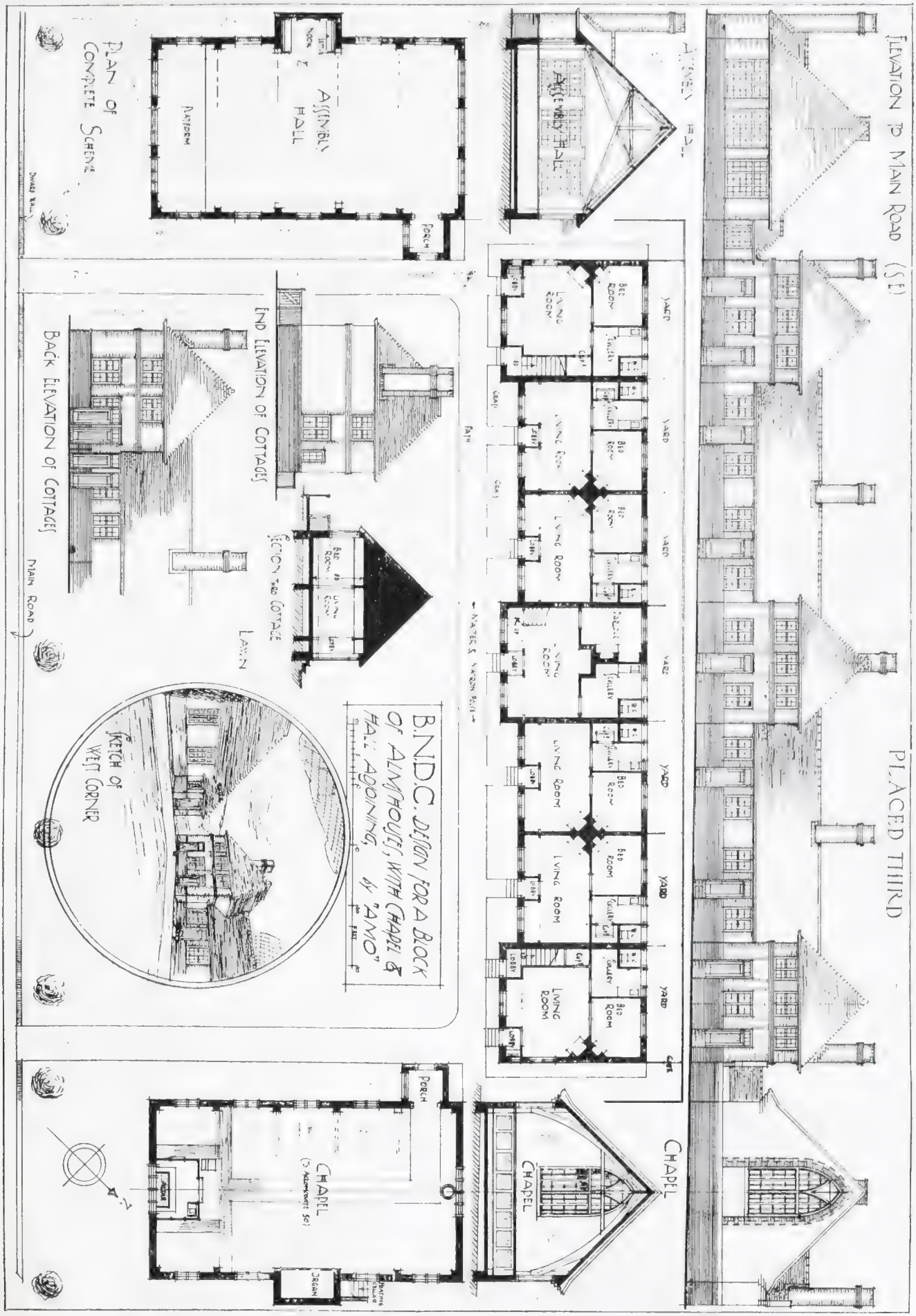
"Coral" puts his chapel and hall parallel to the front of the main block instead of their being set at right angles to it. His sheet is in outline, giving a utilitarian appearance. This ordinary character is increased by a knowledge that next the front entrances a w.c. can be seen in the porch, and, indeed, this might easily be mistaken for the principal doorway to another house.

"Bevac" submits a quiet and comely-looking scheme, with bands of light brick or stone, which help to pull the façades together, with the villas set out at either ends. "Bevac" is by no means inspiring, though he is very neat, and eminently painstaking.

"Scot" has a pediment emblazoned by big numerals, recording the year of erection, to avoid confusion. His elevations have a peaceful air about them, and are compact, looking homely enough for the purpose. The lancet lights to the chapel are quite impossible features for good effect, and the straight-pointed archivolt of the big window over the altar lowers this part of the scheme beyond recall. The elevations of the almshouses, nevertheless, are considerably more appropriate than some of the designs placed higher up in order of merit. A rambling sketch shows a view of the whole façade, and a plan for proposed extension. We have no choice but to accord "Scot" this position, taking one thing with another.

The following is a copy of the instructions to competitors:

"The site for this project is level in contour from north to south, but the land falls in an even gradient from west to east, one in twelve. The main block is to include seven cottages. The central house and the two end ones are to have two floors each, the four intermediate ones in the row are one-story buildings, the whole forming one continuous, simple elevation, long building, facing south-east, parallel to the highway. The end houses and the middle dwelling are, however, to project two or there feet in front, so as to diversify the main line of the frontage, which is set back 80ft. from the road. Both the terminal houses to have a staircase to give a separate approach to the dwellings on the first floor. There will thus be accommodation for four old men on one side and four old women on the other, the central house being quarters for a man and his wife as master and matron. On the ground floor of their cottage a small room adapted for the occasional use by the charity committee, but otherwise to be used by the occupiers, who will have two bedrooms and a bathroom on the first floor. Each other dwelling to have a living- or keeping-room of the area of 12ft. square, and a sleeping-room, larder, scullery place, and w.c. More similar houses will eventually be built towards the west, as separate blocks, but these do not require to be shown now. The rear elevation of the present block, with its needful projections, to be considered in relation to these extensions. There is to be provided, as part of the present scheme, a pair of detached buildings (separated approximately from each other by the length of the out-to-out dimensions of the façade of the central block), one to be used as an assembly-hall, towards the south, and the other as a chapel, towards the north, and each standing about 6ft. in front of the end houses, at right-angles with the main front. The assembly-hall to seat fifty persons, clear of a small platform, which will be removable when not required for use of entertainments. There is to be a large open fireplace on the south side, fitted with settles for three persons on either hand, within the recess. The chapel to also seat fifty adults, as the hamlet people will use the building till the other houses are erected. There must be an organ recess on the north side of the chapel, and at its eastern end a small screened-off chancel, with priest's prayer-desk, altar pace, and altar. No vestry is needed. The chapel and hall entrances to be set back towards the rear end in each case and to face the quad, both having a porch, to serve as a wind-lobby. These projections may come within the out-to-out dimensions before mentioned. No pulpit in chapel, as the preacher will speak from the chancel steps. Roofs of both buildings to be open-timbered, simply treated. Chapel heated by radiators, and boiler place and fuel store below the organ recess. Features to be made of the chimneys. These two blocks will be similar in size, but otherwise they will differ in treatment of detail. The style to be Georgian, in brown bricks, with red-brick quoins, window-aprons, and strings. Painted white wood cornice to eaves of houses, double-hung sashes with bars. Roofs covered with tiles. Chapel and hall to harmonise, but to have brick gables and stone mullioned windows. Level of the ground floor to be 12in. above ground line, and the height of rooms in cottages to be 8ft. 6in. from floor to ceiling.



Outbuildings or projections less. Comfort for the old bodies to be considered, and windlobbies needed. Verandah in front objected to. An elevation of the whole front required, but part only of back need be shown, and one end and two cross-sections of house block. Plan of whole arrangement to be given. Two elevations of chapel and hall. Three if space will allow, and one section of each. Scale, 8ft. to the inch. Small block plan, if room to include one. View of part of houses' façade, and including either chapel or hall. All drawings on one sheet of paper, 24in. by 18in. Drawings to be sent in (with coupons attached to the back) on or before November 1 next." The second subject conditions for a Town House appeared on page xiv. BUILDING NEWS, October 31, 1913.

THE SOCIETY OF ARCHITECTS.

Presidential Address by Mr. Percy B. Tubbs, F.R.I.B.A.*

As a profession we must stand united; there must be unanimity of opinion and unity of action in all matters pertaining to the general welfare of the profession. Granted that, for purposes of better administration, subdivision into numerous associations and societies is desirable, yet in all matters of general importance to the profession we should work as one harmonious whole. Until we get a united profession, it is almost impossible to deal effectually with such questions as the education and registration of architects, the proper government of architectural competitions, and the fixing of a scale of charges, which questions affect all architects, whether members of any institution or not.

REGISTRATION.

I thing that a very good starting-point for this policy is the question of Registration. The Society during the last few months have inaugurated a press campaign in the interests of the compulsory registration of architects, and, from the wide publicity given to the matter, we have been able to secure the keen interest of influential Members of both Houses of Parliament, and of others deeply interested in the subject; but we are sadly handicapped through the lack of unity in the profession. The benefits that would accrue from statutory education and Registration must be patent to all, as in protecting the interests and raising the status of the trained and fully-qualified architects, not only would the public have a guarantee of professional ability, but it would do more than anything else to get rid of those who, to the detriment of the public, do not hesitate to poach in a domain which, by education and experience, we ought to have the right to regard as strictly our own.

DEVELOPMENT OF THE SOCIETY.

In view of the rapid growth of the Society, the Council thought it desirable last year to revise the Articles of Association, not only providing for present needs, but more particularly for its future development, and in doing so to form a new graduate class intermediate between the junior section and full membership. Entrance to the new class to be by examination only. It was felt desirable, in dealing with the junior class of membership, to set before them the necessity for qualifying for one of the higher classes as quickly as they reasonably could, and, failing that, to advise them to turn their attention to some other calling, as they were evidently not desirous of taking the profession up in earnest. The result of this policy is just beginning to bear fruit, for the Council have found it necessary to intimate to a considerable number of students that their connection with the Society must lapse unless they are prepared to take things more seriously. Personally, I am of opinion that, although this will entail some financial loss and apparent decrease in the total membership, yet it must tend very greatly to strengthen the Society and to raise the standard of admission. A situation naturally has arisen for which it is difficult at the moment to suggest a remedy, inasmuch as, in the absence of statutory registration, such persons cannot be prevented from starting in practice as architects, although they may be only partly trained, and not possess the full qualifications necessary for the position. On the other hand, the action which the Council has taken may result in arousing them to a sense of their responsibilities and induce them to further qualify for readmission into this or some other architectural body. At any rate, it is obvious that the action of the Council in this matter is entirely disinterested, and is in the best interests of the profession. The additional disciplinary powers reposed in the Society by the new articles will enable the Council to effectually enforce the main principles laid down in the code of ethics adopted by the Society. All this must tend to the betterment of the Society as a professional body, and to the advantage of its members.

* Delivered Nov. 13

PROFESSIONAL DEFENCE.

I am glad to see that the example set by this Society in promoting a professional defence fund and the machinery for its administration is being followed by kindred institutions, not only at home, but abroad. The Society up to the present has not been called upon to take up any case; but the knowledge that such a fund exists has been of great service to members, who have been able to call attention to the fact that the fund is actually in being, and that a very influential committee has been formed, ready to advise on any matter affecting the interests of architects. The very existence of this fund is evidence, I think, that this Society is desirous of affording its members every possible assistance in protecting their best interests, and consequently the profession generally. I sincerely hope, and feel, that your Council will see their way to add to this fund from time to time, so that, in the event of our having to fight a case, we can see it right through without fear of being crippled through any lack of funds.

ARCHITECTURAL EDUCATION.

The part played by this Society in placing upon a working basis the proposals for the introduction of the Beaux Arts method of educating architects into this country resulted, as you all know, in the formation of an influential committee to consider the whole matter. That committee, which is now an entirely independent one, is working on a scheme which strikes at the root of the whole matter, and your Society will always be entitled to the credit of supporting a pioneer movement of such great potentialities. Apart from what the Atelier has accomplished for the advantage of those who have placed themselves under its guidance, the Society has achieved its aim in enabling the committee to call attention to a fault in the present system of architectural training, and to point to a remedy with such effect as apparently to cause architectural educational bodies seriously to consider the question. The result of all this is that we now see strong evidence of the main lines of the committee's proposals being adopted so far as circumstances permit at the moment. It is most earnestly to be hoped that all educational authorities will see the advantage of adopting Beaux Arts methods in the near future. The Atelier in Wells-mews is being most enthusiastically supported by the students there, and one has only to attend the various exhibitions of the students' work that are held from time to time to see the marvellous strides that have been made in these few months in architectural composition and design.

MINISTRY OF FINE ARTS.

Last year I expressed the opinion that the time was fast approaching when architecture will come into her own again, and resume that place in the public estimation which is her due, and which she enjoys in more favoured countries; and we see evidence of this in a movement which has recently been started. A committee will, I believe, shortly be formed to consider fully the question of a Minister of Fine Arts. Personally, I wish the movement every success, and I hope this Society will offer the movement any support in its power.

OFFICIAL ARCHITECTURE.

In my address last time I had a good deal to say about official architecture, and I pointed out the desirability of every public building being designed by the one man in the country who was best able to solve the particular problem involved; and this one man can only be discovered by a properly organised competition. If we are to get the best possible design and solution of a particular problem, competitions should be left as free and unfettered as possible, and the programme should set forth the requirements and make what suggestions are thought fit; but it should contain the fewest possible number of binding conditions. It follows that if a competitor did not adopt the suggestions, he might possibly prepare an infinitely better scheme by working entirely on his own ideas; but this would mean that he would have no chance of success at all if the conditions were binding, instead of, as I propose, making them merely suggestions.

ARCHITECTURAL COMPETITIONS.

If the promoters knew exactly what they wanted, there would be no necessity for a competition; but, as a rule, they have but a vague idea what their requirements are, and if an architect, by departing from their suggestions, can show them a better scheme, it surely is in the interests of the promoters to see such a scheme. Therefore, the competitor should have as free a hand as possible. There is a very great deal of useful work that could be done by the various architectural societies throughout the country in connection with competitions, in the direction of the proper organisation and regulation of architectural competitions. This is another very strong reason for unity. I have yet to learn that it is a good thing for the profession that architects competing should have their designs published in book form and sold at the rate of four a penny. It seems to me that this has only to be carried far enough for people to cease altogether to require the services of an architect when they contemplate the erection of a small country residence, house, cottage, or other building that can be easily adapted to suit any site.

AN IDEAL LONDON ON PAPER.

Town-planning schemes are being prepared in a great many districts round London, and if steps are to be taken to provide a boulevard on the outskirts, there is no time to be lost. Another point which I should like to emphasise is the question of improvements to be carried out in our big cities. It seems to me that if a committee of architects could be formed to consider the maps of the various towns in detail, and to lay down on the maps the street-improvements which should ultimately be carried out when the opportunities arise—with due regard, of course, to the preservation of ancient monuments and fine old buildings—our towns and cities would ultimately become as beautiful as possible, and we should be all the time working to that end. What we, as architects, should try to do is to beautify our cities as opportunities arise. We could make a start by giving all the support possible to the smoke-abatement movement. This would tend to purify our atmosphere and give us more frequent opportunities of seeing our buildings under blue skies and brilliant sunshine, and enhance the charm of architectural beauty.

CRAFTSMANSHIP.

Another very important matter, which should receive careful consideration, is that of the encouragement of craftsmanship. As an example, one way of bringing this about would be to increase the responsibilities of the men entrusted with the work. I should like to see the man actually in charge of the work take his own particulars from the job, carry it out himself, and fix it at completion. A great deal of the interest which we see in Mediæval buildings is due to craftsmanship. In those days the craftsman had a fairly free hand, and worked out his own scheme for the particular work assigned to him, and it was left practically, with all confidence, in his hands by the master mason or the architect, for the man entrusted with the work was known to be a competent craftsman, and his individuality was recognised and appreciated; but now, if a fine piece of work is carried out, the firm which is employed takes all credit for it, and the name of the actual individual craftsman rarely transpires.

TEMPORARY BUILDINGS IN RELATION TO BY-LAWS.*

By T. C. Barralet, M.R.San.I. (Member).

This short paper deals with those structures the external walls of which are not constructed (to use the familiar language of the Model By-laws) of "brick, stone, or other

* A paper read at the Annual General Meeting of the Institution of Municipal Engineers (London), Nov. 7, 1913.

hard and incombustible material." The framers of the Model Series, issued in 1877, which still forms the basis of most of the regulations throughout the country, recognised the fact that certain exemptions were necessary, and expressly exempted such erections as plant-house, orchid-house, summer-house, poultry-house, or aviary, under somewhat hazy conditions. Now, most of us are not troubled about orchid houses and aviaries, but the course of years has brought into existence a number of other excrescences which the well-meaning gentlemen of 1877 did not foresee. The bicycle brought the cycle-shed, amateur photography dark-rooms, the motor-car private garages, while the open-air craze has brought outdoor sleeping-sheds. Many local authorities have tried to keep pace with these modern developments of extending the scope of the exemptions; but I do not know of one sufficiently up to date to contemplate aircraft sheds. True, the old model series does make provision for buildings not being dwelling-houses which are detached, and at specified distances from other buildings or premises, and not exceeding a certain cubic capacity. Such are allowed, if covered externally with galvanised or sheet iron. This admits of workshops, temporary churches, chapels, and mission-rooms, and, as we are aware, has been largely taken advantage of. The stipulation as to iron covering was doubtless inspired by the fact that no other incombustible material was then in the market, and has led to the architectural monstrosities in galvanised iron which obtrude themselves even amidst the most rural surroundings.

Since the introduction of "Uralite" and similar incombustible sheets, which lend themselves to more architectural treatment, a number of local authorities have amended the regulations to admit of their use; but iron is generally rigidly insisted on. I have no brief for any of the alternative materials mentioned, but strongly hold the opinion that galvanised or sheet iron is a most unsuitable walling or roofing for any building, both upon hygienic, architectural, and constructional grounds, and no by-laws should exist which enforce its use. The complexity of modern life has brought into existence a class of buildings which, while not requiring the stability and durability of dwelling-houses, are sufficiently permanent to require something better than the usual timber studding, matchboarded within and lined with galvanised iron outside. Such erections as sports pavilions, clubrooms, and drill-halls are illustrative. If any part of such building is intended or adapted to be used either wholly or partly for human habitation, or as a place of habitual employment, in most districts it is not an exempted building, and the external walls have to be constructed in accordance with the by-laws. It is well known that steel framing filled in with thin concrete or vitrified slabs is a far cheaper and more expeditious method of building such structures; yet the by-laws in force throughout the greater part of the country take no cognisance of this method of construction, though for the purposes named it is eminently suitable and satisfactory. A case in point has recently occurred in my own district, where it was desired to erect a gold pavilion and a clubroom half a mile away from any other building. But for one fact it would have been an exempted building, and could have been built in the usual galvanised-iron style. That fact was that there were two caretakers' rooms, which it was held brought it within the by-laws. The architect was naturally averse to disfiguring the Surrey Hills by a hideous iron structure, and proposed steel framing filled in with "Frazzi" slabs. The by-laws did not admit of this, and there was a deadlock until the Gordian knot was cut by the building being licensed as temporary, with a liability on the part of the owner to remove it at six months' notice. As it was to cost £800, his hesitancy to sign such an agreement can be appreciated. Fortunately the Local Government Board have now awakened to the fact that brick, stone, and monolithic concrete are not the last words in wall-construction, and have adapted a series of Model By-laws to meet such cases as that referred to.

The Public Health Acts Amendment Act of 1907, section 27, wisely recognises the inevitableness of temporary buildings, and gives to local authorities a wide discretion with respect to them. The Act, however, is an adoptive one, so that there are large areas in which it is not in force, and it would have been advantageous if it had contained a definition of the term "temporary," as it is somewhat a misnomer when applied to buildings that are intended to stand for more than a generation. Perhaps, however, the temporary buildings which give the surveyor the most trouble are those which are obviously temporary—little wooden shanties on vacant plots of ground, small workshops in the rear of cottages, antiquated tramway cars and omnibuses dumped in unsuspected places. Whether these come under the regulations or not is largely governed by what they are adapted or intended to be used for. If a cottager puts a superannuated omnibus in his back garden and calls it a summer-house, it is probably exempt, but if he uses it as a workshop it is contrary to the by-laws. From the fact that such things are put in back gardens, some time elapses before they come to the surveyor's notice, and if six months has elapsed he cannot take action under the by-laws. It used generally to be thought that a building on wheels was under any circumstances exempt from building by-laws, and in my career many impositions of this nature have been attempted. If it were so, it would defeat the objects of all reasonable building regulations, and it now appears to be accepted that wheels have no effect in determining whether a building comes within the by-laws or not. The main objections to the type of flimsy temporary buildings under consideration are: (1) Reduction of air-space in the rear of houses; (2) danger from fire; (3) unsightliness and untidiness. The first and second can be met by making retrospective the by-laws requiring a clear space of 15ft. in the rear of all domestic buildings, as many authorities have done, and prohibiting all leans-to and sheds abutting on houses. In many country districts the excrescences which in course of time grow up round a cottage often cover more space than the original structure. First, perhaps, a fuel-shed is attached, followed by a greenhouse; then comes a nondescript structure, alleged to be a potting-shed, flanked by a chicken-run. An inspection a year or two after reveals a donkey kept in the fuel-shed, the greenhouse transformed into a scullery, the potting-shed into a workshop, and the chicken-run serving as a lumber-room. For the purposes for which they were originally constructed such buildings as those described would probably be exempted from most building regulations, and the surveyor has little or no control over the uses to which they are subsequently put, until they become structurally dangerous. Perhaps the best remedy for these unsightly temporary structures is the frank recognition on the part of builders and designers of small houses—especially those in country districts—that the average householder requires, in addition to rooms for living and sleeping, covered accommodation for such of his possessions as cannot reasonably be kept in a house. It is exceedingly rare to see a small house built with any accommodation for such everyday articles of use as perambulators, bicycles, garden tools, etc.; even a coal- or wood-shed is often conspicuous by its absence. It should be part of the design of every cottage that adequate provision of this kind should be made. During last year I made an inspection of a number of cottages at Letchworth, and many of the tenants bitterly complained that the regulations of the estate did not permit of their erecting the usual ramshackle outbuildings to which they were accustomed, and that the builders did not provide any suitable substitute for them. In some of the newer type of cottages the need had been recognised, though to a very slight extent. It would add very little to the cost of a cottage to provide at least 100 square feet of covered space in a safe vicinity, and thus remove the temptation tenants are always under to disfigure their premises with hideous and insanitary surroundings. It is generally the more satisfactory class of tenants with harmless hobbies who indulge in this sort of thing, and these are frequently in a state of veiled hostility to building regulations, under the impression that they are made for their special harassment.

On the whole, therefore, it would seem desirable to frame by-laws in such a manner as to admit, and even encourage, the building to dwellings of appurtenances which conduce to the comfort and convenience of the occupier, provided it can be done without detriment to health or undue damage from fire. Previous to the Act of 1907, many local authorities, to meet apparent cases of hardship, had accepted the plan of yearly licenses for buildings which did not comply with the requirements of the by-laws as to structure and thickness of external walls, with the condition attached that the building should be removed by the owner after a specified notice from the local authority. This is open to the objection that a local authority have no legal dispensing power in the matter of building regulations, and, further, that there is a grave doubt as to whether the conditions made under any such agreement could be enforced. It would be of interest to know if any member of the institution could instance such powers being enforced in the case where a building, admittedly contrary to by-laws, has been allowed.

THE SURVEYORS' INSTITUTION.*

THE OPENING ADDRESS.

By W. Edward Woolley (President).

After a retrospective review of recent land legislation, and some anticipations with regard to that with which we are threatened, the President addressed himself as follows to the

HOUSING QUESTION.

The housing question is not less difficult, and is greatly complicated by the large increase in the cost of materials and labour which has taken place during the past generation. Apart altogether from the value of the land, most surveyors will, I think, bear me out in saying that a pair of five-roomed cottages, with fencing, water-supply, and conveniences, cannot be built now for less than £400, and would have to be let at from 3s. 6d. to 4s. a week in order to secure even 4 per cent. on the capital expended. Clearly then, except so far as they are a necessary part of the equipment of the farm or estate, there is little inducement to choose the erection of cottages in rural districts as a direct form of investment. But the subject is too wide a one for me to attempt to follow through its many ramifications in the time at my disposal, and I, therefore, venture to submit the following broad principles for your consideration:—

1. Housing in rural districts should primarily be a matter for the landowner, on whom might be imposed the duty of providing, at his own cost, a sufficiency of houses to accommodate the labourers and others regularly employed on his estate. A similar responsibility should be placed in such districts upon railway companies, county councils, and other similar employers of labour.

2. If there is a demand for houses beyond the above, the landowner, if willing to provide them, should have facilities afforded him for obtaining the use of cheap money. In such cases proper conditions as to the maximum rents to be charged and the extent of the gardens should be enforced.

3. As the provision of garden ground does something to overcome the difficulty of obtaining an adequate return on the cost of building, labourers' cottages, provided by such means, should have from an eighth to a quarter of an acre of land either adjoining or near to.

4. Although, even with the advantage of cheap money, the standard of rents in rural districts would seldom permit the erection of cottages to be remunerative, I believe that landowners would usually be found willing to meet any demand which might exist, and,

* Read at the Ordinary General Meeting of the Surveyors' Institution, Nov. 10, 1913.

indeed, they are in the better position to do so, as they have the less need to consider the value or cost of the sites. Should, however, they object to do more than provide the accommodation necessary for their own and their tenants' employees, the duty of providing the extra accommodation needed should be thrown upon the local authority.

5. In such cases some inexpensive method should be devised for enabling the local authority to obtain the sites required, if necessary by compulsion. And I would go so far as to say that, a site for a house being a first necessity for man, it is the duty of an owner, where all the land available belongs to one person, to provide sites at the lowest possible cost. If, therefore, apart from such demand, the value of the land would be merely agricultural value, the price paid should be little in excess of that value, plus damage, if any, by severance, etc. But the influence of our profession could do much to obviate the need for any compulsion, and I hope it may be uniformly opposed to the shortsighted policy of placing difficulties in the way of providing sites for houses wherever required. Sites for such a national purpose should be readily available in every village in Great Britain on a demand arising.

6. A lessening of the cost of erection being of vital importance, something should be done to standardise doors, window-frames, staircases, and other timbers, and fittings. This would enable them to be turned out at a cheap rate without destroying individuality of elevation and design.

7. An appeal should be permitted to the Local Government Board when the erection of houses is restricted by unsuitable by-laws.

8. A consolidation of the existing Housing Acts should be made a part of any new legislation.

I am aware that a good deal has, and is being done, under the 1908 Act in the way of finding land for small occupiers as tenants under county councils, and I am also aware that the inevitable failures which must from time to time occur give rise to occasional adverse criticism. But this, it seems to me, does not affect the main principle—viz., that it is to the national advantage that the prospects of advancement held out by a country life should suffice to retain the best men on the land. Whether this should be done by means of ownership or tenancy has, unfortunately, become a party question, the advocates of the one and the other definitely occupying different sides of the House. But I would suggest that there is room for both, and that those who desire to become owners should be given the opportunity of doing so equally with those who wish to become tenants. I do not mean to say that ownership presents no difficulties. There are many, such as the possibility of charges being created in favour of children, etc., and of a number of such holdings being again absorbed under one ownership. But these are matters for the statesman, and, I have no doubt, could be overcome. In saying this I do not wish to seem to advocate one system at the expense of the other. Both have their advantages and disadvantages; one will be found suited to the needs of some cases, while the other may better fit the requirements of others. But I certainly feel that purchase by reducible mortgage offers the best way out of the difficulties confronting farmers on the break-up of estates.

TRANSPORT.

The last proposal I have to deal with, that transport facilities should be improved, is less controversial; though even here I notice that Mr. Lloyd George has been condemned by an eminent representative of the railway companies for saying that preferential treatment is undoubtedly afforded to foreign produce, the Report of the Departmental Committee of 1906 on Railway Rates being quoted as absolving the companies from such a charge. But most agriculturists, I think, feel that that Report does not altogether meet the case, for while the railway officials see that, service for service, no preferential treatment is given to any particular traffic, this affords no satisfaction to the English farmer, who sees produce trains tearing at express speed by his holding, bearing competing foodstuffs from all parts of the globe at charges a fraction of those he is himself called upon to pay. It may be that the conditions are entirely different; but the fact that they are different, and apparently cannot be brought into line, has the effect of giving the foreigner an advantage, which, in my opinion, calls for some counterbalancing preferential treatment for home produce in both rates and facilities. Mr. Haygarth Brown's Minority Report deserves far more careful attention than it has hitherto received. But the railways cannot be expected to put themselves out in order to afford greater facilities and cheaper rates unless the industry concerned so organises itself as to be in a position to take the greatest advantage of anything which is done for it. The work of agricultural organisation is being actively undertaken by the Board of Agriculture in conjunction with the Agricultural Organisation Society, and I have no doubt that this important matter, which will increase in importance as agricultural methods become more intensive, is not being overlooked.

OUR WATERWAYS.

Before I leave this question I should like to express my satisfaction that the development of our waterways traffic is again attracting attention. The subject was on the agenda of the British Association at their recent meeting, and an interesting discussion took place. There are existing 4,670 miles of canals and navigations in the United Kingdom and Ireland, and there is reason to believe that the railways would suffer no loss were a considerable volume of low-class traffic diverted to the canals, and the capital of the railways employed in the development of the higher-class and better-paid traffic. The regrettable fact remains that, owing to apathy, lack of unification, and other causes, our originally well-conceived scheme of navigable canals and rivers does not take that part in our national organisation which those who recognise its possibilities could wish. Time will not permit me to deal in detail with these influences; but all having the prosperity of our rural district at heart, and knowing how dependent is that prosperity on ready and cheap access with market centres, must see the advantage of a method of transit which, by its cheapness and independence of stations and sidings, can stand comparison with more favoured methods of transit in the case of all bulky and non-perishable goods. I do not wish to labour this point, but should like respectfully to submit that a joint conference of the Board of Agriculture, the Board of Trade, and the Development Commissioners might find it worthy of their consideration. And when they have completed the reorganisation of transport facilities, which has been promised by Mr. Lloyd George, I sincerely hope that our waterways, equally with our roads and railways, may be found to form part of one complete, co-ordinated scheme.

I must now turn for a few moments to more intimate matters. My uncle, in his address in 1883, referred to the additional responsibilities imposed by the Royal Charter, which had then but newly been granted to the Institution. I venture to say that these responsibilities are not less exacting now, for it is the view of the Council that the Charter imposes upon the Institution a wider duty than that merely of promoting the interests of its members or their clients, important though that be. They feel that the possession of the Charter requires the Institution in its corporate capacity to place the national interest first in the many problems which come up for consideration, and upon which its advice may be sought. As representing the Institution, therefore, they have endeavoured to take up a strictly judicial position, and to use their technical and professional knowledge in dealing with each question from the broadest standpoint. Possibly members may not in all cases have understood this attitude; but there will, I think, be substantial agreement that a willingness to take up the cause of one interest or another, which would be altogether justifiable in the individual, or an association of individuals, would be quite improper in the case of a chartered body, unless it coincided with the national interest.

THE ARCHITECTURAL ASSOCIATION.

The second meeting for the sixty-sixth session of the Architectural Association was held on Monday evening at 18, Tufton-street, S.W., the President, Mr. W. Curtis Green, F.R.I.B.A., in the chair. Three nominations for membership having been read, the following forty architects were elected as members:—Messrs. H. D. Ainsworth, A. N. Battle, C. J. Brandon, A. G. Brian, H. C. B. Brundle, R. E. Bush, O. Campbell Jones, S. Clark, R. A. Cooksey, P. Dangerfield, H. E. J. Davidge, A. Eade, C. J. Hall, A. B. Hamilton, A. St. B. Harrison, A. K. Hewitt, P. M. Hill, A. Hodges, P. S. Hudson, S. F. Irwin, N. K. Jackson, P. V. E. Mauger, K. S. Meager, Hon. A. P. Methuen, H. E. Mills, E. L. Moore, R. T. Moore, D. G. Howat, V. Newton-Moss, A. H. Page, R. W. Pite, J. A. Russell, J. A. Selby-Bigge, W. E. de Sousa, H. R. Steele, W. Steer, F. C. Webster, A. S. Whitburn, W. P. Wigglesworth, and L. T. Wire.

The adoption of the Council's annual report, and the balance-sheet for 1912-13, was moved by Mr. H. Austen Hall, and seconded by Mr. W. Percy May, and was unanimously agreed to.

Mr. G. L. Elkington, Hon. Secretary, announced that the annual conversazione will be held at 18, Tufton-street, on Thursday, the 20th inst., at 8 p.m., when there will be an exhibition of architects' holiday sketches, painted work, and furniture by architects, old pewter, etc

THE LATE MR. JOHN BELCHER, R.A.

The President said he had heard with much regret while entering the meeting of the death of Mr. John Belcher, R.A. He felt that all would wish to unite in sending a letter of condolence to the relatives of this distinguished architect. The motion was agreed to in silence.

Mr. H. Martineau Fletcher, M.A., F.R.I.B.A., read the following paper on

NATIONALITY IN ART.

We are a body of architects. Whether already practising or as yet only learning our art, every one of us is, and will be for the term of his natural life, a student of architecture, and so, naturally enough, our discussions centre mainly upon technical matters, the substance of our daily thought and our daily work. They keep us in touch with reality, and in them is room enough for difference of opinion and the clash of minds. It is vital to us as architects to know what we think, or think we think, about the influence of materials on design, the ventilation of workhouse wards, the profiles of the Parthenon mouldings, the relative positions of the larder window and the fresh air inlet to the drain. An architect has so much to learn in so short a life that he is apt to fear lest the consideration of subjects not directly bearing on his work be a waste of precious hours. But there may, after all, be something gained by the exploration of such abstract questions as that which I venture to bring before you this evening. I mean that it may result in the establishment of principles, whereas technical discussions can hardly go beyond the laying down of rules. Grasp the broad principles, whether of an art or of art itself, or of life itself, and you can make your own rules, or, better still, can do without them. Rules are cramping; principles are liberating. Rules are particular, and may even, outside their own sphere of influence, be misleading; principles are universal, and obtain in every branch of human endeavour, so I will not apologise for asking you to give an evening to the consideration of what may seem a vague and non-architectural subject.

To begin with, let us try to be sure what we are talking about. "Nationality" is pretty clear, so we will leave it at that. But "art"—ye gods, what is art? Where Tolstoy and Ruskin and a hundred philosophers of æsthetic have failed to define, how shall we hope for success? I think we must

be content, instead of defining, to adopt some limited meaning for this evening's discussion only, and leave the general question on one side. Indeed, the word "art" is a dreadful word by this time—is it not? carrying with it the associations of so much loose thinking and fluffy chatter that I believe the world would benefit if it were cut out of the vocabulary of all civilisations for a season of thirty years. During that time other expressions would have been appropriated to most of the outlying ideas now lazily raked together under the general term "art," and the word itself could, with some reasonable hope of lucidity, be reinstated for the otherwise inexpressible residue. In the meanwhile, we must put up with it and use it as seldom as we may.

ART AS IMAGINATIVE INSPECTION.

For present purposes, then, let us define it as "imaginative work." I know that, if we chose, this definition would launch us on the equally stupendous inquiry, "What is imagination?" But, with your leave, we will not so choose. The treatment of tangible materials—paint and canvas, marble, glass, stone, lead, wood, plaster, and the like—if it is to have any value, must be inspired by imagination or a power of commune with the unseen, which, in its lowest terms, is a power of conceiving final results before work is begun. But in considering the effect of nationality upon such treatment it will not hinder us, and may be helpful, if we throw our net wider and include the treatment of the intangible in literature and music, to see if these also are not affected by racial environment. That is why I ask for a definition of "art" no less comprehensive than "imaginative work." Indeed, we might go further. Stevenson, writing on Velasquez, asserts temptingly that "technique is art," and certainly technique is the first essential of art. If we adopt this maxim, we might make "art" co-extensive with "human work," "human" being taken to imply "purposeful," as contrasted with the repetitive work of a machine, or the instinctive work of birds and animals, for, although the faculties brought into play the media or materials acted upon—and the ends in view may be widely different in different departments of human endeavour, as, for instance, the painting of a fresco, a difficult surgical operation, the drafting of an international treaty, the conception of a new town plan—yet if you take a broad view of life these differences are not vital. Have the ends to be attained been kept resolutely in view from start to finish, the media or materials applied in the fittest manner for the attainment of those ends, and the faculties of the worker concentrated to the utmost of his power upon those media or materials? Here are the really vital questions. If these conditions have been fulfilled, whatever be the affair in hand, be it fresco, operation, treaty, or town plan, the result will be, in a sense, a work of art, a piece of masterly craftsmanship; and there is more spiritual kinship between the great painter (the artist, that is, in the narrower sense of the phrase) and the great surgeon, the great diplomatist, the great town-planner—in a word, the leaders, the men who know their job in all branches of activity—than between the same artist and the men who are doing futile work in his own line. It is the first-rateness that produces kinship, not the occupation.

THE PERFECT FITNESS OF THE MASTERPIECE.

For one who is sensitive to quality, it takes little experience in any department of human work to recognise when he is in the presence of something first-rate. You know the feeling—an impulse to catch and hold the breath while you watch how it is going to work out; a sense of the difficulty of the undertaking; a feeling that one false step may mar everything, then a growing confidence in the easy mastery of the performer; a thrill of silent delight from the depths of your being at the perfect fitness of means to end; the almost unconscious realisation that what you contemplate is taking the very shape, and no other, that it ought to take; and, as a final conclusion, a perception of the infinite sweep and power of spirit over matter. Even where the subject is solemn or tragic, to those whose keenest interest is reserved for treatment, the emotion aroused by meet handling is far nearer to delight than to pain, and Othello, Keats's three or four most perfect odes, certain essays of Bacon that seem to contain the distillation of all wisdom in a page and a half, the glass at Chartres, Karsavina's dancing, Wren's houses at Chichester and Salisbury, Beethoven's "Coriolanus" overture, the silk painting of Chinese geese at the British Museum, different in scale and importance, and mutually incomparable as they may seem, do yet, to use a vulgarism, all "get there" alike, do all rouse that delighted recognition by doing what they set out to do so fully and concisely that you cannot conceive it so well done in any other way.

Now, this rare quality of inevitableness, of perfect fit, of saying exactly what you want to say, can only be attained by a large gift of selection and rejection exercised upon many similar but slightly varying alternatives, and the power of justly weighing the values of these alternatives depends upon a familiarity dating back beyond the days of special training into childhood itself, and therefore working in accordance with racial bent or nationality. This is seen most clearly, of course, in the case of literature, where the words, the very tools which the artist uses, are entirely different according to his nationality. In the French translator's introduction to Tolstoy's "What is Art?" there is an interesting passage which bears on this point. Tolstoy insists that only those works of art can be called great whose appeal is universal, and the translator protests:

"There is another objection which I cannot help very respectfully putting to Count Tolstoy, and also to his French readers. He tells us himself that, although universality must be the mark of true art, 'yet the finest oration, spoken in Chinese, will remain unintelligible to one who does not know Chinese.' And elsewhere he admits that the artistic worth of a work of art abides neither in its substance nor in its form, but in a perfect harmony of form and substance. Now, this being so, I am persuaded that, even if I knew Chinese, the true artistic worth of a Chinese oration would remain beyond my understanding. I should understand its substance, or, rather, I might suppose I understood it, but this very substance could be truly understood only by virtue of its harmony with the form; and this harmony would always escape me because, not being Chinese, being able to think and feel only in French, I should be without the power of understanding the form of the Chinese phrases. To judge of the mutual agreement of substance and form in a literary work, to estimate its artistic worth, you must be accustomed not only to understand the language in which it is written, but also to think and feel in that language. I am willing enough to agree to Count Tolstoy's dictum that the ideal of art is universality; but for literature, at all events, until Volapük has driven out the languages of the different nations, the ideal of a universal language can never be anything but a chimera of a generous dream."

THE MAGIC OF NATIVE ART.

The truth of this cannot be denied by anyone who is sensitive to form, and we can confirm it by an example from our own literature. Swinburne wrote poems in French, as well as in several other languages. A profound French scholar, a lord of language, with the most sensitive ear in the world, he must have been equipped for the task as no other Englishman in our history. What is the result? Frenchmen say that they could not tell that his French verse was not written by a Frenchman, but there is no magic in it. No magic! Now listen:

> When the hounds of spring are on winter's traces,
> And the mother of months, in meadow or plain,
> Fills the shadows and windy places
> With lisp of leaves and ripple of rain

How is it done? What is the secret of it?

> Fills the shadows and windy places.

There is not a word in the line, or, for that matter, in the whole stanza, that a child might not use a hundred times a day, but a million children could not weave them into that incomparable texture of sound and rhythm. Genius, of course; but genius working on material so familiar as to give absolute mastery—working, that is, in concert with, and not in contest against, nationality. Using a foreign tongue, even Swinburne cannot work such a miracle as that, because he has not inborn, and can but laboriously and partially acquire, the instinct for the values of the words he uses, the labyrinth of subsidiary and related meanings they may suggest, the exact effect on the auditory nerves of sensitive hearers that different combinations of vowels and consonants will produce. And what is incontestably true, almost truistic, of literature is, I think, true in varying degrees of other arts. There are certain tuggings at the inmost fibres, stirrings of the heart-strings, which are and can be caused only by sights, sounds, thoughts, and ways so familiar that we have lost all sense of our first acquaintance with them; nay, more—that our familiarity is innate in us, arising from the familiarity of unnumbered generations of our fathers. The Danish painter, Hammershoi, on a visit to England, was fascinated by the fires he saw—the crackle, the glow, the life in the flames, the leaping and changing reflections on walls and ceiling. "Well," said his host, "you ought to study it, make pictures of it." "Oh, but I cannot," said he; "you see, I don't *know* it!" All the firelight he had known as a child was imprisoned in a blackleaded stove, with a dull glimmer through a talc door.

If we turn to music we shall hardly find one of the greater composers whose work is not markedly national. Innovators they have all been, working out their own means of expression and their own treatment to developments which lead them far from their fellows even of their own race, so that it needs no special gift for a lover of music to recognise the national idiom, or twang, without hesitation.

(To be concluded.)

Professor W. R. Lethaby, F.S.A., proposed a vote of thanks to the lecturer, remarking that he was entirely and wholly in accord with all that Mr. Fletcher had advocated in his convincing paper. There had been of late a great acceleration in the rate in which fashions in art became obsolete. A phase or style in art at one period lasted for fifty years, then it was popular and was discountenanced in twenty and in ten years, and now it hardly attracted attention for six months. The present craze seemed to be for a style and training that were essentially French, and could not be assimilated by us.

Mr. Halsey Ricardo, in seconding the motion, referred to the literary charm of the paper, and the humour which enlivened the argument. Mr. Fletcher had argued that students might give up the use of rules. They might when they had thoroughly mastered them. The man who thoroughly understood the conventions which bound his art broke through them, and his work was regarded as an advance. It filled one with despair to see how often art retrograded in its evolution. One entered the long gallery devoted to Egyptian art at the British Museum and noted the tame and common place statuary of the year Anno Domini, or thereabouts, and walking backwards up the gallery one saw a gradual improvement in the character of the work to about, say, 7000 B.C. As to nationality in art, this was a very complicated story, and the difficulty was that the conquered people often produced art of a far superior type to that of the invading race. There was no fundamental difference in climate, and little in races, between Picardy and Wiltshire to account for the immense diversity between Salisbury and Amiens, two cathedrals in progress at one and the same time. It was curious to see how the influence of the art of the Egyptians, who loved animals passionately, scarcely extended beyond the banks of the Nile, whereas that of the naturally cruel and callous Chaldeans had permeated Byzantine lands, and had percolated as far as Southern Spain. On the other hand, the art of the

virile and dominant Romans was not to be compared with that of the Greeks.

Mr. C. F. A. Voysey thought we did not sufficiently discriminate between the result of human effort and what was Divine in origin. We ought to recognise that much of our national peculiarity was due to our insular position, our climate, and our geological formations. We were apt to ignore our natural environment. R. L. Stevenson's dictum that technique was art was most ridiculously false; he might have said with equal truth that language was thought. If men could look away from modern collectivism, they would get national feeling, or at least a national style, but this seemed impracticable.

Mr. Maurice E. Webb said Mr. Fletcher's paper was of great value to the student, for it made him think. He absolutely disagreed from a great deal of what Messrs. Lethaby and Voysey had said. Mr. Fletcher had been compelled to admit that he had to select and assimilate the good things that he found on his travels. The more architects travelled and observed, the better it would be for their art. We could learn much from the work of Frenchmen and other neighbouring nations, and they, in turn, could not fail to be influenced by our art.

Mr. W. G. Newton thought the student did wisely to borrow as much as he could from as many sources as possible. The whole point of Beaux-Arts teaching was to enable the student to benefit by the traditions of the schools, and by the work of others.

The President, in putting the vote of thanks, which was carried by acclamation, remarked that they had listened to a paper of exceptional excellence, full of thought, and finely expressed. Architectural students had to study the art of many countries, firstly, to obtain a wide knowledge of art, and, secondly, in order to obtain an insight into the motives and thoughts of the people who practised that art. Till the student had mastered the principles of his art, he was useless and helpless. At the summit, all art was not so much comparable, but one. When men were learning the art of other countries there was always a sense of disillusion and disappointment, but as time went on, and the mind expanded, this gradually wore off.

Mr. Fletcher, in reply, said it was useful to the student to cultivate a practical frame of mind, and refuse to look at a subject from many points of view. The young architect needed not only to learn rules, but to comprehend the principles on which they were founded.

In closing the proceedings the President announced that owing to Mr. L. March Phillips being unavoidably prevented from reading his promised paper on the 24th inst., Mr. F. C. Eden had kindly undertaken to read a paper, entitled, "Some Architectural notes from Piedmont."

THE CONSTRUCTION OF THE "WHITE STAR" DOCK AND THE ADJOINING QUAYS AT SOUTHAMPTON.*

By Francis Ernest Wentworth Sheilds, M.Inst.C.E.

The new works described in this paper consist of a tidal basin, in shape a parallelogram about 1,700ft. long and 400ft. wide, opening direct on to the estuary of the River Test. The depth at L.W.O.S.T. is 40ft., and at H.W.O.S.T. 53ft. The works also include three quays facing on the river-channel just outside the basin, and a curved jetty which forms a guiding stage for ships entering or leaving the dock. The depth at the outside quays ranges from 25ft. to 35ft. below L.W.O.S.T. The river-channel has been deepened to 35ft. below L.W.O.S.T. to form an approach to the new basin and adjoining quays. The site of the new tidal basin was for the most part occupied by mudlands, covered at high tide and bare at low water. These mudlands had been surrounded with a bank of chalk, within which excavation was carried out in the dry to a depth of from 30ft. to 45ft. below quay level. The foundations for the concrete quay-walls were then taken down to their full depth of 73ft. in timbered trenches. These trenches had to be carried through beds of sandy clay and of fine silty sand, both of which were rather difficult materials to sink through, and formed unsatisfactory foundations for heavy walls. The quay-wall for the portion of the dock built in the dry was designed to meet these conditions, having a long projecting toe reinforced with old rails and a sloping base.

Various difficulties which were encountered while sinking the trenches for these walls are described. At the southern end of the dock near the enclosing bank trenches were sunk from the ground-surface, and attained a depth of over 70ft. They were carried out in lengths of about 100ft., each length being surrounded by sheet-piling driven to a depth of about 35ft. Below this the trench was lined with timber runners. One such length was flooded by blows of water and sand which rose up through the floor, whereupon excavation had to be stopped when it had only reached dock-bottom level. The wall-foundation was put in at this point by sinking reinforced-concrete caissons through the flooded trench. These were lowered, weighted, and sunk by grabbing out inside them, until the tops of the caissons were at dock-bottom level, the cutting edges being 15ft. lower. The wall was then built up upon these caissons for a height of about 3ft., partly with concrete blocks fixed by divers, and partly with mass concrete deposited through water. The space in front of the wall was then covered with a blanket of puddle clay, after which the trench was again pumped out, and work was resumed in the dry. After all the walls within the enclosing bank had been constructed, the bank was cut through and the dock was flooded. Excavation was then continued down to 40ft. below L.W.O.S.T. by means of three ladder dredgers with attendant hoppers, which also excavated the approach-channel in the river to 35ft. below low water. All excavated material had to be taken out to sea, a distance of twenty-five miles. The portion of the dock-wall which lay outside the enclosing bank, together with two of the quay-walls facing the river, were constructed entirely under water, with the aid of helmet divers. The base of these walls consisted of mass concrete, and the upper portion of 6-ton and 8-ton concrete blocks at front and back, with a hearting of mass concrete. To construct them a cut was first made by a dredger throughout the length of the wall down to about dock-bottom level. Below this a trench was sunk, the sides of which were supported by sheet-piling, strutted with walings and struts fixed by divers. Inside this trench the mass concrete of the base was deposited through water. The concrete was then carefully levelled to receive the concrete blocks, which were built up in lengths of about 60ft. and two courses high. The mass-concrete hearting for each length was then deposited before the next lot of blocks were laid. The relative advantages of block-work and mass-work in this situation are discussed in the paper. These walls were backed with specially-selected material, consisting of broken concrete and ships' ashes, so as to reduce the lateral thrust and the consequent load on the foundations as much as possible. The trench-piles were not drawn, but the front ones were bored off under water at dock-bottom level. The jetty which forms the guiding-stage at the entrance to the dock was formed of creosoted Oregon piles, braced together with creosoted pitch-pine struts and walings above water, and with iron ties below water, the latter being fixed by divers. The structure is covered with a timber decking, and at intervals the jetty is stiffened by buttresses of mass concrete, extending from about dredging level to low-tide level. The site of each buttress was surrounded with sheet-piling, and the pocket thus formed was grabbed out and filled with concrete deposited through water. The remaining quay-wall, which fronted on the river, had to be built in the heart of the enclosing bank already mentioned. It was built in a dry trench sunk through the bank, and through the strata beneath it. These consisted for the most part of running sand, which made the sinking of the trenches extremely difficult. To minimise damage from the trenches being drowned out by blows of water and sand, the wall was designed as a pier-and-arch structure, each pier being constructed in a separate trench sunk from about low-water level. The piers are connected by arches at this level, and also by curtain walls, which retain the earth between them. Above the arches is a continuous face-wall, the whole being built of mass concrete. In spite of these precautions some of the pier-trenches were flooded by blows.

* Abstract of a paper read at the Institution of Civil Engineers, Tuesday, Nov. 11, 1913.

THE LONDON COUNTY COUNCIL.

At Tuesday's sitting of the London County Council the Improvements Committee reported that there has occurred a favourable opportunity for completing the widening of Piccadilly between St. James's-street and the Green Park by setting back the frontage of Nos. 157 to 160, Piccadilly, on the eastern corner of Arlington-street, immediately adjoining the new offices of the Royal Exchange Assurance Company. The property in question, with Nos. 2 and 3, Arlington-street, forms the estate of one freeholder. The total cost of dealing with the several interests under compulsory powers and of executing paving works is estimated at £20,800. Widenings of Piccadilly have been effected from time to time by the Council in co-operation with the Westminster City Council, and they recommended the Council to seek Parliamentary powers for the execution of the improvement now proposed, which forms the completion of the widenings already executed at the part of Piccadilly in question. The report was adopted.

It is proposed that the Council should acquire the ground in Poplar formerly known as the Millwall Football Ground, to be devoted partly to the purposes of playing fields for schoolchildren and partly as a public open space.

The result of the experiments with self-propelled petrol electric cars on the route between Tooley-street and Greenwich have not been such as to lead the Highways Committee to recommend their use on the Burdett-road and Grove-road tramways.

The Council was recommended to accept the offer of the Kingsway Offices Company, Ltd., of £2,270 yearly rent on a 99 years' lease, for a site at the junction of Kingsway and Aldwych. The land has an area of 9,000 square feet, and a frontage of 90ft. to Kingsway.

By section 2 (1) of the Advertisements Regulation Act, 1907, the Council is empowered to make by-laws for the regulation and control of hoardings and similar structures used for the purpose of advertising, when they exceed 12ft. in height. The Building Acts Committee in a report expressed their opinion that it is desirable that the Council should exercise this power, and submitted draft by-laws for approval.

It was reported that settlements amounting to £32,000 had been agreed upon in reference to claims arising from the widening of the Strand between Adam-street and Durham House-street.

It was recommended that Parliamentary authority be sought next session to enable the Council, when acquiring insanitary property for any purpose, to take advantage of the procedure under the Housing of the Working Classes Act, 1890, whereby the compensation to be paid shall be assessed in accordance with the principles laid down in that Act in acquiring insanitary property.

A competition is about to be held by the city of Pittsburgh, Pennsylvania, for a courthouse annex and city hall combined. The programme has been prepared by Mr. Cass Gilbert, consulting architect for the city council. Plans must be filed by noon, December 20.

The Local Government Board, after the inquiry into the application of Bewdley Town Council for a loan to add to the machinery at the waterworks, have consented to the spending of £551 for sinking a new bore-hole and £110 for an electric indicator. When the bore-hole has been sunk the Local Government Board will further consider the question of a loan for new machinery

Currente Calamo.

More work for surveyors if Mr. Lloyd George has his way, and there are no more elections like Reading and West Lothian! He told his hearers at Middlesbrough last Saturday that the first condition of urban land reform was the setting up of a cheap, expeditious, effective, and reliable procedure by which municipalities could acquire land, not merely for specific public purposes, but in anticipation of development. There must be a judicial statutory body, and it was proposed that the Land Commissioners should have the power of adjudicating upon the value of land and of ascertaining what the market value of the land was. It was also intended to make a national survey of the whole of the housing accommodation in the country, which would include an inventory of all the slums, and which would be the basis of all future operations against slums and overcrowded houses. And then doubtless, "There shall be in England seven half penny loaves sold for a penny, the three hooped pots shall have ten hoops, and I will make it a felony to drink small beer!"

Distinctly above the average of the ordinary contributions of its kind, Mr. H. M. Fletcher's paper on "Nationality in Art," at the A.A. last Monday, was an enjoyable contrast to some of the recent shallow criticism the President of the R.I.B.A. thought it worth while to notice last week. Not, by any means, that we are prepared to endorse all Mr. Fletcher said so well; but that where we might differ we should feel all the more thankful to have had fresh matter for thought so well presented. Life is so short, and there is so much to learn, and rules seem so rigid and cramping, and the exploration of abstract questions is so attractive to the young, and the paradoxist and the pseudo-critic are so glib of speech at the parting of the ways which lead severally to the firm high ground of experience, and the sloughs of conceited self-negation, that it is good once again to find a guide who knows the safe limits of profitable inquiry, and whose discretion is, nevertheless, not the barren dullness that shrinks from the problems that fascinate inexperience. The stimulation of thought is the prerogative of the real teacher, and more than one young A.A. student will own in the years to come of well-won success that some seeds sown last Monday by Mr. Fletcher helped more than most things to enrich his life's harvest of work and endeavour.

The opening address of the President of the Surveyors' Institution on Monday night dealt largely and informatively with matters which secondarily interest our own readers; but the portions we have given elsewhere should be read, especially that which deals with the housing question. All of us who are not ideal cottage-builders, or prize-winners for pretty designs, will agree with him that a really habitable cottage cannot be built for the total in two figures some claim. Recommendations Nos. 5 and 7 we heartily endorse. About the sixth we are not so sure. Where the work is done locally, and the cottages put up are few in number, there is really less saved by using ready-made timbers and fittings than appears on paper, and the increasing difficulty of securing sound wood in such is a drawback. With Mr. Woolley's temperate readiness to accept ownership or tenancy, as circumstances favour, all but the "land-burster" must agree. Ownership does sometimes present the difficulties he refers to, and, with recent experience, we are not so sanguine as he is that these could be overcome by "the statesmen." It is, as he says, simply begging the question to assert, as the Report of the Land Inquiry Committee does, that if the State aids purchase on sound financial lines, the farmer would be worse off than he is now. In some cases he would, and might reasonably prefer a secure tenancy. In others, his annual payments on a reducible mortgage would little exceed his present rent. Mr. Woolley's remarks on Transport are sensible and sound.

"This is an unfortunate litigation," said the Lord Chancellor, when beginning his judgment in the action of "Ramsden and Carr v. J. Chessum and Sons" (delivered last Monday, Nov. 11). Then he went on to say, in the terse manner of an old master of the law, "This is a simple case." Certainly it was at first only an action for goods sold and delivered by the plaintiffs to the defendants, who are builders. But, seeing that it had already been differed over by the Judges of the High Court and the Court of Appeal, its simplicity does not seem obvious to men of business. The present position is that the House of Lords has finally confirmed the judgments of Mr. Justice Hamilton and Lord Justice Kennedy for the plaintiffs, thereby reversing the views taken by Lord Justice Vaughan Williams and Lord Justice Buckley in favour of the defendants, as reported in our issue of Nov. 8, 1912. Thus in the end two Common lawyers win as against two of the Equity side. The Lord Chancellor laid out the case like a theorem in Euclid, as this: "If A brought goods to B, to be used upon work which B was doing, and B knew that those goods were not brought as a gift, but were meant to be paid for, and B then used the goods upon his work, the inference to be drawn from these facts was that there was an implied promise on the part of B to pay for the goods." In this deadly and elementary way did the House of Lords dispose of all the argument and erudition wasted in the Courts below, and leave the builders, architect, and owner to fight out amongst themselves any other question. It really reminds one of the higher criticism in a different line of thought.

We commented recently on this page on the unfair pressure that is being exerted on advertisers in certain cases, which we know they resent. Is this another instance, or is it not? We should be glad to have opinions. We quote verbatim, only omitting names:—

..... Nov. 11, 1913.

We understand from a reliable source that your name is mentioned with regard to the work in connection with the .

Perhaps you are not aware that the editor of this paper, Mr is the architect for the buildings, and we feel sure if you were to place an order with us for a series of advertisements, it would be the means of keeping your name *prominently* before the above-named gentleman. We give you the information, and trust you will treat the matter confidentially.

We enclose advertisement rates, together with copy of the current issue, and hope we may be favoured with your instructions to insert a quarter page space for a series of twenty-six insertions.

The gentleman named is a F.R.I.B.A. We cannot believe the above is being sent out with his knowledge or concurrence. If we thought so we should have persuaded the advertiser who has received it to send it on to that gentleman's clients, and to the R.I.B.A. We shall be glad to hear from other advertisers who have received a similar communication.

A plea which reaches us from Teignmouth, signed by numerous artists and others, directed primarily "by West Country men to the West Country," for the retention of thatch on our rural cottages and farms, and the abandonment of corrugated iron, which of late years has so hideously and wastefully supplanted it, has our heartiest endorsement. We know well one or two of the districts named where the unrivalled beauty of the surroundings has been marred without advantage to anyone. Not only is good thatch more lasting, but it is more snug and weatherproof. As regards comfort there is no comparison. Stock, moreover, suffer terribly beneath an iron roof in the freezing winter and scorching summer, and so does the breeder's pocket. The only two drawbacks to thatch are that it harbours vermin and is liable to destruction by fire. Both are easily guarded against. There is, of course, the further inconvenience that in some districts good thatching is a lost art. A more general demand would soon revive it, and there is little difficulty even now in getting the work done properly. In the few cases where thatch is impracticable, some of the roof-coverings like Ruberoid, Uralite, and others might be used with advantage every way instead of iron. But for the cottage and the farm, thatch has no rival in practical economy, and one has only to visit some of the places where it has been used—in such cottages as those built by Mr. E. L. Lutyens at Ashby St. Legers, for instance—to realise the charm it adds to the structure it adorns and covers. We solicit the further co-operation of all artists interested with this appeal, and assure them that any encouragement or suggestions will be gratefully received and considered by Mr. L. M. Kennaway, St. Helens, Teignmouth, who is distributing copies thereof.

South Africa—unblest by Mr. Lloyd George and Finance Acts—is enjoying as big a boom in the building industries (surest proof of all of real prosperity) as Canada. The *British and South African Export Gazette* prints some very interesting details given by Mr. Charles H. Leake, the senior managing director of one of the big Johannesburg firms, who is now in England, his London representatives being Messrs. Geo. Reid and Co., Queen-street, E.C. Asked as to which class of work is most active, Mr. Leake says: "Well, in the main I should say a four-roomed house or cottage—bedroom, bathroom, kitchen, and scullery—at a rental of about £6 or £7 per month, is most in request. The fittings, both interior and exterior, must all be of the most up-to-date character, and the latest improvements introduced at home are eagerly embodied in the houses. Indeed, the extent to which building supplies of all descriptions are required in South Africa may be gauged from this invariable desire to be up-to-date; and," added Mr. Leake, "these fittings, etc., are mostly of British origin. At least, by far the greater bulk of the importations handled by my firm are English, and I think you may take it for granted that home manufacturers have an excellent hold on the market, and by still greater efforts can undoubtedly even extend their present operations." In other directions opportunities abound for enterprise. The chief essential at the present time is

to be ready for developments, and the man who anticipates the direction of the new demands is the man who will get the business. The building industry of South Africa has a great future before it, and all classes of building supplies and fittings will be required to keep pace with the appreciation and adoption of the latest ideas in the building and allied trades."

The Sites Committee of the University of London had a meeting with the Committee for Higher Education of the London County Council yesterday week, when the question of the future housing of the University was discussed. No decision was arrived at; but there is reason to believe (so the *Times* says) that the alternatives most favourably entertained were those of some riverside site—possibly Somerset House, which was mentioned—or continuance at the Imperial Institute, with powers of extension, in accordance with the terms of the Treasury Minute of February 16, 1899. This minute, after setting forth the accommodation at the Institute buildings available for the University at that time, went on to say, "and also such provision as may hereafter be needed for the full extension and development of the University under the statutes and regulations made by the Commissioners appointed by the Act."

A movement has been inaugurated by the architects of Portland, Ore., to discontinue all preparation of tentative plans in competition for public and private buildings. They hold that the so-called competitions are of no real value to prospective clients in that plans so submitted can rarely be used without radical changes; that they are not a true test of the architects' fitness and experience for the work, and that they are a drain on the profession which ultimately prejudices owners of buildings. They urge that the expense of competitions to architects is enormous, and one not imposed in any other profession or occupation. Evidence of experience and integrity, it is claimed, should be incorporated as a requirement in every competition. It is the best man, not the most finished drawing, that should be selected. All very true, of course; but equally so, and the worse for us all, that, so far, no other method has suggested itself for the discovery and encouragement of unknown ability. A laudable intention enough, which has been prostituted by competition promoters to baser ends.

Plans for the proposed erection of fifteen dwellings, suitable for the housing of the working-classes, have been approved by the Elland Urban Council Building Committee.

A cinematograph-hall is to be built at the corner of Rye-lane and Choumert-grove, Peckham, from plans by Mr H Courtenay Constantine, A.R.I.B.A., of Mortimer-street, W.

Brighton Town Council have decided to promote a Bill in the coming Session of Parliament, with the object of converting the present Aquarium into a hydropathic spa and medical baths something after the style of the Kurhaus at Weisbaden. No plans or actual scheme have yet been formulated.

David Livingstone's association with Barnet has been fittingly commemorated in the centennial year of his birth. A memorial tablet has been affixed to the front of Livingstone Cottage on Hadley Green, the cottage in which the famous missionary resided when in England in 1857, and where he wrote "Missionary Travels and Researches in South Africa." The memorial consists of a bronze portrait, in high relief, of Livingstone, set in a circular pane upon a carved mural tablet of an architectural character, and executed in Portland stone.

FORGE PLANTS AND FORGES.

There are still not a few establishments in which, while modern conditions have been effectively studied, and up-to-date methods have secured efficiency and economy, where the smithy is still a smoky den, in which men are called upon to work under enfeebling and unhygienic conditions, which make for nothing but bad work.

Those who have seen one of the Sturtevant smoke- and fume-exhausting installations know how economically this can be remedied. Those who have not should get the new book just issued by the Sturtevant Engineering Co., Ltd., 147, Queen Victoria-street, E.C., which illustrates some recent installations and fully explains this excellent system, which consists of a carefully-designed arrangement of smoke-hoods and piping connected to a centrifugal exhausting-fan. By means of the fan a strong suction is maintained around the edges of, and inside, the hoods which are fitted over the fires, the smoke and fumes being thus drawn through the piping and discharged into the atmosphere. The point of discharge is selected to suit local conditions, being quite independent of the positions of the fires. The carrying of numerous smoke-pipes through the roof is thus entirely avoided, the whole of the smoke being extracted by the fan and discharged through a single outlet.

Smoke-exhausting and forge-blowing fans can be driven by belt from existing shafting or by direct connected electric motor or steam-engine or turbine, as desired.

The catalogue also figures and describes the firm's efficient and durable "steel-plate" forges, which are immeasurably superior to the old cast-iron types, and their handy and well-designed portable forges.

A parish hall in connection with St. Alban's Church is about to be built in Margravine-road, Fulham, from plans by Sir Aston Webb, R.A. Seating accommodation will be provided for 350 persons.

Mr. John Todd, M.S.A., district surveyor for East City, Hamilton House, Bishopsgate, has been formally declared elected as a Guardian for Bishopsgate Ward, to fill a vacancy caused by a death. Mr Todd was returned without opposition.

Foundation-stones of new Baptist Sunday-schools were laid at Woodend, near Blakesley, Northamptonshire, on Thursday in last week. The schools commemorate the centenary of the adjoining Baptist chapel, and will cost £300. The architect is Mr. G. H. Farley, Q.S.A., of Blakesley, and the builder Mr. Constable, of the same village.

The annual convention of the Institute of American Architects will be held in New Orleans on December 2, 3, and 4. The Grunewald Hotel has been selected as headquarters. The principal topic to be considered at the convention will be the enactment of a law by which the government may secure men of the greatest ability in the architectural work of the United States. The Secretary of the Institute is Mr. Glen Brown, The Octagon, Washington, D.C.

The memorial-stone of the corporation museum and gas showrooms for Burton-on-Trent was laid by the mayor on Thursday in last week. The building will consist of three stories: the showrooms for gas and electricity fittings being on the ground floor, the museum and art gallery on the first floor, and the caretaker's residence at the top. The contract price for the building is £6,650, and the premises occupy the site of the old police-station in Station-street. The Natural History and Archæological Society has offered its collection of exhibits, and numerous offers to loan art and other treasures have been made. The architect is Mr. H. Beck.

The Hursley Rural District Council received at their last meeting a report upon an amended scheme of drainage for Chandler's Ford, prepared by Messrs. Weston and Burnett, Southampton. The scheme has been enlarged by the addition of a separate installation for Mount Pleasant, for which the selected site is a disused gravel-pit about half an acre in extent. Alterations were made in the original scheme by the enlargement of the disposal works, to treat the sewage of 1,700 population in place of 1,500, as originally proposed. Some changes were also made in the route for the main sewers. As amended the council decided to submit the plans for approval to the Local Government Board.

OBITUARY.

THE LATE MR. JOHN BELCHER, R.A.

The announcement of the death of Mr. John Belcher, R.A., the architect of the Institute of Chartered Accountants, and of Colchester Town-hall, and a past-President and Royal Gold Medallist of the Royal Institute of British Architects, will have been received with regret by all members of the profession. Mr. Belcher, who died at the residence he had planned for himself nearly a generation since at Redholm, Champion Hill, on Saturday, was seventy-two years of age, and was the son of the late Mr. John Belcher, an architect who practised for many years in Adelaide-place, London Bridge. His earlier work was greatly influenced by that of the Gothic revivalists, as is evident in the premises of Messrs. Mappin and Webb, at one of the most prominent angles in the City, the junction of Cheapside and Queen Victoria-street—a commission carried out in association with his father, and illustrated in our issue of July 4, 1873, from a working drawing by Mr. Maurice B. Adams. Other buildings planned and executed by Messrs. John and John Belcher were the Royal Insurance Offices in Lombard-street, the Commercial Fire Office in Cornhill, City premises in Cannon-street, King William-street, East cheap, Poultry, Cheapside, and Newgate-street; paper-works at Dartford and many factories and warehouses; studios and stables, Weirleigh, Kent; studios, Melbury-road, Kensington; Holcombe Wood, near Chatham; Morden Grange, Blackheath; Mark Ash, Abingdon; Endalls Manor, near Wargrave; Bearroc, Berks; Stowell Park, Guildown Grange, near Guildford; Bampton House, Oxon; Pang bourne Towers; and other mansions at Northleach, Epsom, Windsor, Gomshall, Shirley, and Royston; the Curriers' Co. Hall, London-wall (illustrated in the BUILDING NEWS for July 2, 1875); Norwood Cottage Hospital; convalescent home at Chatham; church restoration, South Marston; new stalls and decorations, Pye-street Church, Westminster; church and almshouses at Northfleet. In the late Mr. Belcher's more recent works, after a season of study in Italy, supplementing earlier sketching tours in France, a revival of the best traditions of the Renaissance movement is apparent, allied, where the clients' good will and length of purses allow, to admirably-executed sculpture by leading practitioners. Among these later examples of Mr. Belcher's art are Morden House, Blackheath (illustrated by us October 11, 1902); Chateau Mauricien, Wimereux, near Boulogne; Cornbury Park, Oxon; Tetley Park, near Instow, North Devon; Royal Insurance Co.'s premises, corner of St. James's-street and Piccadilly; Mappin and Webb's Oxford-street premises (see illustration May 4, 1906); Royal Friendly Society's premises, corner of Finsbury-square and Moorgate-street (illustrated April 22, 1904); Eastern Telegraph Co.'s premises, Finsbury-pavement (illustrated May 4, 1900); Electra House, Finsbury-pavement; Winchester House, Broad-street; Messrs. Whiteley's new premises, Queen's-road, Bayswater; No. 88, Fleet-street; premises, Hanover-square; the Institute of Chartered Accountants (illustrated January 26 and May 4, 1894), unfortunately located in an obscure back street known as Moorgate-place, where, as Mr. T. E. Collcutt once remarked, "it shines like a good deed in a naughty world" (for this work, by the way, Mr. Belcher assured Mr. Mervyn Macartney that he drew out every particular and detail); the admirable town hall at Colchester, illustrated February 8, 1900, and May 16, 1902); the Exhibition Buildings, Shepherd's Bush and Uxbridge-road (illustrated August 23, September 13, October 11, 1907, and May 22, 1908); and the Ashton Memorial, Williamson Park, Lancaster (illustrated Jan. 1, 1909); the statue of General Gordon, Trafalgar-square, and its very appropriate pedestal (executed by Mr. Hamo Thornycroft, R.A.); and a memorial fountain in Park-lane. In 1907 Mr. Belcher took into partnership Mr. J. J. Joass, who had long been associated

with him in his work, and among the works of the firm are some buildings already mentioned, as well as the Royal Society of Medicine, Henrietta-street (illustrated May 12, 1912); the dressmaking premises of M. Worth, of Paris, in Hanover-square; Holy Trinity Church, Kingsway (illustrated April 29, 1910, and October 18, 1912); the Mappin terraces in the Zoological Gardens, now in course of erection for the executors of the late John Newton Mappin (illustrated September 26, 1913); and No. 31, Weymouth-street, W., also illustrated September 26, 1913. Among noteworthy and unexecuted competition designs by Mr. Belcher may be named those for the completion of the South Kensington Museum, 1894, a work executed by Sir Aston Webb; for the new Sessions House, Old Bailey (illustrated July 6, August 3 and 10, 1900), the commission for which was carried out by the late E. W. Mountford; for the University of Wales, Cardiff, 1904; the Palace of Peace at The Hague, 1907; and the Guildhall, Cambridge (illustrated April 28, 1899), which was adopted by the corporation, but has never been carried out. Mr. Belcher was for many years an active worker at the Catholic Apostolic Church, Gordon-square. From his drawings the reredos and other decorative features were added, and the capitals carved, in that masterpiece of Raphael Brandon's powers, and it is to be regretted that the fine designs he prepared in 1885-6 for completing that remarkable edifice by adding a new west front and the upper portion of the tower and its spire have never been translated into masonry. Mr. Belcher designed the Catholic Apostolic Church in Camberwell New-road (illustrated in our pages of March 31, 1876). Mr. Belcher was not only a rapid and clever draughtsman, producing a variety of elaborate detail of marked freshness and originality, but was also a skilled musician. His considerable literary abilities were manifested in his addresses, lectures, and papers, and in his scholarly volume, "The Later Renaissance in England," published eleven years ago in collaboration with Mr. Mervyn Macartney, and in his more recent essays on "Essentials in Architecture." So far back as 1869 he joined the Royal Institute of British Architects as an Associate, and became a Fellow in 1882, and, after serving on the Council and as Vice-President, was President from 1904 till 1906. In the latter year he acted as President, with conspicuous tact and ability, of the seventh International Congress of Architects—the first gathering of the kind in this country. In the following year he received the Royal Gold Medal of the Institute. Somewhat tardily, the merits of his work were recognised in 1900 by election as an Associate of the Royal Academy, and full membership followed nine years later, when he deposited as his diploma work a bold perspective of the Ashton Memorial, reproduced, as already mentioned, in our New Year's number of that year. In our issue of February 14, 1890, we illustrated by a photograph Mr. Hamo Thornycroft's bust of Mr. Belcher, then a characteristic and excellent likeness, and in our number for July 13, 1906, will be found a more recent portrait. Mr. Belcher leaves a widow, but no family. The funeral took place yesterday (Thursday), at noon, at Norwood Cemetery.

The unexpected death of Sir Robert Hunter, K.C.B., soon after his retirement from the post of solicitor to the Post Office, deprives the executive council of the National Trust of their chairman and most energetic supporter. He wrote a well known book, entitled "The Preservation of Open Spaces and of Footpaths and Other Rights of Way." He was also one of the vice-presidents of the Wimbledon and Putney Commons Extension Fund. During his official career as adviser to the last thirteen Postmasters-General, Sir Robert Hunter carried out the drafting and supervision of all the postal regulations, and the negotiations connected with the compulsory acquisition of land for Post Office purposes in London and the country. Sir Robert was in charge of the Telegraph Transfer Acts in 1911, making provision for payment of the purchase money for the telephones and the transfer of the National Telephone Company's staff, and also of the Telegraph Construction Act in the same year, authorising the Post Office to carry telegraph-wires across railways without consent under certain conditions. Sir Robert, who was twice married, was in his sixty-ninth year.

Mr. William Willett, senior, the founder of the famous building firm, and father of the originator of the Daylight Saving Bill, died at Hove on Sunday in his seventy-seventh year. The son of a Colchester coal merchant, he was apprenticed originally to the building trade, but when he came to London in the "sixties" he interested himself in a silver business. In a few years, however, he began operations as a builder, his first work being the erection of a shop at Hampstead. By degrees the firm extended its operations, chiefly in Hampstead and Kensington. One of the biggest schemes undertaken by the firm was that of the purchase of Clifford's Inn (now being acquired by the Office of Works for the extension of the Record Office) for £100,000. Mr. Willett ceased to be an active partner in the business nearly twenty years ago, and finally retired in 1900, being succeeded by his son and namesake.

COMPETITIONS.

DEVONPORT.—The rumour which has reached us from more than one quarter to the effect that the municipal buildings at Devonport, for which the recent important competition was held, are not to be carried out, is entirely incorrect. The council unanimously resolved to apply to the Local Government Board for sanction to borrow the sum of £150,000 for the purpose of erecting these buildings, and the project is now awaiting the usual inquiry to be fixed by the Board. The authorities, therefore, are at a loss to understand currency being given to such a report. We illustrated the first premiated design in the BUILDING NEWS for July 25 last. Messrs. H. V. Ashley and Winton Newman are the architects, and Mr. Ernest Newton, A.R.A., acted as the assessor.

THE BAKER SCHOLARSHIP.—The trustees of the Herbert Baker Scholarship announce that, having considered the report of the assessors on the work sent in by the two competitors, and having considered the work, they have decided not to award the scholarship for the present year. The scholarship is of the value of £250, and is open to any British subject who has spent seven years in the study and practice of architecture, who is under thirty-five years of age, and who has spent at least two-thirds of his architectural career in South Africa.

The River Wear Commissioners adopted on Friday proposals for improving traffic facilities at Hudson Dock North estimated to cost £14,000.

Mr. John Parker, F.R.I.B.A., 19, Hout-street, Cape Town, has been selected as the first mayor of the amalgamated town council of Greater Cape Town.

The beautiful parish church of St. Margaret, Stoke Golding, near Nuneaton, was reopened by the Bishop of Leicester after partial restoration on Saturday afternoon.

The premises of Messrs. Waterlow Brothers and Layton, Limited, Birchin-lane, E.C., are about to be reconstructed in steel, with Portland stone facings. The front of the ground floor will be of Aberdeen granite. Mr. William Wallace is the architect and Messrs. John Greenwood, Limited, the contractors.

The Mormons of Southern Alberta have under construction at Cardston a tabernacle which is estimated to cost £200,000. On the walls of one hall the earth before the entrance of sin will be depicted. In another hall the Garden of Eden is painted. There will be a secret "sealing room," where the rite of "celestial marriage" will be celebrated. In another sealing room ceremonies for the dead will take place. Between the two sealing rooms the Holy of Holies will be situated. It will be elaborately finished, and the entrance will be guarded by a pair of sliding doors.

Building Intelligence.

ALNWICK.—The new parish hall, which has been built at the junction of Canongate and Walkergate at Alnwick, in memory of the late Duke of Northumberland, by his two sons, was formally opened yesterday (Thursday). The principal room for entertainments, is 44ft. by 26ft. and about 20ft. in height. At one end a platform is erected. The walls up to the window-sill are panelled with Corree pine. The hall is lighted by large traceried windows. The billiard room is 28ft. by 18ft. and 11ft. high. There are also cloakrooms in the vestibule, and a classroom, 23ft. by 16ft. and 10ft. in height. At the other end of the large hall there is an anteroom, 11ft. 6in. by 14ft., and 10ft. in height. Two bedrooms, a sitting-room, kitchen, and bathroom are provided for the caretaker. The building is heated throughout with hot-water pipes laid in trenches under the floors. The contractors were Messrs. J. and G. Green, Warkworth. It occupies the site of four tenemented dwellings on Painter Hill, near St. Michael's Church, and is built of endurable stone from the Denwick quarries.

MONYHULL.—The foundation-stones will be laid to-day (Friday) of three buildings for defective-minded children to be added to the colony at Monyhull, while there are being built six more homes for adult epileptics. The Monyhull Hall estate and an adjoining farm were purchased by the Birmingham Board of Guardians a few years ago, the site secured extending to 185 acres. A first instalment of six homes, with administrative buildings, was provided, and in 1908 the Monyhull colony was opened, with accommodation for 252 inmates. The total capital cost was approximately £48,000 on the accommodation for adults, and the children's quarters were now being proceeded with. Messrs. C. Whitwell and Son, of Birmingham, are the architects, and the contract has been let to Messrs. B. Whitehouse and Sons. In the children's section there will be eight homes, accommodating 76 epileptics and 270 feeble-minded. The new administrative block will consist of a receiving home with 20 beds, a school with 300 places, including separate classrooms for epileptics, a hand laundry for the girls, and workshops for the boys. The six additional homes bring the total number of places for adults up to 504. The administrative buildings for adults are also being enlarged. The capital expenditure involved in the extension is £96,000.

TAUNTON.—A dozen municipal workmen's dwellings have just been formally opened in String-lane, Taunton. They are erected in blocks of four. Each house contains living-room (with fixed dresser), 12ft. by 13ft., and scullery on ground floor, 15ft. by 8ft. 9in., in which there is a bath with folding table over; food pantry, 3ft. by 2ft., fuel-store, 3ft. by 2ft., wash-up and w.c. (with outside entrance), together with three bedrooms above, each respectively 13ft. (average) by 9ft., 11ft. 9in. by 7ft. 3in., and 9ft. by 7ft. 4in. The houses are faced with red brick on the ground floor, with roughcast above, extending to the two gables which surmount each four houses. All the outside walls are 11in., hollow. The cost per house has been £142 13s. 4d., inclusive of sewers, streets, and fencing, the cost per cubic foot being 4d. inclusive. The rent to be charged, inclusive of rates and taxes, water, electric-light (one light in living-room only), is 4s. per week. The area of garden at the rear of each house is 100ft. by 17ft. The houses are set back 7ft. 6in. from the street-line, and are bounded by a 9in. brick wall with capped pillars. The twelve houses are built on three-quarters of an acre of land, the cost of which was £75. The dwellings were designed by Mr. D. Edwards, A.M.I.C.E., the borough surveyor.

Lieut.-Col. G. E. Holman, T.D., is slowly progressing towards recovery, and hopes to leave London on the 17th inst. Upon his return, towards the end of December, all the numerous friends who have sent expressions of sympathy will receive an acknowledgment.

PROFESSIONAL AND TRADE SOCIETIES.

ECCLESIASTICAL SYMBOLISM.—The first of the Edinburgh College of Art lectures for this season was delivered last night by Professor James Cooper, D.D., Glasgow, on "Ecclesiastical Symbolism." Mr. F. Morley Fletcher presided. The lecturer described the main symbols of the Trinity, of Christ, of the Church, the Sacraments, the Holy Scriptures, the Apostles, and Evangelists, explaining the reason of each, and illustrating his remarks by a series of slides showing how each Christian symbol had been used and pictorially treated from the "Catacomb days" of the Church at Rome down to the title-page on the Authorised English translation of the Bible in 1611. He closed with some remarks on ecclesiastical symbolism in Scotland since the Reformation, instancing the curious "Covenanter's cod," or pillow, attached to the skull on 17th-century gravestones, and the more pleasing figure of the dove with the olive-branch surmounting the pulpit canopy in churches of the 18th and early 19th centuries. A vote of thanks, proposed by Mr. G. Washington Browne, F.R.I.B.A., was heartily accorded the lecturer.

EDINBURGH ARCHITECTURAL ASSOCIATION.—The opening lecture of the session of Edinburgh Architectural Association was given on November 6 by Mr. J. Alfred Gotch, F.R.I.B.A., F.S.A., who chose as his subject "The Homes of Queen Elizabeth's Courtiers." Sir James Balfour Paul, Lyon King of Arms, presided, and among those present were Sir Robert Lorimer, Dr. Ross, Mr. Hippolyte J. Blanc, R.S.A., and Professor Baldwin Brown. In the course of his lecture, which was illustrated with limelight views, Mr. Gotch said the homes of Queen Elizabeth's courtiers marked an epoch in house-building. Previously defence had been the great aim in the building of houses; but gradually the necessity for defence had become less and less. When Queen Elizabeth came to the throne, her firm rule produced a state of quietude which enabled the great nobles of the time, enriched as they were with the spoils of the monasteries, to build large and beautiful houses, constructed with a view to a fine appearance, and not merely as shelters and places of safe retreat. Both inside and out they were picturesque and dignified. Symmetry played a very large part in their disposition. Inside the houses, the rooms were highly decorated. The ceilings were treated in a very distinctive manner, and the walls were either panelled or hung with tapestry, and everywhere the arms of the owners were displayed. Outside were gardens, with flights of steps, long terraces, statues, and stone ornaments.

THE FACULTY OF SURVEYORS OF SCOTLAND.—At a special general meeting of the members of the Faculty held in the Architectural Association's Rooms, 117, George-street, Edinburgh, on the 6th inst. (Mr. Forrest H. Lightbody, President of the Faculty, in the chair), a number of applications by practising surveyors for admission in provision of the terms of the Charter were submitted, and twenty-five of the applicants were elected as members. In addition to these, five applicants who had previously passed all the examinations of the Society of Ordained Surveyors were admitted.

LIVERPOOL ARCHITECTURAL SOCIETY.—The opening address of the sixty-sixth session was delivered on Monday evening by Mr. Hastwell Grayson, M.A., F.R.I.B.A., the president, in the Law Association Rooms. Mr. Grayson severely criticised the architectural planning of the pierhead, describing its present aspect as "merely a sea of jarring details." The area built upon possessed neither main nor cross axis, and no vista. A dignified treatment of this important space was possible, he said, if there were brought to bear upon the subject a little of the public spirit that had been transforming the great cities of America. He was very sorry that the Liverpool School for Town Planning had thought fit to publish some extremely naive efforts by the students for extending the pierhead area. That the students should work at schemes showing how much better the city might be planned if it was to be rebuilt *de novo*, like Imperial Delhi, was perfectly right; but to publish the plans was to needlessly alarm the ratepayers. A successful solution of the problem must, he thought, recognise that the pierhead was a double square, which should have well-defined boundaries, a long axis, and at least one cross axis. The river must not be hidden.

ORIGIN OF BABYLONIAN CIVILISATION.—At the British Museum, on Saturday afternoon, Mr. P. S. P. Handcock delivered a lecture on "The Assyrian Empire." After describing the rise of the empire, he went on to show that the whole of her civilisation was derived from Babylonia, the originators of whose culture were the Sumerains, of non-Semitic stock. The racial affinities of these Sumerians was one of the many unsolved problems of Assyriology. Many years ago Dr. C. J. Ball called attention to the similarity between some of the Sumerian and Chinese roots and hieroglyphs, and in his monumental work, "Chinese and Sumerian," now in the press, Dr. Ball adduced an overwhelming amount of evidence in support of an ultimate racial connection between the ancient Sumerians and the Chinese. After referring to the recent German excavations at Ashur, the ancient capital of Assyria, the lecturer proceeded to sketch the leading epochs of her history from Tukulti-ninib I. (about 1275 B.C.), who effected the conquest of Babylonia, to Ashur-bani-pal, who reduced the capital of Egypt (B.C. 666).

REASON IN GOTHIC ARCHITECTURE.—The first of a series of lectures on "Reason in Gothic Architecture" was given on Friday night at Bristol University by the Rev. D. H. Granage, D.Litt., F.S.A. The Vice-Chancellor (Sir Isambard Owen) presided. Dr. Granage first pointed out that architecture was regarded from different points of view. In many instances the romantic, or historical, or symbolical points of view claimed the attention, and those aspects sometimes overwhelmed, in their thoughts, any mere architectural detail. He wished, however, to speak of reason in Gothic architecture, because for nearly all the developments which took place in architecture from time to time, from the first century onwards, there was a definite structural reason. He wanted to emphasise the point of the rational basis of Gothic architecture, and would take his examples almost entirely from England and France, partly because they were familiar to his audience, and partly because the Gothic architecture of England and France was greater than that of any other country, and he would confine himself almost entirely to churches. With the aid of the lantern, Dr. Granage explained features of numerous buildings in England and France in early times, and the development of their construction.

ROYAL SOCIETY OF ARTS.—The opening meeting of the 160th series of the Royal Society of Arts will take place on Wednesday next, when an address will be delivered by the Chairman of the Council, Colonel Sir Thomas H. Holdich, K.C.M.G., K.C.I.E., C.B., D.Sc. Among the papers to be read at the meetings before Christmas will be one by Mr. Thorne Baker on "Applications of Electricity to Agriculture," and another on the question of the Channel Tunnel, to be brought forward by Mr. Arthur Fell, M.P. There will be five courses of Cantor lectures. The first, by Prof. Coker, on "The Measurement of Strains in Materials and Structure," will comprise, amongst other matters, the results of his own investigations into the application of polarised light to the measurement of stresses. The second course will be by Sir Charles Waldstein, who will deal generally with the subject of Industrial Art; the third, by Mr. Joseph Pennell, on Artistic Lithography. The subject of the fourth course will be announced later. The last will be by Mr. William Burton, on "Recent Developments in the Ceramic Industry." A course of lectures will also be delivered under the Cobb Trust, established from the surplus of funds subscribed for a memorial to Mr. Francis Cobb, who died in 1901.

R.I.B.A. SPECIAL COMMITTEES.—The Council have made the following appointments to the undermentioned Board and committees in accordance with By-law 49:—*Board of Professional Defence:* Max Clarke, T. Edwin Cooper, H. O. Cresswell, E. Guy Dawber, Wm. Dunn, Percival M. Fraser, K. Gammell, James S. Gibson, Edward Greenop, Edwin Gunn, Edwin T. Hall, Henry T. Hare, George Hubbard, C. Stanley Peach, Edmund Wimperis. *Professional Questions Committee:* Walter Cave, Max Clarke, Horace W. Cubitt, Frederic R. Farrow, K. Gammell, E. J. Gosling, E. Guy Dawber, Edwin Gunn, George Hubbard, C. Stanley Peach, H. A. Saul, H. D. Searles-Wood, Herbert Shepherd, E. R. Sutton, W. Henry White, William Woodward. *Schedule of Charges Committee:* Alfred W. S. Cross, E. Guy Dawber, James S. Gibson, J. Alfred Gotch, Edward Greenop, Henry T. Hare, George Hubbard, C. Stanley Peach, Sydney Perks, A. Saxon Snell, H. D. Searles-Wood, Herbert Shepherd, W. Henry White, Wm. Woodward.

ROYAL TECHNICAL COLLEGE ARCHITECTURAL CRAFTSMEN'S SOCIETY, GLASGOW.—The fourth meeting of the session in connection with the Royal Technical College Architectural Craftsmen's Society, Glasgow, was held on Friday evening, November 7; Mr. T. G. Gilmour, A.R.I.B.A., in the chair. Mr. D. S. Pringle read a paper on "Needle-Shoring." He said the first precaution to be taken is to thoroughly examine the building before commencing operations, and if there are any cracks, to fill them up with stucco, so that, should any further settlement take place during the progress of the work, it will be seen at once. Mr. Pringle described the various methods of shoring, and the purposes for each. Thereafter Mr. Robert T. Anderson read a paper on "Underpinning," and explained that sometimes foundations are required deeper down, either because of the erection of an adjoining building on a lower level, or because a basement is wanted, and this is obtained by underpinning. The work is carried out in sections about 3ft. long, commencing at each end, and leaving out alternate sections, which are filled in afterwards. Care must be taken to see that the courses of brickwork are kept on the same level, and that the wedging-up under the old foundation is carefully done.

Correspondence.

UNFAIR TREATMENT WITH REGARD TO TENDERS.

To the Editor of the BUILDING NEWS.

SIR,—Your columns have on more than one occasion called attention to the unfair manner in which some builders are treated in respect to tenders. The following recent experience of ours will possibly interest you.

We were invited, with about five other builders, to quote for a job at Beckenham, a few miles from here. There was one other Bromley builder, the remainder being of Beckenham. We received the plan and specification in due course, and submitted our tender at the appointed time and place, these being all opened in quite approved manner before all the tenderers or their representatives. We were lowest by about £40. We have heard nothing further of the matter, and our inquiry of the secretary has had no reply. We now find that the work has been given to a Beckenham firm, on the plea that the committee desire to keep the work in Beckenham. Why it was necessary to ask two outside builders does not appear clear.

The position is all the more interesting as the work is at the Liberal Club, which presumably advocates Free Trade!—We are, etc.,

PEARCE BROS.

Sherman-road, Bromley, Kent.

Our Illustrations.

RENOVATION OF A FIFTEENTH CENTURY DINING-HALL IN FRANCE.

This water-colour drawing by Mr. Leslie Cook, which he sent to the Royal Academy from Paris, was exhibited in the Architectural Gallery at this year's Exhibition. It illustrates the renovation of an old dining-hall, in which the walls and chimney-piece are of stone. Originally the apartment was hung with tapestries, and probably had banners also. The timber beams are a little cambered and are of oak, like the casement shutters to some of the windows, which have carved linen-patterned panels. The floor has unglazed tiles and slabs of stone; but similar apartments were more usually, Mr. Cook says, either floored with wood or with richly-patterned tiles like those found at the Chateau de Langlais.

LONDON COUNTY AND WESTMINSTER BANK, PALMER'S GREEN.

This branch banking premises is about to be commenced on a corner site next The Drive, as shown by the accompanying plan. The walls will be of red and purple brick facings, with a Portland stone circular porch on the angle of the site, and the roof will be covered with tiles. The architect is Mr. A. Sykes, F.R.I.B.A., of Finsbury-pavement, E.C.

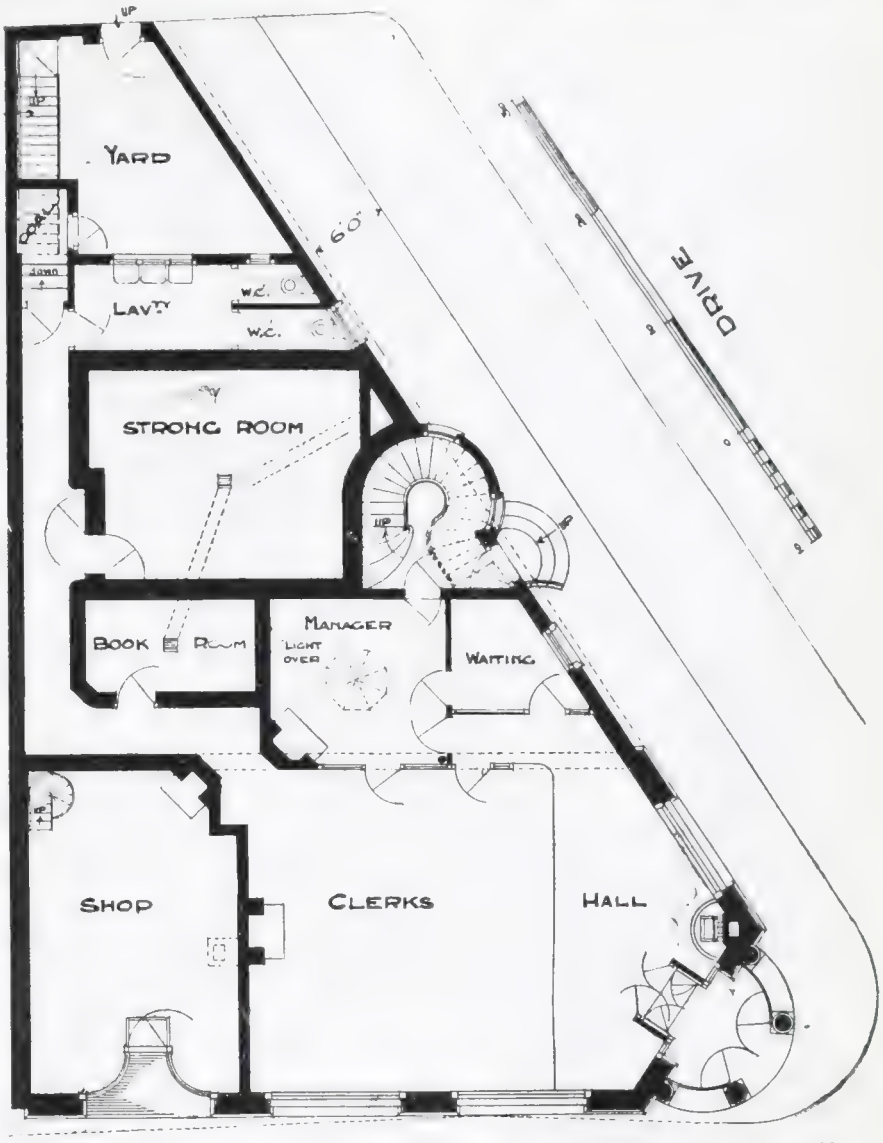
NEW FIRE BRIGADE STATION AND FIREMEN'S DWELLINGS, BLACKBURN.

SELECTED DESIGN.

This plate gives a general view of the intended new buildings, from the selected design in the recent competition, when Mr. Walter Stirrup, F.R.I.B.A., of Richmond terrace, Blackburn, was chosen architect for the work, the contest being restricted to local firms. Mr. Frank Gatley Briggs, F.R.I.B.A. (of Messrs. Briggs, Wolstenholme, and Thornely) acted as assessor. The site is enclosed by Harrison-street, Canterbury-street, Sumner-street, and Byron-street. The two first-named frontages are 182ft. and 234ft. long respectively. The last-named frontages are 397ft. and 163ft. The area is thus very extensive. The station provides an engine-house for six motor-engines, with all necessary stores, watch-room, office, battery-room, superintendent's house, sergeant's house, large drill-yard, stables, etc., with thirty-three firemen's dwellings. The total cost will be about £25,000. Premiums of £100, £50, and £25 respectively were offered, and eleven sets of plans were sent in. The engine-house was to face Byrom-street and to cover 3,240 feet super. Accrington bricks and stone dressings were stipulated. The cottages were to cost £300 each.

A SHOP AT EASTBOURNE.

This corner block is now being built for Mr. J. Sainsbury, as a provision shop, in bricks of two shades of red with some Portland-stone dressings and mosaic panels, the roof being tiled. The accommodation in the upper part of the premises is for a manager and his large staff. Mr. A. Sykes, F.R.I.B.A., of Finsbury-pavement, E.C., is the architect.



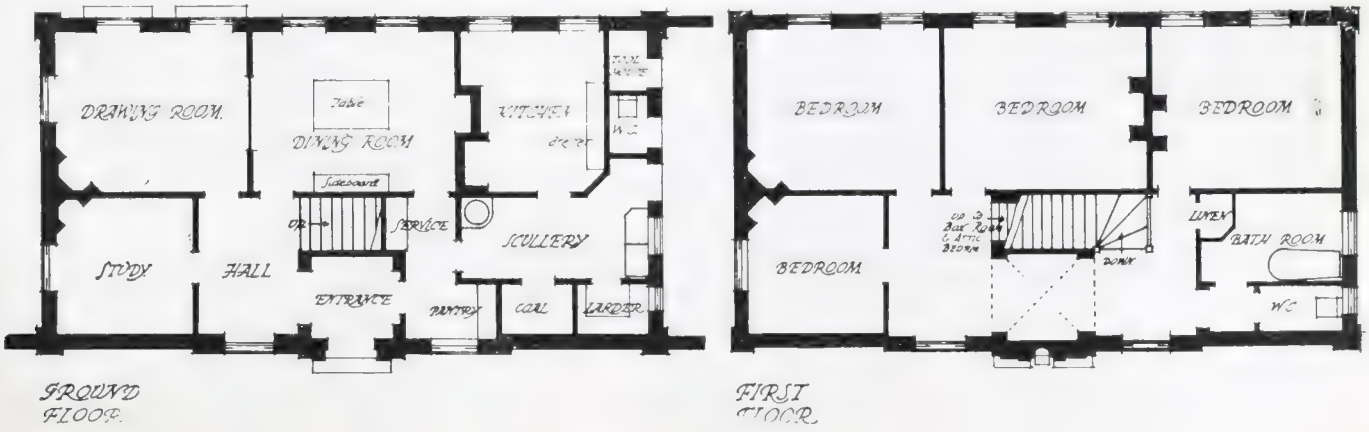
LONDON COUNTY AND WESTMINSTER BANK, PALMER'S GREEN.
Mr. A. Sykes, F.R.I.B.A., Architect.

THE WHITE HOUSE, EDGWARE.

The point aimed at in the arrangement of the plans of this house is complete privacy, and, consequently, none of the rooms look out on to the front of the building, which faces north, and this omission of windows adds greatly to the breadth of the façade. The elevation is set back about 40ft. from the road, giving a forecourt enclosed by walls, part of which are shown in the sketch. The garden, on the south side of the premises, is commanded by the living-room windows. The walls are of brickwork and the roofing of tiles. The plans explain the lay-out of the building, which is to be erected shortly. Mr. J. E. Dixon Spain, A.R.I.B.A., is the architect, and the drawing here reproduced was exhibited at the Royal Academy this year.

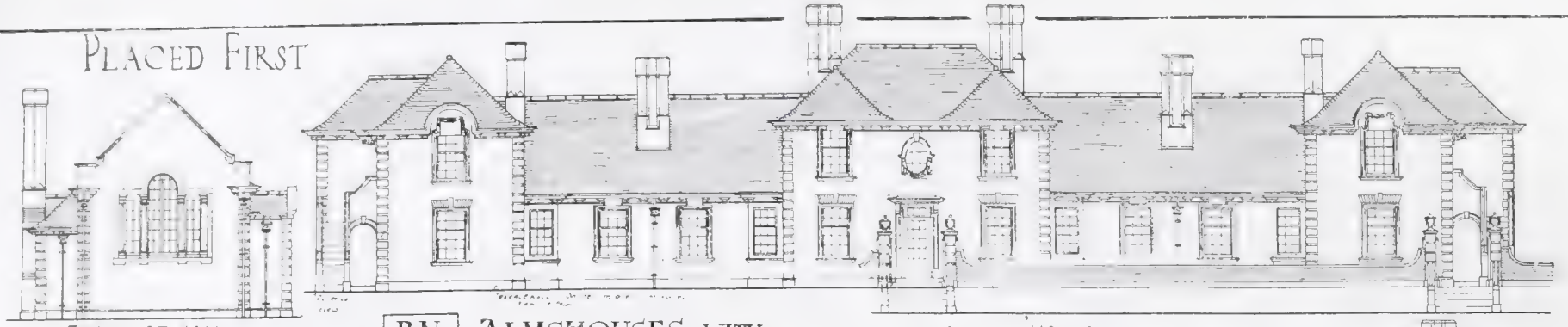
A BLOCK OF ALMSHOUSES, WITH CHAPEL AND HALL.

(For the assessor's award in this BUILDING NEWS Designing Club competition see pp. 679-81.)



"THE WHITE HOUSE," EDGWARE.—Mr. J. E. Dixon Spain, A.R.I.B.A., Architect.

PLACED FIRST



FRONT OF HALL

S.E. ELEV OF HOUSES

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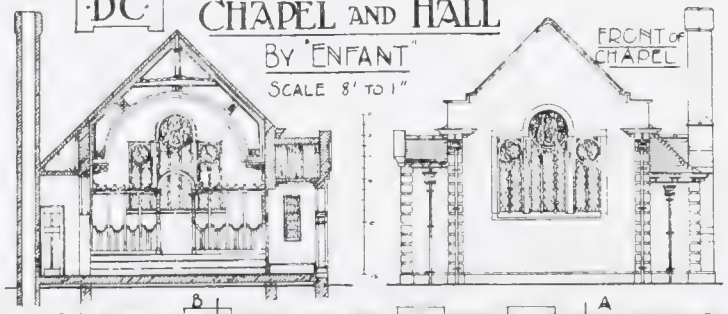
ALMSHOUSES WITH CHAPEL AND HALL

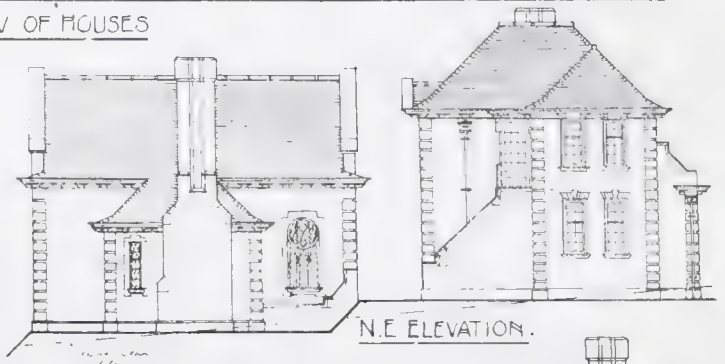
BY 'ENFANT'

SCALE 8' TO 1"



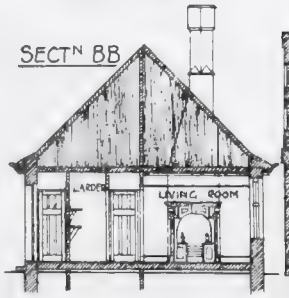
SIDE OF HALL



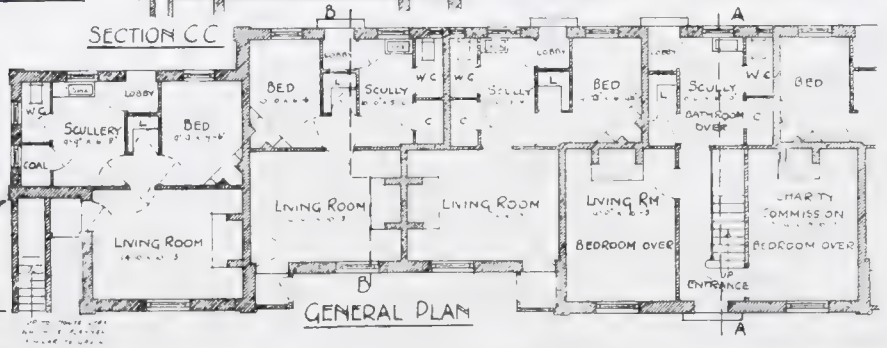


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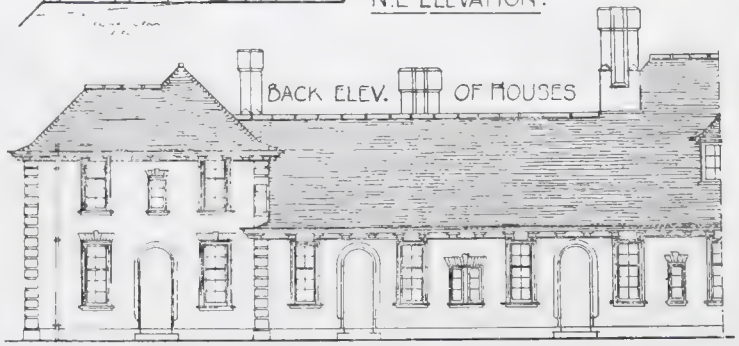
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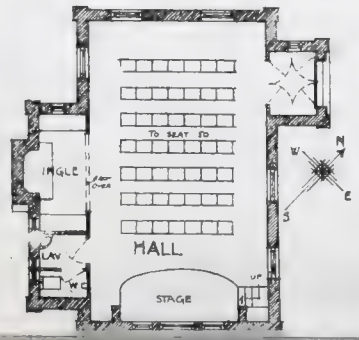


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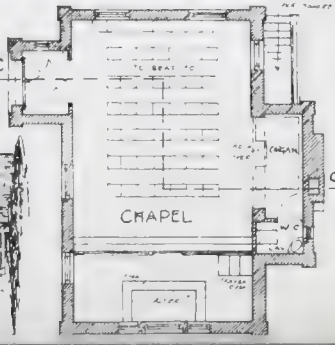


GENERAL PLAN

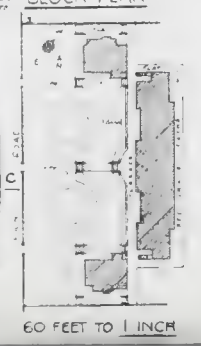




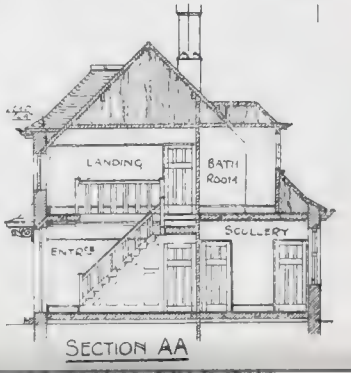




BLOCK PLAN

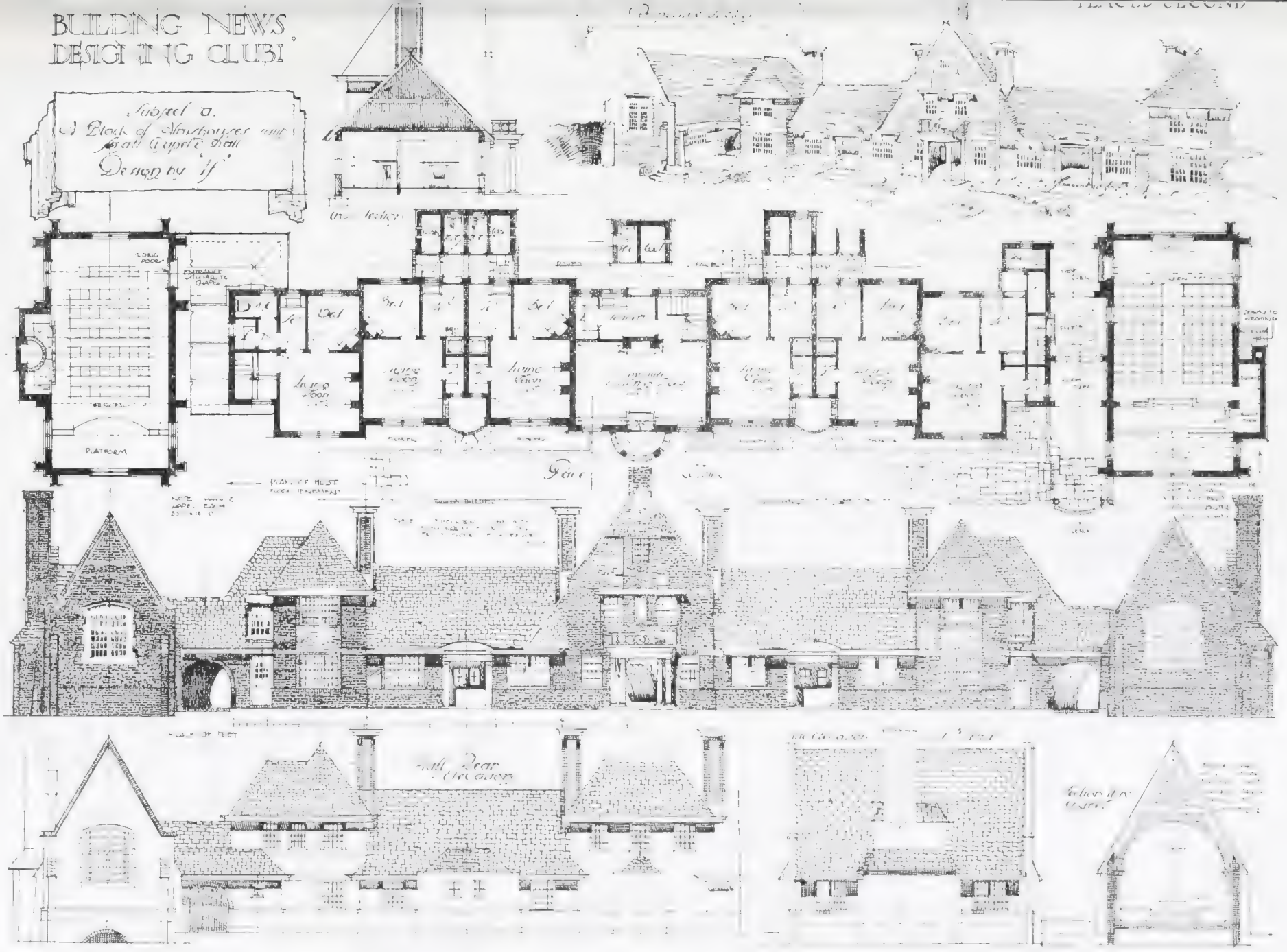


60 FEET TO 1 INCH



SECTION AA

BUILDING NEWS
DESIGNING CLUB


Chapel
Block of Workmen's
Design by
LONG POOL
ENTRANCE
PLATFORM
Dining Room
Dining Room
Dining Room

Intercommunication.

GUINEAS FOR BEST REPLIES.

We offer a prize of one guinea every week for what we deem the best reply to any query appearing in this column, which we deem worth insertion.

Replies must be sent in over real name and address. No others can receive a prize. The Editor's judgment is final.

This competition is restricted to buyers of the paper, and with each reply a coupon cut from our front page must be enclosed.

Any number of replies can be sent, but a coupon of this date must accompany each.

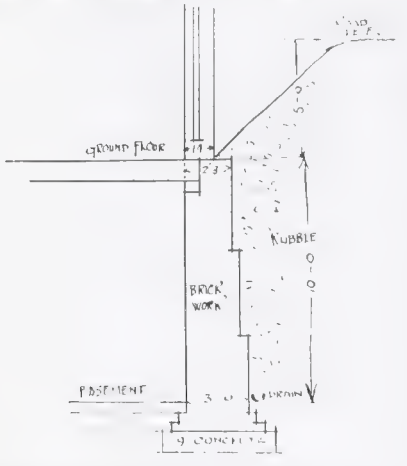
All else being equal, brief replies will stand the best chance. We emphasise this, as some correspondents ignore the fact that querists want terse facts, not long essays. Any necessary illustrations must be in line only—no tints or washes—and about twice the size they are meant to be reproduced. We are unable to avail ourselves of replies that contain illustrations unless we receive them by first post on Tuesdays.

The right to withhold the prize in the event of no reply being received worthy of it is reserved by the Editor, who also claims the right to publish any other replies he may deem useful.

We award the guinea to Mr. Arthur S. Crumpler.

REPLIES.

[13136.]—RETAINING WALL.—In reply to "Park," it is presumed the road is situated as shown on accompanying sketch. Thus the portion of the wall below ground floor would in a sense be a retaining wall, though, of course, no better could be introduced. The thickness of wall at base is taken as

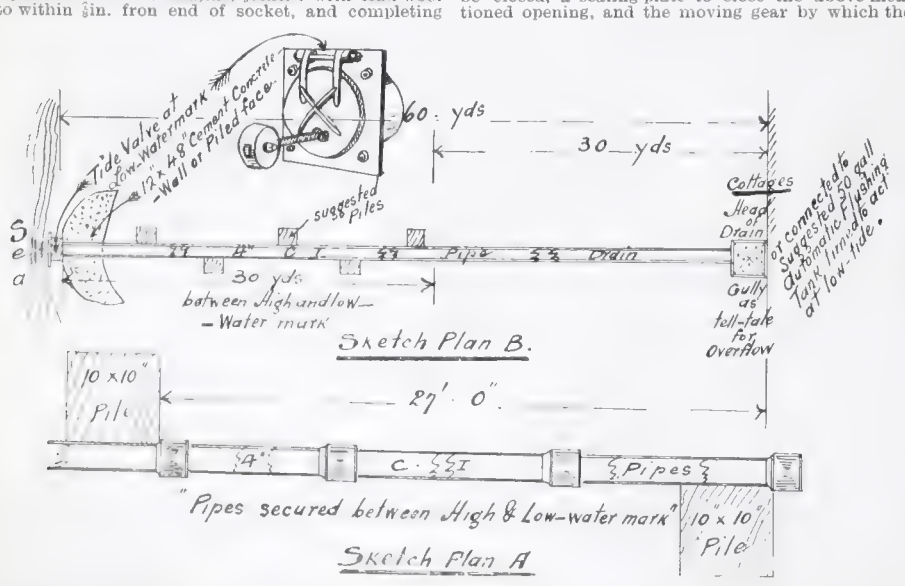


quarter of height of wall, and diminishes to 2ft. 3in. The wall should be packed round with rubble, and an open drain laid at base to take away surface water.—Arthur S. Crumpler, 20, Alexandra-road, Hemel Hempstead.

[13137.]—OUTFALL DRAIN.—Points for consideration:—Burying of pipes in trench sunk in sand will be met by laying 4in. strongest quality cast-iron pipes in 9ft. or 12ft lengths, jointed with lead-wool to within ⅜in. from end of socket, and completing this portion with molten lead, well caulked up. Corrosion by sea-water will be best served by having the pipes prepared by Dr. Angus Smith's process of heated solution of pitch, tar, and linseed-oil. Clogging of drain and outfall by sand and seaweed. To prevent this occurring the end of drain should be protected by a hinged steel flap (secured to the end of pipe outlet), the pivots of axle ends of same to be encased in ball-bearing sockets, so as to secure easy opening when the flow of liquid is in operation; the oiling of same to receive periodical attention to secure a constant and efficient working. Assuming expense is not to be taken into account, then a 50gal. automatic flushing cistern (such as Burn's or Doulton's) should be fixed at the head of drain for flushing and thoroughly clearing away all accumulations, which will gather when the tide closes the said outlet-flap, and prevent the due discharge of drain. To secure the said line of pipes from being shifted by the tide in the thirty yards between high and low-water marks, I would suggest that 10in. by 10in. elm or pitch-pine piles be driven at every fourth joint in a zig-zag manner, as sketch A. Laying between tides: Lead-wool or Ribbonite joints, and a 4in. expanding drain-stopper will enable the plumber to keep intact his line of pipes irrespective of the tide. The second scheme (B) I would suggest is as per plan herewith.—James Bromley, Moorville, Lower Bank-road, Fulwood, near Preston, Lancs.

[13137.]—OUTFALL DRAIN.—The best material for the drain-pipes would be iron, and if expense is no great objection, I should use the long steel tubes, which can be obtained up to 60ft. in length, and are protected externally with a kind of tarred tape. By this method the number of joints would be considerably lessened, and it would be possible, no doubt, to lay one tube between each tide. At the outfall, which, from the information given, would appear to be visible at low water, a tidal flap must be provided, and the end of the pipe anchored by means of a pile of sufficient depth to withstand any movement. As the outlet is not below the water at certain times, the seaweed, sand, &c., could be cleared away, periodical inspections being made. At the same time it would be advisable to keep the outfall a little from the present bed, say 3ft. At the inlet, a penstock should be used to prevent the back-flooding at high tide. Whilst dealing with the discharge, "W. M. P." has two methods, either to make his drain large enough to hold the day's amount, or to make a tank to collect the amount provided before, and then to discharge the whole in one bulk when the tide is going out. I believe that the former arrangement is in use at Weston-super-Mare, and the latter at Plymouth; but, of course, on a much larger scale, either being preferable to discharging in driblets. I should only use the ordinary iron pipes, coated with Dr. Angus Smith's solution, for cheapness. The tubes can be bent to quite a fair radius, whereas the iron pipes have more joints, which add to the labour, and cannot be bent.—K. H. Read, Lecturer on Building Construction, Gloucester and Stroud Technical Schools.

[13137.]—OUTFALL DRAIN.—The sewer referred to by "W. M. P." could be constructed by either of the following methods with equal success:—(1) By using cast-iron pipes laid on a bed of concrete, and to prevent corrosion they should be coated with Angus Smith's solution. (2) Another method would be the adoption of concrete pipes, and these would be absolutely free from corrosion, and these can be obtained constructed on the Bonna system, or with expanded metal, and stand practically the same pressure as cast-iron pipes. The trench would be strutted in the usual way, except that vertical poling boards with splayed ends would be introduced. Whichever of the two methods mentioned above is adopted, as the discharge is between the high and low-tide mark, it would be undesirable to discharge the sewerage either at low tide or when the tide is coming in, but to discharge at the ebb tide, consequently provision must be made for the accumulation of sewage at outfall. The provision should take the form of a storage tank, which should be oblong in shape, in the nature of widening out the sewer, and it would then discharge into a penstock chamber, which is fitted with a penstock valve, which consists of an orifice corresponding in size and shape to the pipe to be closed, a sealing-plate to close the above-mentioned opening, and the moving gear by which the sealing-plate is regulated. By this means the sewerage could be regulated to discharge at ebb tides, and then there would be no seaweed to clog pipes; ebb tides usually occur twice in 26 hours.—Arthur S. Crumpler, 20, Alexandra-road, Hemel Hempstead.



LEGAL INTELLIGENCE.

CLIFFORD'S INN ARBITRATION.—Arbitration in connection with the acquisition by H.M. Commissioners of Works of part of Clifford's Inn for the purpose of the extension of the Record Office took place at the Surveyors' Institution on Friday and Saturday before Mr. Philip E. Pilditch. Mr. William Willett, jun., the owner of the property, claims £53,430 as purchase money. Mr. Balfour Browne, K.C., for the claimant, explained that in 1903 Mr. Willett purchased the property for £100,000, it being advertised as a building site, containing 38,000sq.ft. The total area to be acquired by H.M. Office of Works amounted to 7,900ft., and claimant was asking £53,430 plus the value of the land occupied by the party-wall, which belonged half to each. An important block of property had been sold to the Knights Bachelors, and another portion to the Law Union and Rock Insurance Company. Mr. Charles Augustus Lang, of Messrs. James Lang and Co., called by the claimant, estimated the total claim at £50,596, excluding the land covered by the wall, and other witnesses estimated the land to be worth £5 per foot. The Attorney-General, referring to the selling of the property to Mr. Willett by the Trustees ten years ago, said he could scarcely believe that they were so morally negligent and criminal as to part with it at £2 12s. 6d. per foot, when all responsible and reasonable persons now realised its worth at £5 per foot. He thought it curious, too, that a property should be so seriously depreciated in value because a portion of it was sold. He contended there was no damage caused by severance. Crown witnesses valued the land at from £13,000 to £17,737. The arbitrator reserved his decision.

RETAINING AN INSURANCE CARD.—Before Judge Smyly, at Shoreditch County-court on Friday, Alexander Edmeads, labourer, Oaklands-rise, Higham-hill, Walthamstow, brought an action against Benjamin Goodman, contractor, Haggerston-road, Dalston, to recover £2 8s. 1d. for damages for alleged breach of statutory obligations under the National Health Insurance Act in failing to deliver up to the plaintiff his contribution card under the National Health Insurance Act, whereby the plaintiff was unable to obtain or commence other employment for a period of nine days during which the card was retained. He claimed nine days' wages—77 hours at the rate of 7½d. per hour—£2 8s. 1d. Judge Smyly did not think that the plaintiff was entitled to more than two days' pay, seeing that he could have applied to the office for the cards. He gave the plaintiff the right to enter judgment for 12s. 6d. in the High Court if it was there found that damages were recoverable.

LIVELY SCENE IN A COUNCIL-CHAMBER.—On Friday, the Goole magistrates were occupied all day in hearing a charge of unlawful and malicious wounding preferred by Mr. William Jackson, the vice-chairman of the Goole Urban District Council, against Major Cecil Gustav Bradley, C.E., the surveyor to the council. There was a remarkable array of witnesses, which included all the members of the Goole Urban Council except one, who was not present when the alleged offence took place, and all the chief officials of the council. Mr. Harold Newell, barrister, appeared for the complainant, and Mr. T. E. Ellison, barrister, defended. Mr. Wm. Jackson, who is sixty years of age, said he had been a member of the Goole Urban Council for a number of years, and for two years was its chairman. Some time ago the council proposed to erect a temporary slaughter-house, and witness suggested that a certain firm, Blakey and Co., of Liverpool, should be asked to send in a tender. The surveyor demurred; but Mr. Jackson persisted, and handed in the name of the firm. Three weeks later, and on October 29, the night of the assault, the subject was before a committee meeting, and witness asked some questions, he having had a letter from the Liverpool firm stating that they had not been asked to tender. At witness's suggestion a letter-book was produced, which contained a copy of a letter which had been sent to the firm. A letter despatch-book also showed that a letter apparently had been sent, and an office-boy who was called said he had posted the letter. Witness then expressed the opinion that the letter had either not been posted, or had gone astray in the post. A member then suggested that he (Mr Jackson) should apologise. The defendant then said that if he did not apologise he would make him. Defendant was sitting four yards away, when he jumped up, approached witness like a lion, and struck him two or three blows in the face. They were very heavy blows, his lip being cut, and his teeth dislodged. The blows caused blood to stream down his coat and waistcoat. In cross-examination the witness denied having made

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SELECTED DESIGN FOR NEW FIRE BRIGADE STATION AND FIREMEN'S DWELLINGS, THE WRANGLING, BLACKBURN.
Mr. WALTER SHIRLEY, F.R.I.B.A., Architect.



Mr. J. E. Dixon Seaman, A.R.I.B.A., Architect.

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LONDON COUNTY AND WESTMINSTER BANK, PALMER'S GREEN.
Mr. A. Sykes, F.R.I.B.A., Architect.



A SHOP AT EASTBOURNE.—Mr. A. Sykes, F.R.I.B.A., Architect.

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RENOVATION OF A FIFTEENTH CENTURY DINI



HALL IN FRANCE.—By Mr. Leslie B. Cook, Architect.

vile insinuations in the council-chamber against the surveyor. He had not said to members of the council that he would leave no stone unturned until he removed the surveyor; but he had said he was not suitable for Goole, and that it was time he was removed.—Mr. Ellison: Are you still of the opinion that the letter was not sent?—Mr. Jackson: Yes.—And that the copy in the letter-book was a forgery?—No, I don't say so.—A sensation was then created by Mr Ellison producing a letter received from Messrs. Blakey and Co., dated October 31, and which stated that they expressed deep regret that the council's letter, which had come to hand all right, had been misplaced.—Mr. Ellison: Now will you apologise?—Mr. Jackson: Yes; I am very glad the letter has turned up.—And you are very sorry that you made insinuations against Mr. Bradley?—Yes, I am.—Councillor Blyth, J.P., said that one of the remarks made by Mr. Jackson on the night in question was that Mr. Bradley was bluffing him, and that he had bluffed him before.—Mr. Bradley then left his chair, approached Mr. Jackson in a fighting attitude, and rained blow after blow on Mr. Jackson's face. Blood streamed down complainant's face and flowed on to the carpet.—Councillor F. B. Glew, the chairman of the committee meeting at which the assault occurred, considered that there was not sufficient provocation for Mr. Bradley to strike the complainant.—For the defence, Mr. Bradley, the defendant, gave evidence. He stated that he was appointed surveyor to the Goole Urban Council in 1908. He was a civil engineer, and he possessed the highest qualification. He was also a major in the 5th Volunteer Battalion of the King's Own Yorkshire Light Infantry, and he served as an officer in the King's Own Lancaster Regiment during the Boer war. About four years ago he prosecuted the local firm of Jackson and Oates, builders, whose principals were relatives of Councillor Jackson. Since that time complainant's attitude towards him had been one of hostility. Immediately preceding the assault, Councillor Jackson intimated that the letter to Blakey and Co. had never been sent, and that he (defendant) would bluff him no longer in the manner that he had bluffed the other members. A little later Mr. Jackson said he had a drastic resolution which he should move at the next council meeting. Witness admitted that he lost his temper, and gave as his reason for striking that complainant's manner was most insulting, and reached the limit of human endurance.—The chairman said: The magistrates are satisfied that an assault has been committed, and have no alternative but to commit the defendant for trial at the next Assizes. We shall admit him to bail in one personal security of £25.

BUILDERS' LIABILITY TO SUB-CONTRACTORS.—Ramsden and Carr v. Chessum.—In this protracted litigation over a sum of £142, judgment was given in the House of Lords on Monday by the Lord Chancellor and Lords Kinnear, Dunedin, and Atkinson, in an appeal from a decision of the Court of Appeal reversing a decision by Mr. Justice Hamilton. The respondents, Messrs. Chessum and Sons, of Southplace, Finsbury, a firm of builders, took the contract for erecting the Cinema House, 225, Oxford-street, and the appellants, Messrs. Ramsden and Carr, of Seymour-place, South Kensington, were makers of door furniture, and supplied to the order of Mr. Melville Seth Ward, F.R.I.B.A., of Victoria-street, S.W., the architect to the London Cinematograph Co., furniture valued at £142 13s. for the picture-theatre. The appellants sued the respondent builders and the architect for this sum, and alleged that the architect acted in this transaction as the agent of the respondents. This agency was denied by the respondents in their defence. In the original trial, Mr. Justice Hamilton gave judgment for the appellants for the amount claimed, on the grounds that the user of the goods by respondents raised an implied promise to pay for them. He further held that appellants had failed to show that the architect had acted as agent for the respondents. This appeal was reversed by a majority of the Court of Appeal, Lords Justices Vaughan Williams and Buckley (Lord Justice Kennedy dissenting), judgment being given for the respondents. We gave these judgments in full in our issue of Nov. 8, 1912, p. 667. In the House of Lords on Friday, the Lord Chancellor upheld the original decision of Mr. Justice Hamilton, reversing the order of the Court of Appeal, and restoring the judgment of Mr. Justice Hamilton for the appellants. Lords Kinnear, Dunedin, and Atkinson concurred.

A railway, 65 miles in length, 3ft. 2in. gauge, and estimated to cost £560,000, is about to be constructed in the island of Sardinia. It will connect Iglesias with Marrubbiu, passing through Fluminimaggiore, Arbus, and Guspini.

Our Office Table.

A useful and readable primer on "Mediæval Wall Paintings," by J. Charles Wall, is published by Talbot, 13, Paternoster row, at half a crown. It is meant for the general reader interested, and the illustrations, of which there are no less than ninety six, if small, are probably sufficient. Mr. Wall brings his usual clearness and completeness of description to bear on his subject, and our own readers will find much in the handy and interesting volume they will miss in more ambitious works on Mediæval wall-painting.

Owing to the recent falling off in the demand for window-glass, the Belgian Window Glass Makers' Syndicate has been obliged to curtail considerably its output, which a few months back was put at 36,000,000 square feet. Consequently, this year's production may now be reckoned at about 30,000,000 square feet. At the moment the demand may be described as normally active, especially for foreign account, so that it is hoped there will be no need to take any steps towards the further limitation of production, the more so as it is anticipated that the new American Customs tariff will have the effect of stimulating exports of window-glass from European countries to the United States.

Mr. T. Adams, an inspector of the Local Government Board, held an inquiry at Harrow on Thursday in last week, into the application of the urban district council for sanction to prepare a town planning scheme for Harrow and for certain bordering lands in the parishes of Pinner (in the rural district council of Hendon) and Northolt (in the rural district of Uxbridge). The only opposition entered to the scheme was by the Hendon Rural Council, who objected to any part of their district being handed over to Harrow. The clerk of the Harrow council (Mr. J. Strachan) said they had included 1,720 acres in the scheme, of which 110 acres were in Pinner and 100 acres in Northolt. Mr. J. Percy Bennetts, engineer to the council; said the chief object of the scheme was to obtain suitable wide through traffic roads, and there were four of these, the principal being a new main road connecting Harrow and Pinner. These roads were 60ft. wide. The undeveloped land was ready for building purposes, and the greater portion of the already developed land included in the area was that on which good-class property had been erected. Mr. J. A. Smith, chairman of the Town-Planning Committee, also gave evidence.

Twelve months ago the New South Wales Government carried out a scheme of State housing in the form of workmen's dwellings in a suburb of Sydney. The Agent-General for the State, Mr. T. A. Coghlan, has received the report of the Housing Board on the project. The Board reports well on the first year's experience of the scheme. The land allowed to each dwelling varies from 38ft. to 45ft. frontage, with an average depth of 133ft. The cottages are constructed of bricks from the State kilns of the New South Wales Government. There are no front fences; there is merely an ornamental kerb, and there is a wire dividing-fence between each front garden. The rents charged by the Government are from 15 to 20 per cent. cheaper than those charged by private landlords for similar accommodation in suburbs about the same distance from the centre of the city. The cottages are lighted throughout by electricity, with gas laid on for cooking purposes. Over 600 applications were received for the houses within the time fixed, and since then a further considerable number has been sent in. The garden-city plan has been adopted in this experiment.

The annual report of Mr. Charles F. Wike, the city engineer of Sheffield, for the year ended March 25, 1913, notes that the state of trade in connection with new buildings and the laying out of new streets in the city, during 1912, was not quite so good as in 1911, in which there was a considerable decline as compared with many previous years. The number of plans submitted during the year was 974 (viz., 963 for new buildings, building work, or drainage, and 11 for new streets). This is 28 less than the 998 submitted in 1911. Of these plans nearly 90 per cent. were approved. The number of street and sewer plans approved during the year was 11, showing aggregate lengths of 1,367 yards of streets, 1,454 yards of sewers, and 266 yards of watercourses. The figures for 1912 show a decline as relates to the construction of streets and sewers of about 13 and 49 per cent. respectively, as compared with 1911. The number of new houses shown on the approved plans were 701, being a decrease of 37.52 per cent. below the number (1,125) of houses approved in 1911, and 36 per cent. below the number (1,099) approved in 1910. The number of houses erected and certified for occupation during the year was 703, as compared with the number, 866, certified in the previous year, being a decrease of 163 houses, or 18.83 per cent. These houses were mainly erected in the High Hazels, Fulwood, Walkley-lane, Banner Cross, Abbey-lane, and Firth Park districts. The number of ruinous and dangerous buildings and walls and dangerous places dealt with during the year was 275, being 54 more than the number dealt with in the previous year. These dangeous structures and places were either demolished, secured, repaired, or protected to secure the safety of the public or occupiers of the neighbouring buildings. During the past year the sewage disposal extension scheme submitted to the Local Government Board in 1904 has made considerable progress, and will probably be completed within the next twelve months. The works proposed were then estimated to cost £270,369, but the work will probably be carried out for the sum of £262,993, showing a saving of £7,376 on the estimate, notwithstanding the fact that costs have largely increased, especially for labour and materials.

What seems to be a very valuable deposit of gypsum has been found in Western Australia. A company has been formed to work an area of 10,000 acres at Cowcowing Lake. The company employed the services of an analyst, who put down bores 18ft. in depth, and on this calculation he estimated roughly that there were four hundred million tons of high-grade gypsum suitable for the manufacture of plaster of Paris and gypsum products. The analysis of the gypsum is reported to vary from 85 per cent. to 97 per cent. pure gypsum. It is stated that all the plaster of Paris used in Australia is at present being imported from America and Germany, and amounted last year to 103,153cwt., valued at £22,754, and the West Australian imports alone amounted to 8,439cwt., valued at £1,374.

So far, the Land Value Duties have yielded in the first six months of the current financial year £225,000, against £73,000 in the corresponding half of last year.

Mr. James Foote, a member of the Aberdeen Parish Council, has been appointed by the Government as works engineer at the Harbour of Refuge, Peterhead, and will leave Aberdeen this week to take up his new duties.

A new fire-station is being built in Station-road, Ashington, Co. Durham, which is to be the fire apparatus depot for over 20 collieries in the district, and has cost nearly £3,000. More than 30 men will be stationed on the premises.

Mr. R. L. Roberts, of Abercarn, is the architect of a new institute at Cwmfelinfach, which has been erected at a cost of £11,000. The building provides a swimming-bath, reading-room, library, billiard-rooms, and offices.

The President of the Board of Education has appointed Dr Aubrey Strahan, F.R.S., to be Director of the Geological Survey and Museum in succession to Dr. J. J. H. Teall, F.R.S., who will retire on January 5. Dr. Strahan, who was born in 1852, was educated at Eton and St. John's College, Cambridge. He is president of the Geological Society and one of the assistant directors of the Geological Survey of England and Wales. Dr. Teall, who was born on January 5, 1849, has been Director of the Geological Survey and Museum since 1901. He is the author of "British Petrography: a Description of the Rocks of the British Isles," 1888.

MEETINGS FOR THE ENSUING WEEK.

MONDAY.—Royal Institute of British Architects. "The New Wesleyan Hall," by H. V. Lanchester, F.R.I.B.A. 8 p.m.
Institution of Sanitary Engineers. "The Sewering of Towns," by F. W. Cable, A.M.I.C.E. Caxton Hall, Westminster. 8 p.m.

TUESDAY.—Institution of Civil Engineers. Discussion on "The Construction of the White Star Dock at Southampton." 8 p.m.

WEDNESDAY.—Society of Architects. Concert of Chamber Music, under Direction of Noel D. Sheffield, M.S.A. 28, Bedford-square, W.C. 8 p.m.
Royal Society of Arts. Opening Address by Col. Sir T. H. Holditch, K.C.M.G., K.C.I.E., C.B., Chairman of Council. 8 p.m.
St. Paul's Ecclesiological Society. "The Architecture of Normandy," by the Rev. R. S. Mylne, F.S.A. St. Paul's Chapter House. 8 p.m.

THURSDAY.—Architectural Association. Conversazione. 18, Tufton-street, S.W. 8 p.m.

FRIDAY (Nov. 21).—Glasgow Architectural Craftsmen's Society. "Electrical Installation for Domestic Purposes," by W. T. Peddie. 8 p.m.

SATURDAY (Nov. 22).—Association of Builders' Foremen and Clerks of Works. Annual Dinner at the King's Hall, Holborn Restaurant. 6.30 p.m.

Mr. C. A. Broadhead, who has for several years been quantity surveyor in the Nottingham city architect's department, has been appointed to a similar position under the Swansea Corporation.

The city council of Peterborough have adopted plans by the surveyor, Mr. Walsham, for laying out and fencing the new cemetery on the Newark road (an area of nine acres) at an estimated outlay of £10,210.

Mr. R. W. Lyons Hawkins, A.M.Inst.C.E., late of the Public Works Department of India, has died suddenly at his residence in Earl's Court-road. Mr. Hawkins was appointed to the Civil Service of India in 1873. He was employed on irrigation works in the North-West Provinces and Oudh. He became an executive engineer in 1884, and retired in 1906.

The presentation of prizes gained by the evening-class students of Glasgow School of Art during the 1912-1913 session took place on Thursday. The prize-winners were:—Silver Medals—Drawing and Painting—Andrew Carson, Peter Lindsay, George Ternent; Modelling—Peter Ramage. Bronze Medals.—Drawing and Painting—J. A. Hill, Wm. Stewart, David S. Hixon; Design—Mary C. Higgins. Monthly Competitions—Design Section—Wm. C. Mackie, Jas. B. Davidson.

The annual meeting of the Institution of Municipal Engineers took place on Friday, in their rooms in Southampton-row, when Mr. Horace Boot, Westminster, consulting engineer to Tunbridge Wells Corporation, was elected president. In the evening the president held a reception at the Holborn Restaurant, the guests including the Lord Mayor and Lady Mayoress, Sheriff and Mrs. Painter, the mayors and mayoresses of various London boroughs, the presidents of the Institution of Mechanical Engineers, the Society of Engineers, and the Incorporated Municipal Electrical Association, and Sir John Gavey.

The Durham County Council, at their meeting on Friday, sealed contracts for the erection of new schools at Station Town (to cost £2,798), Etherley (£4,416), Dubmire (£2,888), and Greencroft (£10,273), and for alterations at Collierley (£6,962), Middlestone Moor (£1,084), Spennymoor North Road (£2,338). It was agreed that new schools be provided at Ryton at an estimated cost of £4,794; Birtley (estimated cost £6 238), Boldon Colliery (£3,900), and Tudhoe (£6,850), and that the Spennymoor Higher Elementary School be enlarged at an estimated cost of £3,600. A new building will be built for the Bishop Auckland Grammar School on a site within the present playing-field.

Mr. Leopold Salomons has purchased on behalf of the public 235 acres of Box Hill. The land will be vested in the National Trust, and is to be permanently maintained as an open area. The land thus saved takes in the entire ridge, and stretches in an unbroken line from Burford Bridge to Upper Box Hill Farm, the River Mole forming the western boundary. It comprises on the north-east not only Box Hill proper, and the fine valley up which the zig-zag military road climbs; it includes the bold slope above this road with its clumps of forest trees rising from banks of stunted scrub, against the serried line of closely-planted pines which frame the picture seen from the ridge of Box Hill.

Trade News.

WAGES MOVEMENTS.

CRICCIETH.—In consequence of a demand sent in by the local joiners, two months ago, for an increase in wages of 10d. a day, a joint meeting of master builders and workmen has been held at Criccieth. The vice-chairman of the urban council (Mr. W. R. Hughes) was accepted by both sides as chairman. After a long discussion, it was agreed that the men should resume work forthwith at the same wages as before until present contracts were completed, and thereafter the wages are to be by the hour, at 6½d.

DUNDEE.—A strike among the glaziers of Dundee, which has lasted since the middle of October, has been settled by the Dundee Conciliation Board. The men demanded an increase of 1d. per hour, which was refused. Both parties to the dispute agreed to refer the matter to the Conciliation Board, and, under the terms arranged, the men are to receive an immediate advance of ½d. per hour, and the employers are to take into consideration the question of a further advance in May next.

WREXHAM.—The bricklayers and builders' workmen at Wrexham have struck work for an advance of a penny per hour, and shorter hours of labour.

The salary of Mr. Arthur G. Bradshaw, borough surveyor and water engineer to the Lancaster Town Council, has been increased by £30 per annum.

Strong opposition was evident at the Local Government Board inquiry held at Chard on Monday by Mr. Courteney Clifton, M.Inst.C.E., into the application of the town council to borrow the sum of £1,200 for the purchase of seven acres of land upon which to erect workmen's dwellings.

With full Masonic ceremony the Duke of Portland, Provincial Grand Master of Nottinghamshire, laid last week, the memorial-stone of the new wing of Mansfield Hospital, a memorial to King Edward. The new wing will increase the accommodation from 56 to 109 beds. The cost is estimated at £12,000.

The designs for the Royal Colonial Institute's new building in Bristol have been prepared by Messrs. Bridgman and Bridgman, A.R.I.B.A., M.S.A., architects, of Bristol, Torquay, and Paignton. A contract was signed last week for its erection by Messrs. Wilkins and Sons, of Bristol, at a cost of £4,800.

The twentieth annual dinner of the Association of Builders' Foremen and Clerks of Works (56, Old Bailey, E.C.) will be held on Saturday evening in next week, the 22nd inst., at 6.30 p.m., in the King's Hall, Holborn Restaurant. The chair will be occupied by Mr. William Nicholson, of Messrs. Wm. Nicholson and Sons, Limited, builders and timber merchants, Leeds, and Cannon-street, E.C.

In connection with the preliminary work of the foundation of the Australian capital city Canberra, there is at present a good deal of activity being displayed, and the Department of Home Affairs of the Commonwealth in Melbourne has issued specifications and conditions of contract for the water-supply pumping-plant at Canberra, tenders for which close on the 26th inst. Copies of the plans and specifications may be seen at the office of the High Commissioner for the Commonwealth of Australia, 72, Victoria-street, London, S.W.

At the last meeting of the Colchester Town Council it was decided to take immediate steps to preserve the foundations of the ancient main gateway of the Roman city of Camulodunum, which was recently discovered in the borough by the Morant Club. The council also decided to afford facilities to the public to view the ruins, which the Morant Club declares to be the most perfect example of a Roman city gate remaining in Britain. Some Roman coins and fragments of Roman pottery were also discovered in the course of the excavations.

The new parish church of Whiteinch, N.B., was formally dedicated and opened for public worship on Sunday by the Most Reverend the Moderator, Dr. Wallace Williamson. Some years ago the congregation had just completed the erection of a suite of halls to accommodate 1,000 persons, when it was found that the existing church, built about fifty years previously, was insecure. It was condemned and taken down, and although the halls had cost £4,000, the congregation immediately set about building the new church, now completed. The church accommodates 900 persons, and has cost £5,500.

LATEST PRICES.

IRON.

Steel Joists, Belgian and German (ex steamer, London)	per ton	£6	2	6	to	£6	5	0
Steel Joists, English		7	10	0	,,	7	12	6
Wrought-Iron Girder Plates		7	0	0	,,	7	5	0
Steel Girder Plates		7	2	6	,,	8	2	6
Bar Iron, good Staffs		6	5	0	,,	8	10	0
Do., Lowmoor, Flat, Round, or Square		20	0	0	,,	0	0	0
Do., Welsh		5	15	0	,,	5	17	0
Boiler Plates, Iron—								
South Staffs		8	0	0	,,	8	15	0
Best Snedshill		9	0	0	,,	9	10	0

Angles 10s., Tees 20s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £8 15s to £9.
Ditto galvanised, £14 to £15 10s. per ton.

Galvanised Corrugated Sheet Iron—

6ft. to 8ft. long, inclusive	No. 18 to 20. Per ton.				No. 22 to 24 Per ton.		
gauge	£13	0	0	...	£13	10	0
Best ditto	13	0	0	...	14	0	0

Wire Nails (Points de Paris)—

3 to 7	8	9	10	11	12	13	14	15	B.W.G.
8/3	8/9	9/3	9/9	10/3	11/-	11/9	12/6	13/6	per cwt.

	Per ton.				Per ton.		
Cast-Iron Columns	£7	10	0	to	£9	0	0
Cast-Iron Stanchions	7	10	0	,,	9	0	0
Rolled-Iron Fencing Wire	8	5	0	,,	8	10	0
Rolled-Steel Fencing Wire	7	5	0	,,	7	10	0
,, ,, ,, Galvanised	8	15	0	,,	9	5	0
Cast-Iron Sash Weights	5	0	0	,,	5	5	0
Cut Floor Brads	9	15	0	,,	—		
Corrugated Iron, 24 gauge	16	0	0	,,	—		
Galvanised Wire Strand, 7 ply, 14 B.W.G.	14	5	0	,,	—		

B.B. Drawn Telegraph Wire, Galvanised—

0 to 8	9	10	11	12	B.W.G.
£10 10s.	£10 15s.	£11 0s.	£11 5s.	£11 15s.	per ton.

Cast-Iron Socket Pipes—

3in. diameter	£6	2	6	to	£6	7	0
4in. to 6in.	6	0	0	,,	6	5	0
7in. to 24in. (all sizes)	5	7	6	,,	6	0	0

[Coated with composition, 5s. 0d. per ton extra, turned and bored joints, 5s. 0d. per ton extra.]

Pig Iron—	Per ton.
Cold Blast, Lilleshall	110s. 0d. to 117s. 6d.
Hot Blast, ditto	70s. 0d. ,, 75s. 0d.

Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—

Gas-Tubes	75 p.c.
Water-Tubes	72½ ,,
Steam-Tubes	67½ ,,
Galvanised Gas-Tubes	65 ,,
Galvanised Water-Tubes	62½ ,,
Galvanised Steam-Tubes	57½ ,,

OTHER METALS.

Spelter, Silesian	Per ton	£20	12	6	to £20	17	6
Lead Water Pipe, Town		24	5	0	,,	—	
,, ,, ,, Country		25	0	0	,,	—	
Lead Barrel Pipe, Town		25	5	0	,,	—	
,, ,, ,, Country		26	0	0	,,	—	
Lead Pipe, Tinned inside, Town		26	5	0	,,	—	
,, ,, ,, ,, Country		27	0	0	,,	—	
Lead Pipe, Tinned inside and outside	Town	28	15	0	,,	—	
,, ,, ,, ,, Country		29	10	0	,,	—	
Composition Gas-Pipe, Town		27	5	0	,,	—	
,, ,, Country		28	0	0	,,	—	
Lead Soil-pipe (up to 4½in.) Town		27	5	0	,,	—	
,, ,, ,, Country		28	0	0	,,	—	
[Over 4½in. £1 per ton extra.]							
Lead Shot, in 28lb. bags		24	15	0	,,	—	
Copper Sheets, sheathing & rods		89	0	0	,, 89	10	0
Copper, British Cake and Ingot		78	10	0	,, 79	0	0
Tin, English Ingots		185	0	0	,, 185	10	0
Do., Bars		186	0	0	,, 186	10	0
Pig Lead, in 1cwt. pigs (Town)		21	5	0	,,	—	
Sheet Lead, Town		23	15	0	,,	—	
,, ,, Country		24	10	0	,,	—	
Genuine White Lead		30	15	0	,,	—	
Refined Red Lead		25	0	0	,,	—	
Sheet Zinc		29	0	0	,,	—	
Old Lead, against account		18	15	0	,,	—	
Tin ,,	per cwt.	10	5	0	,,	—	
Cut nails (per cwt. basis, ordinary brand		0	11	3	,	—	

TIMBER.

CONSTRUCTIONAL.

Yellow Pine Deals, Quebec, per standard:—							
	1st quality	£38	0	0	to £45	0	0
,, ,, ,,	2nd ,,	26	0	0	,, 32	0	0
,, ,, ,,	3rd ,,	16	0	0	,, 18	10	0
Spruce Deals: St. Johns		10	0	0	,, 11	10	0
,, ,,	Miramichi	9	10	0	,, 10	10	0
,, ,,	Boards: Swag	11	0	0	,, 12	0	0
Red Deals: Archangel	1st quality	21	0	0	,, 24	0	0
,, ,, ,,	2nd ,,	16	0	0	,, 19	0	0
,, ,, ,,	3rd ,,	12	0	0	,, 14	0	0
,, ,,	St. Petersburg—						
,, ,, ,,	1st quality	16	10	0	,, 18	0	0
,, ,, ,,	2nd ,,	14	10	0	,, 15	10	0
,, ,,	Wyburg & Uleaborg	12	10	0	,, 15	0	0
,, ,,	Gefle, Gothenburg, and Stockholm	12	10	0	,, 17	0	0
White Deals: Crown		14	0	0	,, 15	10	0
,, ,,	Seconds	11	10	0	,, 13	0	0
Flooring: White and Planed—							
1st and 2nd quality mixed		10	15	0	,, 11	15	0
1st, 2nd, & 3rd quality mixed		10	5	0	,, 11	0	0
Red Planed, 1st quality		14	10	0	,, 17	0	0
Pitch Pine: Prime Deals and Boards		18	0	0	,, 23	0	0
Lignum Vitæ	Per ton	7	0	0	,, 14	0	0

	Per cubic foot.						
Yellow Pine Logs (waney board)	0	5	0	,,	0	5	6
Pitch Pine Logs	0	2	0	,,	0	2	6
Birch: Quebec Logs	0	2	3	,,	0	2	9
Oak: Austrian Wainscot	0	7	0	,,	0	8	6
Mahogany: Gaboon	0	2	0	,	0	2	3

FURNITURE AND HARDWOODS.

Teak: Burmese, per load, 50ft.	£20	0	0	to	£25	0	0
Teak: Java, per load, 50ft.	16	0	0	,,	21	0	0
	Per cubic foot.						
Oak Planks: U.S.A., imported	0	1	9	to	0	2	6
,, Boards ,, ,, Prm.	0	3	0	,,	0	3	6
,, ,, ,, ,, Mdm.	0	2	6	,,	0	2	9
Sequoia (Californian Redwood)	0	2	4	,,	0	3	6
Birch: Quebec logs.	0	2	3	,,	0	2	9
,, ,, sawn planks...	0	1	3	,,	0	2	0
Oak: Austrian Wainscot	0	7	0	.	0	8	0
Walnut: Prime boards and planks	0	6	0	,,	0	6	6
Walnut: Mdm. ,, ,,	0	3	6	,,	0	4	6
Greenheart: Hewn logs	0	3	3	,,	0	4	0
Cedar: Cigar box...	0	4	9	,,	0	5	0
Satin Walnut: Imp. sawn boards, prime	0	2	4	,,	0	2	9
Orham: Imp. sawn boards, prime	0	2	0	,,	0	3	3
Mahogany: St. Domingo, Cuba, and Honduras ...	0	6	0	,,	0	9	0
,, African, Assinee, &c.	0	5	0	,,	0	6	6
,, Lagos and Benin	0	4	6	,,	0	6	0
,, Sekondi and Cape Lopez	0	3	0	,,	0	4	0
,, Gaboon	0	2	0	,,	0	2	3
Satinwood: West Indian	0	10	0	,,	0	14	0
Rosewood... Per ton	8	0	0	,,	12	0	0
Lignum Vitæ ,,	7	0	0	,,	14	0	0

STONE.*

Red Mansfield, in blocks... per foot cube	£0	2	4
Darley Dale, ditto ,,	0	2	3
Red Corsehill, ditto ,,	0	3	4
Closeburn Red Freestone, ditto ,,	0	2	0
Ancaster, ditto ,,	0	1	10
Greenshill, ditto ,,	0	1	11
Chilmark, ditto (in truck at Nine Elms) ,,	0	1	10½
Hard York, ditto ,,	0	2	0
Ditto ditto 6in. sawn both sides, landings, random sizes... per foot sup.	0	2	8
Ditto ditto 3in. slab sawn two sides, random sizes ,,		1	3

* All F.O.R. London.

Bath Stone, delivered on road waggons, Paddington Depot per foot cube	0	1	7½
Ditto, ditto, Nine Elms Depot ,,	0	1	9½
Beer Stone, delivered on rail at Seaton Station ,,	0	1	0
Ditto, delivered at Nine Elms Station ,,	0	1	6

Portland Stone, in random blocks of 20ft. average :—

	Brown Whit Bed.	White Base Bed
Delivered on road waggons at Paddington Depot, Nine Elms Depot, or Pimlico Wharf	Per foot cube. ... £0 2 3	... £0 2 4

SLATES.

	in.	in.	£	s.	d.	per 1,000 of
Blue Portmadoc ...	20×10	...	12	13	6	1,200 at r.stn
,, ,, ...	16× 8	...	6	12	6	,, ,,
Blue Bangor	20×10	...	13	2	6	,, ,,
,, ,, ...	20×12	...	13	17	6	,, ,,
First quality	20×10	...	13	0	0	,, ,,
,, ,, ...	20×12	...	13	15	0	,, ,,
,, ,, ...	16× 8	...	7	5	0	,, ,,
Eureka unfading green	20×10	...	15	17	6	,, ,,
,, ,, ...	20×12	...	18	7	6	,, ,,
,, ,, ...	18×10	...	13	5	0	,, ,,
,, ,, ...	16× 8	...	10	5	0	,, ,,
Permanent green ...	20×10	...	11	12	6	,, ,,
,, ,, ...	18×10	...	9	12	6	,, ,,
,, ,, ...	16× 8	...	6	12	6	,, ,,

BRICKS.

(All prices net.)

First Hard Stocks ...	£1	15	0	per 1,000 alongside, in	
Second Hard Stocks	1	11	0	,, ,,	[river.
Mild Stocks	1	9	0	,, ,,	,,
Picked Stocks for Facings	2	5	0	,,	delivered at rly. stn.
Flettons	1	10	0	,, ,,	,,
Pressed Wire Cuts...	1	18	0	,, ,,	,,
Red Wire Cuts.....	1	14	0	,, ,,	,,
Best Fareham Red	3	12	0	,,	,,
Best Red Pressed Ruabon Facing ...	5	0	0	,, ,,	,,
Best Blue Pressed Staffordshire	3	15	0	,, ,,	,,
Ditto Bullnose	4	0	0	,, ,,	,,
Best Stourbridge Firebricks	3	14	0	,, ,,	,,
2½in. Best Red Accrington Plastic Facing Bricks	4	10	6	,,	Net, delivered in full truck loads in London.

" Accrington Best Red Plastic Facing per 1,000 Bricks £2 10 0

3½" ditto Second Best Plastic ditto	2	2	6
Ditto Ordinary Second Bricks	1	11	3
Ditto Plastic Engineering Bricks	1	17	6
Sewer Arch Brick not more than 3½" in thickest part	2	0	0
3½" Chimney Bricks fit for outside work	2	6	0
3½" ditto ditto through and through	2	0	0
3½" Beaded, Ovolo and Bevel Jambs; Octagons; 2¼" and ½" radius Bullnoses; Stock patterns	3	7	6
Accrington Air Bricks, 9" × 2 course deep, each	0	0	6
Ditto ditto 9" × 1 course ..... ,,	0	0	3

Accrington Camber Arches :—

3 course deep, 4½" soffit, per foot opening ...							0	1	3
4	ditto	4½"	ditto	ditto	ditto	...	0	1	8
5	ditto	4½"	ditto	ditto	ditto	...	0	2	1
6	ditto	4½"	ditto	ditto	ditto	...	0	2	6
3	ditto	9"	ditto	ditto	ditto	...	0	2	1
4	ditto	9"	ditto	ditto	ditto	...	0	2	11
5	ditto	9"	ditto	ditto	ditto	...	0	3	9
6	ditto	9"	ditto	ditto	ditto	...	0	4	6

Net free on rail or free on boat at works.

GLAZED BRICKS.

HARD GLAZES, (PER 1,000.)

White, Ivory, and Salt Glazed. Best.	Buff, Cream, & Bronze. Seconds.	Other Colours.	Second Colours.
Stretchers—			
£12 7 6	£10 17 6	£13 17 6	£17 17 6	£12 7 6
Headers -			
11 17 6	10 7 6	13 7 6	17 7 6	11 17 6
Quoins, Bullnose, and 4½in. Flats—			
15 17 6	14 17 6	17 17 6	21 7 6	15 17 6
Double Stretchers -			
17 17 6	16 7 6	20 17 6	24 7 6	17 17 6
Double Headers—			
14 17 6	13 7 6	17 17 6	21 7 6	14 17 6
One side and two ends, square—			
18 17 6	17 7 6	21 17 6	26 7 6	18 17 6
Two sides and one end, square—			
19 17 6	18 7 6	22 17 6	26 17 6	19 17 6
Splays and Squints—			
17 7 6	15 17 6	21 17 6	24 17 6	17 7 6

Plinth and Hollow Bricks. Stretchers and Headers—5d. each 4d. each 6d. each 6d. each 5d. each

Double Bullnose, Round Ends, Bullnose Stops—5d. each 4d. each 6d. each 6d. each 5d. each

Rounded Internal Angles—4d. each 3d. each 5d. each 5d. each 4d. each

MOULDED BRICKS

Stretchers and Headers—8d. each 8d. each 8d. each 8d. each 8d. each

Internal and External Angles—1/2 each 1/2 each 1/2 each 1/2 each 1/2 each

Cill Bullnose, Stretchers and Headers—5d. each 4d. each 6d. each 6d. each 5d. each

Majolica or Soft Glazed Stretchers and Headers ... Per 1,000 £22 17 6

,, ,, Quoins and Bullnose... 27 17 6

Compass bricks, circular and arch bricks of single radius £6 per 1,000 over above list for their respective kinds and colours } Not exceeding 9in. by 4½in by 2½in.

Camber arch bricks, any kind or colour, 1s. 2d. each }

Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.

' These prices are carriage paid in full truck loads to London Stations.

	s.	d.	
Thames Sand	7	6	per yard, delivered
Pit Sand	7	0	,, ,,
Thames Ballast	6	6	,,

	s.	d.		s.	d.	Per ton,
Best Portland Cement ...	36	0	to	41	0	delivered
Ground Blue Lias Lime .	21	0				per ton delivered.

Exclusive of charge for sacks.

	s.	d.		s.	d.	Per yard,
Grey Stone Lime	13	6	to	14	0	delivered

Stourbridge Fireclay in sacks 27s. 0d. per ton at railway station.

TILES.

	s.	d.	Dlvrd. at
Plain red roofing tiles ...	42	0	per 1000 ry. stn.
Hip and Valley tiles	3	7	per doz. ,, ,,
Broseley tiles	50	0	per 1000 ,, ,,
Ornamental tiles	52	6	,, ,, ,,
Hip and Valley tiles	4	0	per doz. ,, ,,
Ruabon red, brown, or brindled do. (Edwards) ...	57	6	per 1000 ,, ,,
Ornamental do.	60	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	0	,, ,, ,,
Selected "Perfecta" roofing tiles :—Plain tiles (Peake's) ...	46	0	per 1000 ,, ,,
Ornamental do.	48	6	,, ,, ,,
Hip tiles	3	10½	per doz. ,, ,,
Valley tiles	3	4½	,, ,, ,,
"Rosemary" brand plain tiles	48	0	per 1000 ,, ,,
Ornamental tiles	50	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	8	,, ,, ,,
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 ,, ,,
Hand-made sand-faced ...	45	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	6	,, ,, ,,
Hartshill" brand plain tiles, sand-faced	50	0	per 1000 ,, ,,
Pressed	47	6	,, ,, ,,
Ornamental do.	50	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
alley tiles	3	6	,, ,,

OILS.

Rapeseed, English pale, per tun	£28	15	0	to £29	5 0
Do., brown ,, ...	26	15	0	,, 27	5 0
Cottonseed, refined ,, ...	29	0	0	,, 30	0 0
Olive, Spanish ,, ...	39	10	0	,, 40	0 0
Seal, pale ,, ...	21	0	0	,, 21	10 0
Cocoanut, Cochin ,, ...	46	0	0	,, 46	10 0
Do., Ceylon ,, ...	42	10	0	,, 43	0 0
Do., Mauritius ,, ...	42	10	0	,, 43	0 0
Palm, Lagos ,, ...	32	5	0	,, 33	5 0
Do. Nut Kernel ,, ...	35	0	0	,, 35	10 0
Oleine ,, ...	17	5	0	,, 19	5 0
Sperm ,, ...	30	0	0	,, 31	0 0
Lubricating U.S. ... per gal,	0	7	0	,, 0	8 0
Petroleum refined ,, ...	0	0	6½	,, 0	0 6½
Tar, Stockholm ... per barrel	1	6	0	,, 1	10 0
Do., Archangel ,, ...	0	19	6	,, 1	0 0
Linseed Oil ... per gal.	0	2	2	,,	—
Baltic Oil ,, ...	0	2	5	,,	—
Turpentine ,, ...	0	2	1	,,	—
Putty (Genuine Linseed Oil) ... per cwt.	0	9	0	,,	—
Pure Linseed Oil "Stority" Brand ,,	0	10	0	,,	—

GLASS (IN CRATES).

English Sheet Glass :	15oz.	21oz.	26oz.	32oz.
Fourths	2d. ...	3d. ...	3⅝d. ...	4⅝d.
Thirds	2½d. ...	3½d. ...	4½d. ...	5⅝d.
Fluted Sheet	2⅝d. ...	3⅝d. ...	6½d. ...	7d.
Hartley's English Rolled Plate :	⅛in.	3/16in.	¼in.	
	2½d.	... 2⅝d.	... 3d.	
Figured Rolled d Repoussine		White.	Tinted	
		3½d.	... 5d.	

VARNISHES, &c.

	Per gallon.
Fine Pale Oak Varnish	£0 8 0
Pale Copal Oak	0 10 0
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard drying Oak, for seats of churches	0 14 0
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flatting Varnish	0 18 0
White Copal Enamel	1 1 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 0
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 0

TRADE NOTES.

The Boyle system of ventilation, natural enhanced, Boyles latest patent air-pump ventilators and cowls, has been applied to Fusehill Workhouse, Carlisle.

The Bishop Auckland Tindle Crescent Hospital is being supplied with Shorland's double-fronted patent Manchester stoves which revolving smoke flues patent Manchester grates patent exhaust roof ventilators and panel inlet ventilators by Messrs. J. H. Shorland and Brother, Ltd., of Farnsworth, Manchester.

The plans of Mr. F. Howarth, M.S.A., have been adopted for the new day and Sunday schools which are to be erected at Riddlesden avenue, Preston. The estimated cost of the work is £4,000.

The new town hall at Clare, West Suffolk, built on the site of the old corn exchange, has been formally opened. The architect was Mr. P. M. Beaumont, M.S.A., of Mablon, and the contractors were Messrs. G. Grimwood and Sons, of Sudbury. The outlay has been £1,050.

The urban district council of Clacton-on-Sea have decided to carry out themselves the work of building the amphitheatre, which is to hold the bandstand in consequence of the unexpected high prices of the various tenders. The surveyor's estimate of the work is £11,500, which is nearly £3,500 below the lowest tender.

At the annual meeting of the Birmingham Corporation the Lord Mayor introduced the report of the General Purposes Committee, which recommended that the Finance Committee should be instructed to borrow £66,157 for the completion of the councilhouse extension. This proposal was criticised by several members, and an amendment was eventually carried referring the matter back to the committee with instructions to furnish the council with further and better particulars with regard to the amounts paid for fittings and furniture, and to the architects, quantity surveyors, and clerks of works.

Telephone DALSTON 1 ...

OGILVIE & CO. Many years connected with the late firm of W. H. LASCELLES & CO., of Bunhill Row.

Mildmay Avenue, ISLINGTON, N.

EXPERTS in HIGH-CLASS JOINERY.

ALTERATIONS & DECORATIONS. ESTIMATES FREE

FOR

Olivers' Seasoned Hardwoods,

APPLY TO—

WM. OLIVER & SONS, Ltd.,

120, Bunhill Row, London, E.C.

TENDERS.

*** Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

BRISTOL.—For the erection of Royal Colonial Institute, Whiteladies-road, Clifton. Messrs. Bridgman and Bridgman, A.R.I.B.A., M.S.A., Bristol, Torquay, and Paignton, architects and surveyors. Quantities by Mr. W. G. Seally Harris, Paignton :—

Long, J., and Son, Bath	£5,496	0	0
Cowlin, W., Bristol	5,300	0	0
Thomas and Son, Bristol	4,850	0	0
Pollard, W. H., and Son, Bridgwater	4,691	0	0
Pittard and Son, Langport ...	4,495	0	0
Wilkins, R., and Son, Bristol* ...	4,150	0	0

* Accepted—plus £350 for proposed extension of the building.

EUSTON-ROAD, N.—For the erection of the new building, for the Hearts of Oak Benefit Society. Messrs. Nicol and Nicol, 117, Colmore-row, Birmingham, architects. Mr. C. W. Brookes, F.S.I., A.R.I.B.A., Vernon House, Bloomsbury, quantity surveyor. Details of the ferro-concrete work supplied by Mr. G. F. Wells —

Contract No. 1.—Excavations:—

Mowlem, G., and Co.	£2 985	0	0
Gude and Son	2 827	0	0
Trollope and Colls	2 800	0	0
Fortesque and Son	2,772	0	0
Holland and Hannen, and Cubitts, Ltd.	2,727	0	0
Boyer	2,680	0	0
Cattermole and Son	2,660	0	0
Godson and Son (accepted) ...	2,525	0	0

For the building:—

					Months.
Cowlin, W. and Son ..	£12,015	0	0	...	18
Willcock, H., and Co.	39,450	0	0	...	To be arranged
Perry and Co., Ltd. ...	38,308	0	0	...	Two years
Thompson, J., & Co....	37,763	0	0	...	—
Patman & Fotheringham, Ltd.	37,582	0	0	...	To be agreed
Carmichael, J. ...	37,582	0	0	...	17
Kingerle and Sons ...	37,370	0	0	...	20
Smith, J., and Sons ...	37,179	0	0	...	20
Lorden, W. H., & Sons	36,853	0	0	...	16
Holland and Hannen and Cubitts, Ltd. ...	35,666	0	0	...	To be arranged
McLaughlin & Harvey, Ltd.	35,590	0	0	...	18
Dove, Bros.	35,795	0	0	...	20
Wallis, G. D., & Sons, Ltd.	35,530	0	0	...	18
Leslie and Co.... ...	35,284	15	10	...	16
Godson, G., and Son	34,998	0	0	...	18
Prestige and Co. ...	34 900	0	0	...	18
Trollope and Colls ...	34,580	0	0	...	20
Bowens, J., and Sons	34,463	0	0	...	15
Blake, W. E., Ltd. ...	33,997	0	0	...	To be agreed
Williams, H. J., Ltd.	33,957	0	0	...	16
Higgs and Hill ...	33,894	0	0	...	18
Foster and Dicksee*...	33,333	0	0	...	16

* Accepted.

EPSOM.—For the installation of heating and hot-water plant at the eleventh asylum, for the London County Council —

	A.	B.
Haden, G. N., and Sons, Trowbridge—	£26,194 0 0 ...	—
Ashwell and Nesbit, Leicester—	24,467 0 0 ...	£25,697 0 0
Strode and Co., St. Pancras—	23,890 0 0 ...	{ 26,290 0 0 / 26,475 0 0
Griffiths, D., and Co., Liverpool—	23,293 12 0 ...	23,206 14 0
Korting Bros., Westminster—	22 789 7 0 ...	—
Brightside Foundry and Engineering Co., Sheffield—	*21,760 0 0 ...	21,760 0 0

* Accepted.

A.—To asylums engineer's specification. B.—Tenderer's alternative schemes.

FORT AUGUSTUS.—For opening and closing 1,000yds. of pipe track, providing and laying 11 tons of 2½in. cast-iron pipes, and construction of concrete reservoir at the Inverness-shire sanatorium, Fort Augustus. Mr. J. Wedderspoon, C.E., The Castle, Inverness, engineer:—

Smith, J., Fort Augustus	£395 6 8
Clark and Chapman, Aberdeen ..	351 6 0
Thomson, A., & Co., Fort Augustus	345 0 0
Urquhart, F., Beauly	284 5 1
Macdonald, T., Inverness* ...	279 13 10

* Accepted.

FRYSTON.—For the erection of ten houses at Fryston, for the Wheldale Coal Co., Ltd. Messrs. Garside and Pennington, Pontefract and Castleford, architects and surveyors. Accepted tenders:—

Builder:—	
Wilson, G. H., Castleford	£1,146 1 7
Joiner:—	
Gallagher, J. L., Castleford ...	533 0 0
Plumber:—	
Nicholson, R., Castleford	216 3 9
Plasterer:—	
Shaw, J., Pontefract	135 10 0
Slater:—	
Allison, W. P., Castleford	130 0 0

FULBOURN.—For heating the greenhouses at the asylum, for the visiting committee:—

Macintosh and Son (accepted) ...	£98 10 0

HERTFORD.—For constructing water mains, for the corporation. Mr. J. H. Jevons, A.M.I.C.E., The Castle, Hertford, borough engineer:—

Ekins and Co., Hertford	£3,655 0 0
Catley, A. S., London	3,258 0 0
Bell, G., and Son, Tottenham ...	3 088 0 0
Ball, C., Letchworth (accepted) ...	2,910 0 0

ISLINGTON, N.—For new school for mentally-defective children, Colebrooke-row, for the London Education Committee:—

Bowyer, J. and C., Upper Norwood	£8,864 0 0
Galbraith Bros., Ltd., Camberwell Green	8,861 15 8
Lawrence, W., and Son, Finsbury-circus	8,748 0 0
Downs, W., Walworth-road ...	8,668 0 0
Patman and Fotheringham, Ltd., Islington	8,443 0 0
Symes, A. E., Stratford	8,383 0 0
Chessum, J., and Sons, 7a, Southplace	8,370 0 0
McCormick and Sons, Ltd., Essex-road	7,897 0 0
Willmott, J., and Sons, Hornsey*	7,858 0 0

Architect's estimate, £8,391.

* Accepted to revised specifications at £7,348.

KENNINGTON.—For redrainage at school, Priory grove, for the London Education Committee:—

Wallis, G. E., and Sons, Ltd., Haymarket	£830 0 0
King, W. A., Brixton	805 0 0
Finch, B., and Co., Ltd., Lambeth	800 0 0
Smith, F., and Co., Abchurch-lane	750 0 0
Bowyer, J. and C., Ltd., Upper Norwood	749 0 0
Hollingsworth, H. H., Peckham ..	744 0 0
Triggs and Co., Clapham	730 0 0
Akers, W., and Co., Ltd., South Norwood	677 0 0
Beattie, W., Lower Grosvenor-place (accepted)	675 0 0

Architect's estimate, £750.

(*Continued on page XII.*)

LIST OF COMPETITIONS OPEN.

Nov. 18—Destructor, Schaerbeek-lez-Bruxelles		Service de l'Ingenieur, 30, Rue de la Ruche, Brussels.
,, 22—Laying Out Two Gardens, St. Annes-on-the-Sea	£50, £25 (each competition)	T. Bradley, Clerk, Public Offices, St. Annes-on-the-Sea.
,, 22—Masonic Hall, &c., Bridge-street, Manchester		R. Verney Clayton, 9, Cooper-street, Manchester.
,, 24—Two New Elementary Schools, Chelmsford (Architects Practising in the County of Essex only. Twelve Architects to be Selected for Second Limited Competition)		G. Melvin, Town Clerk, Mun. Offices, London-rd., Chelmsford.
,, 29—Band Pavilion, West Cliff, Folkestone (limit of cost £20,000). (Edwin T. Hall, F.R.I.B.A., 34, Bedford-square, W.C., Assessor)		A. F. Kidson, Town Clerk, Folkestone.
Dec. 29—New Offices for Board of Trade, &c., Whitehall Gardens, S.W. [R. Blomfield, M.A. (Oxon), A.R.A., P.R.I.B.A. J. Belcher, R.A., and Sir Aston Webb, C.V.O., C.B., R.A., Assessors] Sketch Designs, ten will be Selected,		
1914. with £300 Honorarium each		The Secretary, H.M. Office of Works, Storey's Gate, S.W.
Jan. 2—Manchester Royal Exchange, Additional New Buildings and Alterations. Open to all architects in U.K. Not more than 12 architects of repute have been specially invited; each of whom will receive one hundred guineas. The three selected architects will receive one hundred guineas each. Author of design placed first will be appointed. (J. S. Gibson, F.R.I.B.A., Assessor)		Rich. J. Allen, Master, Royal Exchange, Manchester.
,, 20—Masonic Temple, Toronto (Estimated cost, about £51,400)	Five unsuccessful competitors to receive 750dol., 500dol., and 250dol. respectively	W. H. Best, 181, Avenue-road, Toronto.
Feb. 1—Municipal Technical Institute, Pool Meadow, Coventry		G. Sutton, Clerk, Education Office, 44, Bayley-lane, Coventry.
,, 15—Savings Bank, Verona (Five Assessors)	£1,200, £600	The Savings Bank, 1, Via Garibaldi, Verona.
Mar. 20—Public Museum and Art Gallery, Belfast (John J. Burnet, A.R.S.A., LL.D., Assessor)	Selected Architect to carry out work; second, £100; third, £75; fourth, £50	R. Meyer, Town Clerk, City Hall, Belfast.
April 2—Departmental and Courts Buildings, Ottawa (T. E. Collcutt, J. H. G. Russell, and J. O. Marchand, Assessors). Double Competition, five unsuccessful competitors in second to receive 3,000dol. each		R. C. Desrochers, Department of Public Works, Ottawa, Ont.
No date—Wesleyan Church, Findochty		Rev. J. Whitaker Bond, Wesleyan Manse, Portessie, Buckie.
do. —Technical School, Cookstown, Ireland	10gs.	L. Bradley, Director, Mount Royal, Dungannon.
do. —Cottages, Loughton, Bucks		C. W. Powell, Clerk, Newport Pagnell.

LIST OF TENDERS OPEN.

BUILDINGS.

Nov. 14—Shed at Electricity Works, Rathmines	Urban District Council	F. P. Fawcett, Clerk, Town Hall, Rathmines.
,, 15—Teacher's House, Council School, Stockenham Huccombe	Devon Education Committee	The Architect's Office, 1, Richmond-road, Exeter.
,, 15—Pendomer House, Alterations to, West Walks Dorchester	Dorset Municipal Charities	F. T. Maltby, Archt., Dorchester.
,, 15—Infectious Diseases Hospital, Sandy-lane, Hindley	Urban District Council	O. P. Abbott, Council Offices, Hindley.
,, 15—School (738 places), Newbiggin Colliery	Northumberland Education Com.	C. Williams, Sec., Moot Hall, Newcastle-on-Tyne.
,, 15—Council Schools, Works at, Zeal Monachorum	Devon Education Committee	The Architect's Office, 1, Richmond-road, Exeter.
,, 15—Presbyterian Church, Willington, co. Durham		J. W. Hays, Archt., Wingate, co. Durham.
,, 15—Swimming Bath, Stalybridge	Corporation	J. N. White, Boro' Sur., Town Hall, Stalybridge.
,, 16—Hopital Saint-Jean, Addition to, Maristraat, Bruges		Administration, 4, Rue des Chartreuses, Bruges, Belgium
,, 17—Cottages (16), Penvin, Pershore	Rural District Council	Dicks and Waldron, Archts., Evesham.
,, 17—Isolation Hospital, Additions to, Shirley	Southampton Corporation	The Borough Engineer, Southampton.
,, 17—Eight Workmen's Cottages, Beach-street, Dover	Town Council	W. C. Hawke, A.M.I.C.E., Maison Dieu House, Dover.
,, 17—Technical School, Extensions to, Leigh, Lancs	Town Council	H. Littler, 16, Ribblesdale-place, Preston.
,, 17—Fire Station, Additions to, Alroy-road, Harringay, N.	Hornsey Town Council	E. J. Lovegrove, Boro' Eng., Municipal Offices, Highgate, N.
,, 17—Two Cottages, Llantilio Crossenny	County Council	W. Tanner, F.S.I., County Sur., Newport, Mon.
,, 17—Isolation Hospital, Hinckley		Heaton and Walker, Archts., 3, The Boro, Hinckley.
,, 17—Gendarmes' Barracks, Arlon		Direction des Ponts, 4, Rue de l'Athenee, Brussels.
,, 17—Ty-Person Farm, Alterations to, Llantwit Fardre	Glamorgan County Council	The Clerk, Glamorgan County Hall, Cardiff.
,, 17—Branch Workhouse, Repairs to, New Malden	Kingston-on-Thames Guardians	C. Dash, Clerk, Union Offices, Coombe-rd., Kingston-on-Thames.
,, 17—Workhouse, Alterations at, Tuginutton-lane, Farnborough	Guardians	F. Smith, A.R.I.B.A., Parliament Mansions, Victoria-st., S.W.
,, 17—Girls' School, Gouvy		M. Cupper, Archt., Lumerie, Luxemburg.
,, 17—Two Cottages, Asparina, Cumberland		W. G. Scott and Co., Archts., 2, Park-lane, Workington.
,, 17—Shop in Covered Market, Alterations to, Warrington	Corporation	The Borough Engineer's Office, Town Hall, Warrington.
,, 17—Infants' School, Higginshaw	Oldham Education Committee	Winder and Taylor, Archts., 61, Union-street, Oldham.

BUILDINGS *continued.*

Nov.	18—Removing School Galleries, Chislehurst-rd., Orpington	Kent Education Committee	W. H. Robinson, Archt., Sessions House, Maidstone.
,,	18—Offices, Alterations to, Devon-place, Newport, Mon.	Great Western Railway Co.	A. E. Bolter, Sec., Paddington Station, W.
,,	18—Schools, Cloakrooms at, Grimsby	Education Authority	H. C. Scaping, Archt., Court Chambers, Grimsby.
,,	18—Council School, Additions at, East Howle	Durham County Council	W. Rushworth, Shire Hall, Durham.
,,	18—Workmen's Dwellings, Rectory Estate, Rushden	Urban District Council	W. B. Madin, Sur., Council Buildings, Rushden.
,,	18—Tramway Offices, Additions to, Seaview-road, Wallasey	Corporation	W. H. Travers, A.M.I.C.E., Boro' Eng., Falkland-rd., Egremont.
,,	18—Seven Working Class Houses, Meare	Wells Rural District Council	Petter and Warren, Archts., Yeovil.
,,	18—Bansonmoor Farm, Alterations, &c., to, March	Isle of Ely County Council	C. E. F. Copeman, Clerk, County Hall, March.
,,	18—Two Cottages, Alterations to, Heckmondwike	Liversedge Urban District Council	A. Rothera, M.I.M.C.E., Sur., Liversedge.
,,	18—Subways at Sick Asylum, Bow, E.	Poplar Sick Asylum District	J. and W. Clarkson, Archts., 136, High-street, Poplar, E.
,,	18—Inland Revenue Offices, Pulling Down, Birmingham	H.M. Works Commissioners	J. Tosh, H.M. Office of Works, 42, Paradise-street, Birmingham.
,,	18—Steps and Billiard-hall, Aberaman	Cinema, Ltd.	Johnson and Richards, Archts., Merthyr Tydfil.
,,	18—Council School (560 places), High Spen	Durham County Council	Liddle and Browne, Archts., Aldon-square, Newcastle-on-Tyne.
,,	18—Repairing Tower of Church, Talland	Urban District Council	J. Sansom, F.R.I.B.A., Liskeard.
,,	19—Workmen's Houses (22), Wellington, Salop	Secretary of State for War	J. Littlewood, Clerk, Bank Chambers, Wellington, Salop.
,,	19—Married Soldiers' Quarters, Newbridge, Ireland	South Kirkby, &c., Collieries, Ltd.	The Director of Barrack Construction, 80, Pall Mall, S.W.
,,	19—Dwelling Houses (62), Fitzwilliam, Hemsworth	Lancashire and N.W. Joint Rlys.	Garside and Pennington, Archts., Pontefract.
,,	19—Goods Shed, Fenrecowles	British and Foreign Sailors' Society	The Engineer's Office, Hunt's Bank, Manchester.
,,	19—Prince of Wales Sailors' Institute, Holyhead	Corporation	Owen and Thomas, Archts., Exchange Buildings, Holyhead.
,,	20—Pemberton Hospital, Additions to, Billinge-road, Wigan		A. T. Gooseman, Boro' Eng., King-street West, Wigan.
,,	20—Residence, Lime-grove, Newark	Listowel Rural District Council	Sheppard and Lockton, Archts., Bargate, Newark-on-Trent.
,,	20—Cottages, Dirba West and Kylattalln	West Riding Education Committee	M. O'Connell, Clerk, Listowel.
,,	21—School, Alterations to, Stourton, Rothwell	School Board	The Education Architect, County Hall, Wakefield.
,,	21—School, Addition to, Gallowhill, Alford		D. and J. R. M'Millan, Archts., 105, Crown-street, Aberdeen.
,,	21—Eight-Roomed Bungalow, Brigsteer, Kendal	Warwickshire Terr. Force Assoc.	S. Shaw, F.R.I.B.A., Kendal.
,,	21—Headquarters, Wood-lane, Harborne		S. N. Cooke, 117, Colmore-row, Birmingham.
,,	21—Renovation of Mount Zion Church, Troedyrhiw	Education Committee	W. Dowdeswell, M.S.A., Treharris.
,,	22—School, Nansen-street, Ardwick, Manchester	Cornwall Terr. Force Assoc.	The Education Offices, Deansgate, Manchester.
,,	22—Rifle Range, Bishop's Wood, near Truro	Corporation	O. R. Caldwell, Archt., Penzance.
,,	22—Belvedere Wash-house, Extension of, London-rd., Glasgow		J. Lindsay, Town Clerk, Glasgow.
,,	22—Residence, Towan Cross, near Porthtowan	Dorset Terr. Force Assoc.	A. Cornelius, M.S.A., Archt., Truro.
,,	22—Drill Hall, Chidecck	Education Committee	F. T. Maltby, Archt., Dorchester.
,,	22—East End Council School, Additions to, Pembroke		K. McAlpin, Archt., Pembroke Dock.
,,	22—Two Cottages, Grangegreen	Corporation	P. Fulton, Archt., Forres.
,,	24—Police Station, Dacre-street, Middlesbrough	Ulster Bank Directors, Ltd.	S. E. Burgess, M.I.C.E., Municipal Buildings, Middlesbrough.
,,	24—Banking Premises, Kilkenny	Corporation	Blackwood and Jury, MM.R.I.A.I., 41, Donegall-place, Belfast.
,,	24—Electricity Station, High-street, Worthing	Blean Rural District Council	J. K. Allerton, Town Clerk, Municipal Offices, Worthing.
,,	24—Engine House, May-street Cross, Reculver	Urban District Council	F. A. Ward, Eng., Roseneath, Eddington.
,,	24—Swimming-bath, Finchley		A. W. S. Cross, F.R.I.B.A., 46, New Bond-street, W.
,,	24—Howell's School, Dormitories at, Llandaff	Sedgefield Rural District Council	G. E. Halliday, F.S.A., 19, Castle-street, Cardiff.
,,	26—Houses (25), Trimdon Grange	Edmonton Guardians	J. Stones, Sur., Sedgefield.
,,	26—Chase Farm Schools, Alterations to, Enfield	Co-Operative Society, Ltd.	J. C. S. Mummery, Archt., 13, Fitzroy-square, W.
,,	27—Ware Rooms, Wrexham	H.M. Works Commissioners	G. Morrison, Archt., 16, Talbot-road, Wrexham.
,,	27—Labour Exchange Offices, Alterations to, Manchester	Lexden and Winstree Sub-Com.	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
,,	28—School (120 places), Messing, Essex		F. Whitmore, County Archt., 73, Duke-street, Chelmsford.
,,	28—Lunatic Asylum, Woensel, Holland		The Clerk, Prov. Authorities of Noordbrabant, Hertogenbosch.
Dec.	1—Houses and Farm Buildings, Ridley Estate, Nantwich		W. H. Lancaster, Land Agent, 49, Northgate-street, Chester.
,,	1—Liberal Club, Additions to, Spondon	Rural District Council	F. S. Antliff and Son, Draycott, near Derby.
,,	1—Isolation Hospital, Additions to, Billericay	East Stow Rural District Council	H. R. Bird, St. Thomas's Gate, Brentwood.
,,	2—Working-class Cottages, Combs, Old Newton, & Wetherden	Secretary of State for War	H. H. Simon, Stowmarket.
,,	2—Lecture Hall, &c., Staff College, Camberley	Guardians	The Director of Army Contracts, War Office, S.W.
,,	3—Workhouse, Buildings at, Pleck-road, Walsall		H. E. Lavender and Son, Archts., Bridge-street, Walsall.
,,	5—Independent Chapel, Alterations to, Bryn	Kent Education Committee	D. J. Jones, M.S.A., Talbot-road, Port Talbot.
,,	5—Special Subjects Building, Edenbridge		M. H. Robinson, M.S.A., Archt., Sessions House, Maidstone.
,,	6—Two Cottages, Withycombe, Tedburn St. Mary		J. B. Mann, Withycombe.
,,	6—Debt Control Offices, Casablanca, Morocco	Chester-le-Street R.D.C.	President de la Commission, Dar En Niaba, Tangier.
,,	15—Houses (113), Pelton Village		J. H. Mole, Sur., Chester-le-Street.
No date	—Wesleyan Sunday School, Horbury		Garside and Pennington, Archts., Pontefract.
do.	—Two Houses, Scotchman-lane, Batley	Cinderella Club	A. Jackson, Howley Park Colliery, Batley.
do.	—Holiday Home, Bradford		Walker and Collinson, Archts., Exchange Buildings, Bradford.
do.	—New Co-operative Stores, Wheatley Hill, Co. Durham	Watford Co-Operative Society, Ltd.	J. Wilson Hays, Architect, Co. Durham.
do.	—Business Premises at Mason's-avenue, Wealdstone		C. P. Ayres, Archt., 5, Platt's-avenue, Watford.
do.	—Territorial Headquarters, Pocklington		Wellsted, Dosser, & Wellsted, & A. Easton, Assoc. Archts., Hull.
do.	—Co-Operative Store, Wheatley Hill, co. Durham	Monmouthshire Terr. Force Assoc.	J. W. Hays, Archt., Wingate, co. Durham.
do.	—Miniature Rifle Range, Abercarn		Habershon, Fawckner, & Co., Archts., High-st., Newport, Mon.
do.	—Zion Independent Chapel, Alterations to, Morley	Band Club	J. Hardcastle, Sec., Rooms-lane, Morley.
do.	—Club Premises, New-road, Earby		W. H. Mann, 16, Grove Hall-drive, Beeston, Leeds.

ELECTRICAL PLANT.

Nov.	14—Arc Lamps, Hammersmith	Borough Council	G. G. Bell, Boro' Elec. Eng., 85, Fulham Palace-road, W.
,,	15—Electrical Installation at Technical College, Bradford	Education Committee	The City Architect, Town Hall, Bradford.
,,	15—Overhead Electrical Equipment, Melbourne	Suburban Railways	Merz and McLellan, Engs., 32, Victoria-street, S.W.
,,	15—Installation at Working Men's Club, Swansea		H. K. Benson, Metal Exchange, Fisher-street, Swansea.
,,	17—Plant, Pernik State Coal Mine, Sofia	Urban District Council	Commission d'Adjudication, Sofia, Bulgaria.
,,	18—Cable, Aldershot		F. Garside, Electricity Works, Laburnum-road, Aldershot.
,,	18—Electric Crane for Discharging Coal, Valencia Harbour		Com. Intel. Branch Board of Trade, 73, Basinghall-st., E.C.
,,	19—Rectangular Dry Cells (2,000) for Batteries, Perth	Urban District Council	The Deputy Postmaster-General, Perth, Western Australia.
,,	19—Diesel Engine Set, Rhyl		E. H. Wright, Electricity Works, Rhyl.
,,	24—Electrically-driven Sewage Distributors, Dalmarnock	Electricity Department	J. Lindsay, Town Clerk, City Chambers, Glasgow.
,,	24—Rotary Converter, Wolverhampton	Visitors Committee	S. T. Allen, Chief Eng., Commercial-road, Wolverhampton.
,,	24—Electric Wiring, County Asylum, Rainhill	Electric Lighting Department	J. Gornall, Clerk, County Asylum, Rainhill.
,,	24—Transformers, Launceston, Tasmania		R. J. Strike, A.M.I.E.E., City Eng., Launceston, Tasmania.
,,	24—Electric Light Fittings, Town Hall, &c., Johannesburg	London County Council	E. W. Curlin and Co., Agents, St. Dunstan's Hill, E.C.
,,	26—Electrical Installation, Trade School, Hammersmith		G. W. Humphreys, County Hall, Spring Gardens, S.W.
Dec.	1—Rectangular Dry Cells (2,500), Hobart, Tasmania	Victorian Railways Com.	The Deputy Postmaster-General, Hobart, Tasmania.
,,	3—Electric Motor, Melbourne	Municipal Authorities	The Secretary, Victorian Railways Offices, Melbourne.
,,	4—Two Elec. Passenger Lifts at Industrial School, Antwerp	City Corporation	The Burgomaster, Hotel-de-Ville, Antwerp.
,,	11—Switchboard, Wellington, N.Z.		The Electrical Engineer, Harris-street, Wellington, N.Z.
,,	16—Switchboard, Melbourne	Postmaster's-General's Department	The Deputy Postmaster-General, Melbourne, Australia.
,,	31—Insulators, Brisbane	Municipal Authorities	The Commonwealth Office, 72, Victoria-street, London, S.W.
Jan.	26—Six Electric Canes, Bassin-Canal Extension, Antwerp		The Burgomaster, Hotel-de-Ville, Antwerp.
Mar.	18—Switchboards, Sydney, N.S.W.		The Deputy Postmaster-General, Sydney, New South Wales.

ENGINEERING.

Nov.	14—Aqueducts, Calmpthout	Belgian State Railways	The Departement des Voies et Travaux, Antwerp.
,,	15—Section of Direct Railway, Minturno-Naples		The Italian State Railways Authorities, Rome.
,,	15—Lancashire Boiler, New Quay-street Baths, Manchester	Baths Committee	The City Architect, Town Hall, Manchester.
,,	15—Steel Bridge over Rumney, Bedwas		The County Surveyor, Newport, Mon.
,,	15—Refuse Destructor, Sutton Coldfield	Corporation	W. A. H. Clarry, A.M.I.C.E., Council House, Sutton Coldfield.
,,	16—Bridges and Subways, Forest and Forest-formation	Belgian State Railways	The Department de Voies et Travaux, Bruxelles.
,,	17—Reservoir Work, Whitemoor, Foulridge	Burnley Rural District Council	H. Pritchard, 18, Nicholas-street, Burnley.
,,	17—Calorifiers at Sanatorium, Plas Uchaf, Abergele	South Manchester Guardians	D. Bloomfield, Clerk, Guardians' Office, All Saints', Manchester.
,,	18—Bored Well and Pumping Station, Combs	East Stow Rural District Council	J. Taylor & Sons, Civil Engineers, Caxton House, Westminster.
,,	18—Water Main (½ miles), Ashchurch, Tewkesbury	Rural District Council	H. A. Badham, Clerk, Tewkesbury.
,,	19—Engineering Labour (Three Years), Dover	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate S.W.
,,	19—Heating Library and Chapels in Cemetery, St. Helens	Corporation	A. W. Bradley, M.I.C.E., Boro' Eng., St. Helens, Lancs.
,,	2—Fire Appliances, Workhouse Infirmary, Ford	Devonport Guardians	A. Gard, 19, St. Aubyn-street, Devonport.
,,	21—Heating Installation at School, Smethwick	Education Committee	F. J. Gill, Archt., Lloyd's Bank Chambers, Smethwick.
,,	21—Bridge and Tanks, Pepinster and Melreux Stations	Belgian State Railways	The Department des Voies et Travaux, Liege.
,,	22—Reconstructing Ferry Bridge, Walthamstow	Essex County Council	P. J. Sheldon, M.I.C.E., County Sur., County Offices, Chelmsford.
,,	24—Three Ventilating Hospital Stoves at Asylum, Rainhill	Visitors Committee	J. Gornall, Clerk, County Asylum, Rainhill, Lancs.
,,	24—Waterworks Pumping Plant, Canberra, N.S.W.	Commonwealth Department	The Secretary, Dept. of Home Affairs, Russel-st., Melbourne.
,,	24—Laundry Machinery at Asylum, Rainhill	Visitors Committee	J. Gornall, Clerk, County Asylum, Rainhill, Lancs.
,,	24—Five Steam Road Rollers, Canea	Cretan Government	The Administration Generale, Canea, Crete.
,,	24—Pumping Plant, East-street, Epsom	Urban District Council	W. V. Graham, M.I.C.E., 5, Queen Anne's Gate, Westminster.
,,	24—Cooking Apparatus at Asylum, Rainhill	Visitors Committee	J. Gornall, Clerk, County Asylum, Rainhill, Lancs.
,,	26—Water Supply, Purleigh	Maldon Rural District Council	A. W. Freeman, Clerk, Gate-street, Maldon.
,,	28—Two Water-tube Boilers, Manchester	Electricity Committee	F. E. Hughes, Sec., Electricity Dept., Town Hall, Manchester.
,,	29—Refuse Destructor, East Grinstead	Urban District Council	W. E. Woollam, Eng., East Grinstead.
Dec.	1—Machinery, Christiania	Norwegian Main Railway	Overbestyrerens Kontor, Norsk Hoved-Jernbane, Christiania.
,,	1—Iron and Steel Pontoon, Malagas, Cape Province		The Chief Inspector of Roads, 3, Wale-street, Cape Town.
,,	2—Retort Fittings, Grimesthorpe Works, Sheffield	United Gaslight Co.	J. W. Morrison, M.I.C.E., Commercial-street, Sheffield.
,,	5—Two Lifts, Municipal Ecole Industrielle, Antwerp		The Secretariat, Hotel de Ville, Antwerp.
,,	8—Steel Bridges, Cooperabung and Piper's Creeks	Public Works Dept., N.S.W.	The Public Works Department, Sydney, N.S.W.
,,	15—Water Supply, Rio Grande, Brazil	Municipality	Sr. Coronel Intendente Municipal, Rio Grande do Sul.

ENGINEERING—*continued.*

Dec.	15—Pumping Machinery, Sydney	Water Supply & Sewerage Board	The President, 341, Pitt-street, Sydney, N.S.W.
,,	18—High-lift Turbo Pumps, Hastings, N.Z.	Borough Council	The Town Clerk, Hastings, New Zealand.
,,	26—Railway Workshops, Santiago de Chile		Sub-Secretaria del Ministerio de Ferrocarriles de Chile, Santiago.
,,	30—Basin Antwerp	Municipal Authorities	The Burgomaster, Hotel-de-Ville, Antwerp.
,,	30—Railway between La Quiaca and Tupiza, La Paz		Ministerio de Gobierno y Fomento, La Paz, Bolivia.
Jan.	7—Pumping Bath, Glen, Orange Free State	Union Tender Board	The Director of Irrigation, P O. Box 309, Pretoria.
,,	10—Destructor, Shaw	Crompton Urban District Council	F. F. Gartside, Sur., Town Hall, Shaw, near Oldham.
,,	13—Aerial Ropeway, Brisbane	Metropolitan Water Board	The Secretary, Albert-street, Brisbane, Queensland.
No date	—Tunnelling through Beds of Limestone, Maidstone		Tunnell, Smith's Bookstall, Maidstone West.

FENCING AND WALLS.

Nov.	14—Fencing, Sim Carr-lane, Shibden	Halifax Corporation	J. Lord, M.I.C.E., Boro' Eng., Town Hall, Halifax.
,,	17—Setting Back Boundary Wall, West Didsbury	Manchester Corporation	The Surveyor, Town Hall, West Didsbury.
,,	17—Iron Fencing, Lower-place, Harlesden	Willesden District Council	O. C. Robson, M.I.C.E., Dyne-road. Kilburn, N.W.
,,	17—Iron Fencing Dog-lane, Neasden	Willesden District Council	O. C. Robson, M.I.C.E., Dyne-road, Kilburn, N.W.
,,	18—Fencing Materials, London, E.C.	Bombay, Baroda, and C.I. Railway	C. Crommelin, Sec., 110, Bishopsgate, E.C.
,,	19—Fencing 22 Workmen's Houses, Wellington	Urban District Council	J. W. Littlewood, Clerk, Bank Chambers, Wellington, Salop.
,,	21—Homes for Aged Poor, Shotley Bridge	Gateshead Guardians	G. Craighill, Clerk, Poor Law Union Offices, Gateshead.
No date	—Rebuilding Wall, Swinton, Yorks	Urban District Council	H. Birks, Sur., Council Offices, Swinton, Yorks.

FURNITURE AND FITTINGS.

Nov.	15—Desks (Two Years), Durham	Education Committee	A. J. Dawson, Clerk, Shire Hall, Durham.
,,	20—New Infirmary, Carnarvon	Guardians	J. H. Thomas, Clerk, 14, Market-street, Carnarvon.
,,	26—Desks to Public Schools (Three Years), Hertford	County Council	The Clerk, Education Department, Hertford.

PAINTING.

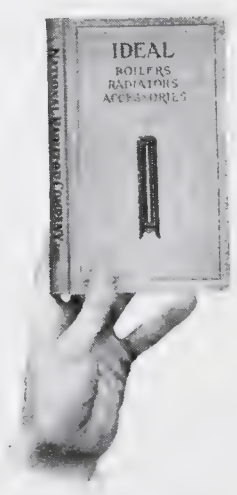
Nov.	15—House, 63, Lawkholme-lane Keighley		J. C. Dawes, Chief Sanitary Inspector, Town Hall, Keighley.
,,	17—Girls' Secondary School, Fawcett-road, Southsea	Education Committee	A. H. Bone, Archt., Cambridge Junction, Portsmouth.
,,	17—Schools, Portsmouth	Education Committee	A. H. Bone, Archt., Cambridge Junction, Portsmouth.
,,	19—Sewage Disposal Pumping Station, Bracebridge	Worksop Urban District Council	G. H. Featherston, Clerk, Council Offices, Worksop.
,,	19—Schools, Hull	Education Committee	J. T. Riley, Sec., Education Office, Albion-street, Hull.
,,	21—Council Schools, Pentre	Rhondda Urban District Council	J. Rees, Hillside Cottage, Pentre.
,,	21—Workhouse, Pontefract	Guardians	T. J. Amies, Clerk, Union Offices, Pontefract.
,,	28—Caerau Library, Maesteg		O. D. Davies, Archt , 8, Court-street, Maesteg.

ROADS AND STREETS.

Nov.	15—Paving Union-street, Hightown, Whitwood Mere	Urban District Council	A. Hartley, Consulting Sur., County Chambers, Castleford.
,,	15—Making-up Pendarves-road, Penzance		O. Reginald Caldwell, Sur., Penzance.
,,	17—Improvement Works, Woodstock-road and Armitage-road	Hendon Urban District Council	S. Slater Grimley, M.I.C.E., Council Offices, Hendon, N.W.
,,	17—Street Works, Edmonton	Urban District Council	C. Brown, A.M.I.C.E., Town Hall, Lower Edmonton.
,,	17—Making-up Green-lane, Hendon	Hendon Urban District Council	S. Slater Grimley, M.I.C.E., Council Offices, Hendon, N.W.
,,	17—Making-up Brewery-road, Spennymoor	Urban District Council	C. R. Spencer, Sur., Spennymoor.
,,	17—Street Works, Blackburn	Highways Committee	W. Stubbs, A.M.I.C.E., Municipal Offices, Blackburn.
,,	17—Paving Various Districts (Three Years), Bristol	Sanitary & Improvement Committee	L. S. Mackenzie, A.M.I.C.E., City Eng , 63, Queen-sq., Bristol.
,,	18—Street Works, St. Helens, Lancs	Corporation	A. Bradley, M.I.C.E., Boro' Eng., Town Hall, St. Helens.
,,	19—Road Works, Cholmeley Park, Hornsey	Town Council	E. J. Lovegrove, Boro' Eng., Municipal Offices, Highgate.
,,	19—Street Works, Chester-le-Street	Urban District Council	W. Ridley, Sur., Council Chambers, Chester-le-Street.
,,	19—Road Improvement, Belmont Village, near Bolton	Turton Urban District Council	V. W. Laithwaite, Sur., Council Offices, Bromley Cross, Bolton.
,,	20—Widening Main Road, Grindleford	Derbyshire County Council	J. W. Horton, A.M.I.C.E., County Sur , Derby.
,,	21—Street Works, Prestwich	Urban District Council	The Surveyor's Office, Council Offices, Prestwich, Lancs.
,,	21—Constructing Street, Shrewsbury	Corporation Act Committee	W. C. Eddowes, Boro' Sur., The Square, Shrewsbury.
,,	24—Making-up & Paving Fernwood-avenue, Streatham, S.W.	Wandsworth Borough Council	P. Dodd, M.I.C.E., 56, East-hill, Wandsworth, S.W.
,,	24—Street Works, Bacup	Corporation	W. H. Elce, Boro' Sur., Bacup.
,,	24—Making New Streets, Sidney College Estate, Cleethorpes		Thomas Lamming, 46, Victoria-street, Grimsby.
,,	24—Asphalt Paving of Public Streets, Madrid	Corporation	The Clerk, Council Offices, Madrid.
,,	24—Roadway Paving, London, S.E.	Camberwell Borough Council	W. Oxtoby, Boro' Eng., Town Hall, Camberwell, S.E.
,,	24—Flagging, &c., Main Road, Southowram	Urban District Council	J. F. Oates, Sur., Council Offices, Southowram.
,,	29—Widening Bishopsteignton-rd. and Mill-lane, Teignmouth	Urban District Council	F. W. Knight, Sur., Town Hall, Teignmouth.
Dec.	3—Street Works, Chesham	Urban District Council	P. C. Dormer, Eng., Council Offices, Chesham.
No date	—Macadamising Foster-street, Crossflatts, Bingley	Urban District Council	H. Bottomley, Eng., Bingley.

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Haswell Co-operative Provision Society, Ltd. Branch Wheatley Hill, Durham. Selected Design. Mr. J. Wilson Hays, Architect.

Ornamental Tile-Work.

METHODS AND MEMORANDA.

One of the most important things in connection with the practice of an architect is the habit of taking notes, which is, unfortunately, seldom done at present in a systematic and thorough manner. We do not refer here to notes taken in the ordinary course of business, and which cannot be dispensed with, but rather to those pertinent to building work in general, when useful information is stored up for future reference, or guidance. In our profession, as in every other, experience is the great teacher, and if the neophyte will only keep his mind receptive and his eyes open, to note all that his work brings him in contact with that may be of interest, a rich harvest of knowledge will be his, that cannot be garnered in any other way. Books on building construction do not exhaust the subject. Specifications supposed to be all-embracing are, after all, only collections of skeleton clauses to be interpreted by the experiences of the architect and the builder, so that, in the last resort, all engaged in building work must rely for the efficient discharge of their duties on that practical knowledge which each has acquired for himself. Plans and specifications are supposed to tell all worth telling about a building; but, suppose that the lawyer who drew up the contract had instructions to carry out the work with no other assistance than that of his clerk, in whose hands the drawings and specifications are placed, what would the result be?

Very little consideration will prove that beyond anything shown, or that can be shown on drawings, or described in specifications, to work efficiently, builders must have a practical knowledge of the work, and this can only be obtained by each individual for himself, and frequently by years of patient study and hard work, or shall we say, for the professional man, "studious application"? To write a specification and make drawings that would be intelligible to any who had never seen such documents before would be impossible. So that all our building contract documents are prepared on the supposition that they are for trained men, whose knowledge of the subject will enable them to supplement that given by the architect, whether by drawing or by writing. This fact is frequently lost sight of in lawsuits, and documents are supposed to be so perfect when issued from an architect's office, that all the most careful scrutiny will detect is, that their i's want dotting, or t's that require crossing. An architect's specification is written by a specially-trained man, and to submit a dispute as to its meaning to the decision of a man who has had no such training is an absurdity; but it is done every day in our law-courts. What would be said about the wisdom of submitting some purely legal question to the decision of an architect who knew nothing about law, and who was expected to decide on evidence much of which was contradictory? The practice of an architect and the business of a builder bring them constantly that kind of knowledge which can only be obtained by actual contact with the work—this is known as practical experience—and a man's services will be valuable just in proportion to his acquisition of it. An architect is necessarily a judge by profession, for he is called on every day to decide as to the quality of the workmanship and material in his buildings. Indeed, before the work reaches the contract stage, he has to weigh in his own mind, and decide what materials are best for use under the circumstances. Again, is not the architect frequently made a Judge, from whom there may be no appeal, in all disputes arising out of a contract?—a position complicated by the fact that one of the parties to the dispute is the architect's employer; whilst in some cases the position is even more perplexing, for the architect may be called on by the builder to decide a case involving some alleged omission from the plans and specification. Building is a complicated process, or combination of processes, and it requires a clear head, as well as great experience, to know exactly what words and phrases mean when they come to be embodied in a specification.

The Judicature Act provided a tribunal that should be satisfactory to both architects and builders in the settlement of their disputes—namely, an assessor, who is to be associated with the Judge at the trial, and who will advise him on all points not strictly legal. In such a case, the assessor will, of course, be an architect of repute, or a builder, agreed on by both parties to the action. We once tried this plan, and found it eminently satisfactory; but we have not heard of others working in the same direction, although it is obviously a sane way to settle a dispute fairly.

Note-taking is a direct method to enlarge one's experience. What is gained in this way is seldom forgotten; for the impressions made on the mind are more or less permanent, and the brain grows in consequence to acquire other branches of knowledge with great facility. To decide fairly on the various points of difference that may arise during the working out of a building contract requires the exercise of patience, intelligence, honesty, and practical knowledge of the work. Yet how often do we see one of these wanting in the would be Judge? Perhaps the strangest thing about the profession is the little repute in which an architect's opinion is held by the majority of people. A medical doctor will visit a patient and prescribe for him: no one having the temerity to suggest a change in what he orders. His decision as to what is best to be done is final. Again, a veterinary surgeon will examine an animal that is ill, and he will give directions for its treatment, and here no other—the owner nor anyone else—will think of interfering. But when an architect comes, the steward, the butler, the woodman, the gamekeeper, and all the workmen connected with the estate are ready to give him their advice on every point connected with a building, and they look on themselves as being possessed of knowledge in every way superior to that of the man who has undergone a lifelong training in that work. Drains are surely within the province of the architect, and sanitation is daily becoming one of the ends of all good building; but how seldom do we see an architect in practice appointed as officer of a sanitary authority compared with the numerous appointments of medical men to the same post. Within the last few months an M.D. sanitary surveyor entered premises belonging to a client of ours, and, on his sole authority, he ordered 6in. sewers, traps, and grids for forty houses, his order being confirmed by the magistrates. Yet the work involved the expenditure of £100 for a sewer that would be a dangerous nuisance in a few weeks after its completion, there being no water supply to flush it. This case is the more extraordinary, for there is no sewer in the public street, and the urban council refuses to construct one. So that the sanitary authority has ordered the making of a common sewer through private yards, with the outfalls to the main from forty houses! Here the sanitary surveyor dictates terms to the architect, and the latter is powerless to resist. We have seen somewhere a good definition of modern sanitation, and we cannot resist the temptation to give it: "Sanitation, an abstruse modern science. Sanitary engineers require no diploma, are self-elected, and of a heterogeneous order. A knowledge of sanitary construction by no means necessary to become a good sanitary engineer; in practice it is not a point for consideration. A sanitary engineer is a person appointed to find out defects where none exist, and vice-versâ."

While on this subject, we may mention that, as in other matters, so in this: Experience teaches. In some places, where there is no public water supply, with a faulty sewage system, and the very lowest class of property is dealt with, it is far

better to dispose of "nightsoil" and slops on an open heap in the corner of a yard, than to force them into a covered sewer, with no water supply to flush it. The whole question of sewage requires consideration. We have been taught from our youth up that sewer-gas is deadly; but we see in London, and other large cities, that men are constantly working in the sewers, and breathing this deadly gas, without experiencing any ill effects. Much capital has been made out of sanitation; some of the appliances invented for combating its abuses are of the most complicated kind, and of more than questionable value; many that were boomed for more than they were worth are now resting on the scrap-heap. Much zeal and little discretion usually marks the progress of the sanitary surveyor. We advocate note-taking on every opportunity, and it will add to the value of any that may be referred to afterwards if the date and name of the building is affixed to each. Above all, it is necessary, when dimensions are taken, that there are too many rather than too few, for it is exasperating to discover a sketch, made some hundreds of miles away, of little value because one dimension is forgotten. We must plead guilty to having been neglectful in this respect ourselves, for we find important sketches without the dates when they were made, or even the place they were taken, and, only too frequently, dimensions missing also. Method is of great value in making surveys, and some system of procedure must be arranged and worked to, if nothing is to be overlooked. At one time we had several dilapidation surveys to make, and we invariably took the dilapidations in the same order in each house. It was in this way: "Windows, doors, fireplaces, floors," the words forming a rough rhyme, not easily forgotten, and we found this very simple, and a great help. It may perhaps be necessary to explain that "windows" included the stone sill, wood sill, pulley stiles, casings, linings, parting beads, shutters, backs, elbows, soffits, capping, freeing beads, and architraves—in fact, every item belonging to the window under examination, not omitting the pulleys, cords, weights, and sash-fasteners. The various items under the other headings, which need not be enumerated here, were also taken in the same detail and order; in fact, what looks so complicated at first became so simple by the application of this method, that we frequently made a survey, or, rather, part of one, mechanically, and without a thought, the result being correct in every case. This kind of surveying is the best possible practice for a beginner, as it brings to his notice in the most direct way the endurance, under stress of time and weather, of the various materials used in building. If the house is, say, fifty years old, or over, he will probably find that the wood window-sills are decayed where they rest on the stone sills; the bottoms of the pulley stiles are in the same state; sometimes, but not so often, the sash-sill will also be found decayed, the remainder of the window being sound, except the glass, which may be broken. Inside doors are generally in good condition; but the locks may be out of order, and the keys lost. They sometimes fall away from the hinges, and they will not shut without easing. If this process is continued for years, the top of the door comes away gradually from the linings, the lock and bottom rails being planed completely out of shape by a continuation of the process. The bottoms of outside doors are nearly always decayed, and so are stiles of the frames. Nothing but an open porch appears to protect this part of the woodwork. To examine and note the condition of a floor may be troublesome, for it involves taking down skirtings, and pulling up flooring-boards, both of which are necessary to examine the wall-plates and the ends of the joists. The boards are invariably worm-eaten where there is sapwood on the edges of them, and they rip up in thin splinters from washing where they have been cut tangentwise with the annual rings. The shrinkage of boards will be noted, and although a simple way to avoid this nuisance is to lay the boards, and not nail them until they are dry, this plan is seldom adopted, on account of the trouble it involves. Where boards are kiln-dried, this objection does not hold good. One of the strangest customs in building at present is the use of floor-boards of narrow width—some down to 4in. One builder assured us that the narrower the boards were, the better the floor they made. With him, numerous joints looked well! The use of narrow boards came in with imported prepared flooring; for when we cut our boards from deals, or from the log, they were never less than 9in. wide, and they were sometimes 11in. and 16in. wide, over an inch thick, and rough one side, being thickened only where the joists came. Builders like narrow boards, though there is more labour in laying them, than if wide boards were used, for they shrink less in proportion; but this reason is not good enough for the architect. It is obvious that if a floor could be laid in a single sheet, and without joints, it would be more effective than one with joints, few or many.

In examining rooms, the state of the timber generally should be noted, for where there is sapwood there is worm-eaten timber. This may be called dry-rot, to distinguish it from rot brought on by rain, and this latter may be seen along the ridge, or the ends of the rafters; the wall-plates, too, may be decayed. Ridge-tiles require constant attention to keep them water-tight, and, as this is not given, the ridge and rafters both suffer. In making measured notes of an existing building for alteration or restoration, we thought that plans, sections, and elevations to scale should be made at and on the building, and in this way dispense with the ordinary notes. In order to do this, we took the drawing-board and plotted, while two assistants, with the tape, called out the dimensions; the result was satisfactory in every way but one, and that was in the total absence of all figured dimensions—which are really the backbone of such a survey. It may be said that the drawings were to scale. This is so; but to read off afterwards by scale from a plan what was in figures in the first instance, we find to be a mistake, for it cannot be done accurately. Full-size drawings made on the spot are all right, and those to 1in., or any scale above it, may answer fairly well; but to take dimensions from an eighth scale drawing we found to be unsatisfactory. So that in our practice now we plot on the building, when it is an important one, and we figure each dimension as we plot it, so that the record is perfect. We strongly recommend other architects to adopt this practice, for we have had over and over again to make rough guesses at what a dimension was, on account of an oversight in the survey.

ORNAMENTAL TILE-WORK.—V.

THE TREATMENT OF GABLES.

Although there are only two main methods of gable construction viz., those of the parapet wall and projecting eaves—there are many fresh methods which can be applied to these in their finish, by means of tile relief. This is particularly the case with regard to the study of such relief as applicable to roughcast or concrete construction, or a combination of these two. Fig. 1 illustrates a simple finish, with the slight relief formed by tile key and arch blocks to a centre bull's-eye window, with a vertical row of tiles over.



A similar double-band edging to the outside tile brackets, and a single tile quoin. Fig. 2 illustrates quite a different type of design, as



produced by irregular relief. The effect here is far more free and picturesque than that obtained by rigidly adhering to straight,

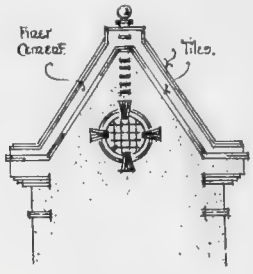


Fig. 1.

equibalanced lines, in the customary manner, similar in character to the first figure. The somewhat stiff, harsh, or mechanical feeling of the latter is quite broken up and eliminated. The tile diamond in the apex of the gable would, of course, be stepped in the customary manner, as in brickwork.

The triangular relief to the angular centres of the gable are formed in brickwork, a couple of coping-bricks being backed to-

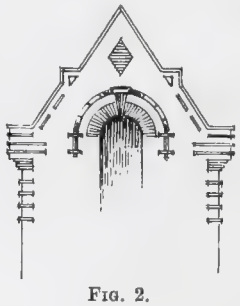


Fig. 2.

gether, thus forming a larger pattern. A tile arch, with key block, and a tile label course, completes the main relief. This system, too, of merely picking out the upper portion of the building angle with a few tile quoins gives them more value as a relief than if they were repeated mechanically all the way down. The top of a structure, slightly accentuated with any ornament, a little more, so massed, at the top of lower-story bays or porches, usually has a far happier effect than if a façade were coated with it in the customary orthodox uniform manner. The latter system merely produces monotony of ornament by repetition, instead of giving it the real ornamental value it might have when

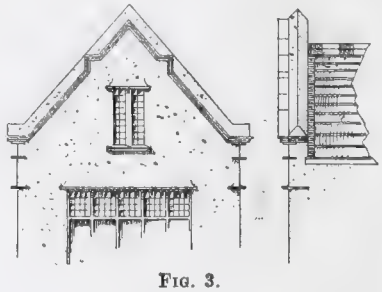


Fig. 3.

well contrasted with plain spacing. Gables treated in a very simple manner, something after the style of the succeeding figure—No. 3—would be well suited to a great deal of plain work, at a very slight expense. One of the most picturesque forms of gable is that of the crow-stepped parapet. It is one in which the tile can be used with very simple, but, nevertheless, effective results, as shown by Fig. 4. There are also many methods or variations of forming the project-

ing eaves-gable in tiles. The principle, illustrated in Fig. 5, is fairly well known. The method of tilting the outside battens to the tiling, by means of a deeper or raised end rafter, serves a double purpose. Whilst imparting a decidedly picturesque or piquant air to a roof end, it also has the advantage of



Fig. 4.

a greater degree of practical utility by throwing the water back on to the roof, and so down to the gutters, instead of so much dripping over the gable end, which occurs with the customary straight roof, often running in streaks when of plaster or roughcast. Broad, tile dentils, either in single or double course, also have a very good appearance with this style. A few other original designs for tile treatment are illustrated by the succeeding figures. No. 6 shows a deep course, formed with tiles on edge. By slightly projecting them towards the ends, and

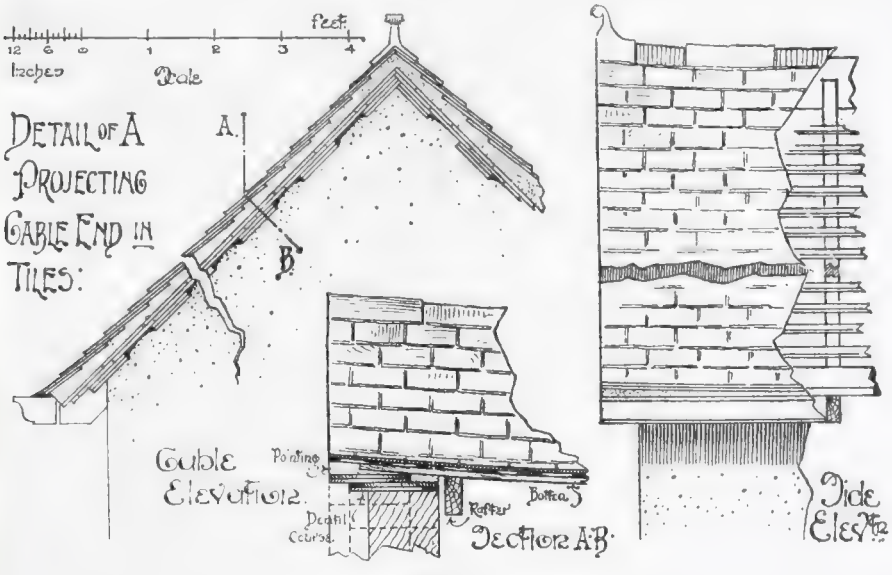


Fig. 5.

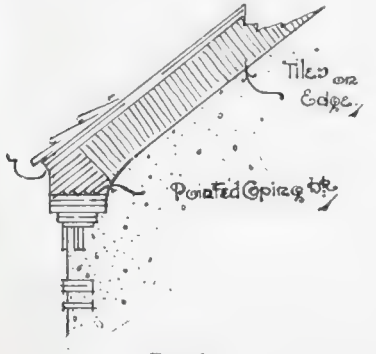


Fig. 6.

finishing with a pointed coping-brick on top of the tile bracket, a slight curve of a Gothic character can be produced, affording a further distinct variation. Another method, somewhat after the same style, is illustrated by Fig. 7. The value of a pointed coping-brick, introduced in the manner shown, will be seen by the avoidance of fine cutting to

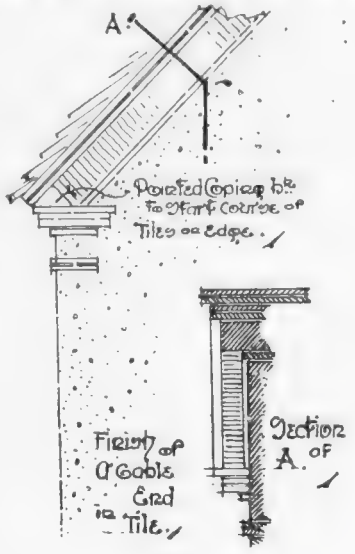


Fig. 7.

the tiles, which would occur if they were continued to the end. Its place could also be taken by a triangular-shaped cement block, roughcast, if preferred. This would introduce a little further variation in colour, not at all unpleasing. By the use of a few combined courses of tiles. After the methods shown by designs Nos. 1 and 2 on Fig. 8, quite a large degree of Classic feeling can be imparted to a building, and that, really, in

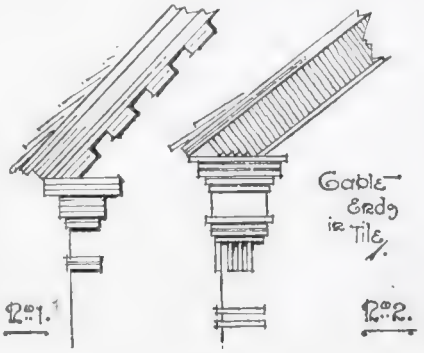


Fig. 8.

a very simple manner. Small gables similarly constructed, with these ends, would also look well in porch work.

Another feature in this section which has possibilities of considerable development for relief in this style is that of the ornamental centrepiece to gables, where a blank wall would otherwise occur, which is often the case. A further design, showing another variation of the gable finish, with a tile centrepiece introduced, is illustrated by Fig. 9. Such work, with careful study, can



Fig. 9.

be rendered very effective, introducing quite a large number of fresh designs of striking architectural originality. There are many methods of dealing with tiles on these lines, for such positions. Merely a few other designs are illustrated by the succeeding figure, No. 10. The first one on this sheet indicates the centre-line, emphasised with grouped tile key-blocks at the top and bottom, whilst in the middle a little raised or sunk brick relief can be arranged. Header bricks are shown in projection between the single tiles, arranged in a circular manner. No. 2, again, indicates the freer and somewhat more rustic character introduced by the more loosely-disposed tiles. A slightly less hard or mechanical spirit, as introduced in this example, is usually to be preferred. Nos. 3 and 4 illustrate the wide range of outline designs possible with a geometrical basis; they should suggest many patterns which may be similarly formed with a little study. Nos. 5, 6, and 7 indicate smaller and

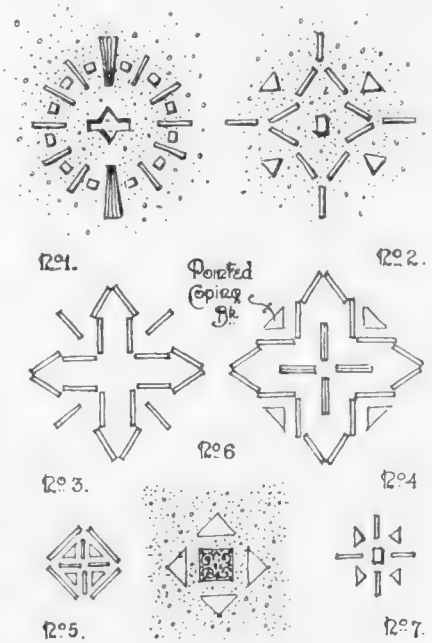


Fig. 10.

simpler, but somewhat similar, designs, such as might be more satisfactorily utilised in the apex of a gable—for instance, taking the place of the diamond pattern shown on Fig. 2. They are merely formed with a few tiles and coping bricks; such patterns as these could be easily arranged, with scarcely any trouble. No. 6 indicates a patterned tile inserted flat between four coping bricks, placed on the diagonal. As a further colour variation with this style the former might often be introduced in some plain glazed tint, such as is in use for interiors, fireplaces,

hearths, etc. Judiciously utilised in this manner, with regard to a general colour scheme, it might be productive of many new and charming effects, particularly with suburban and residential work. For instance, low tones of colour in such tile-work, introduced in fine or medium white roughcast, with roofing of the green Westmorland slates, would produce some remarkably nice colour-work, quite on new lines. Such colour-work is well worthy a large amount of consideration, either used in single tiles or grouped patterns. A great deal of centrepiece work, as illustrated, could be readily con-



structed in concrete blocks, stepped to the courses arranged for, all ready for quickly



erecting on the site. The latter work, generally, might also very well be used to find



employment inside, when the weather does not permit of working on the site.

W. G. Kerby, Architect.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.

The second meeting for the present session of the Royal Institute of British Architects was held on Monday evening, the chair being occupied by Mr. A. W. S. Cross, Vice-President.

THE LATE MR. JOHN BELCHER, R.A.

Mr. E. Guy Dawber, Hon. Secretary, said it was with very great regret he had to announce the death of Mr. John Belcher, R.A., a distinguished Past-President and Royal Gold Medallist. As the President of the Institute it fell to Mr. Belcher's lot to preside over the International Congress of Architects, held in London in 1906, and those who were then present would recall the admirable manner in which he discharged the onerous duties of his position and the self-sacrificing devotion with which he threw himself into the task of making the gatherings a success. His architectural achievements won the admiration of all members of his profession, and never had the judicious use of sculpture been more successfully applied than in his buildings, notably at the Institute of Chartered Accountants. Having referred to Mr. Belcher's collaboration with Mr. Macartney in the penning of "The Later Renaissance in England," Mr. Dawber concluded by a resolution expressing deep regret at their Past-President's decease, and instructing the secretary to forward a letter of condolence and sympathy to the widow of their late friend.

Professor Beresford Pite, in seconding the motion, observed that Mr. Belcher well maintained the refined Classicism and high business reputation of his father. There were in the Past-President's character many delightful traits, a warmth of nature, a quick sympathy with the student and the worker, a refinement and modesty, while he was ingenious in design and ingenuous in charm. Underlying all was a deep charity which gave liberally and without display. He was not alone a friend to the sculptor and painter and to the young student, but also converted the builders who carried out contracts under his direction into personal friends. In his works his response to the calls of art and his appreciation of the beauty of all its forms could be detected, and they evinced a refined feeling and a sympathetic originality. His enjoyment of beauty in all the arts, including music and poetry, was very obvious. He came on to the Institute Council somewhat late in life; but he speedily made his influence felt in extending its artistic sympathies. His presidency was notable for the personal influence he exerted in bringing into the Institute ranks men who were of growing reputation, including Messrs. Reginald Blomfield, Ernest Newton, W. R. Lethaby (and others of the Art Workers' Guild), E. S. Prior, Mervyn Macartney, G. C. Horsley, E. J. May, Halsey Ricardo, Thackeray Turner, F. W. Troup, Ambrose Poynter, Walter Cave, E. L. Lutyens, Detmar Blow, and others. As visitor to the Royal College of Art his sympathy with, and influence over, the students was remarkable. The end of a vigorous life came very swiftly, and he passed away when apparently in good health.

The chairman put the motion, which was agreed to in silence, the members rising in their places to express their sympathetic concurrence.

It was announced that, acting under Section 140 of the London Building Act, the examiners had granted certificates of competency to act as district surveyors in London to the following four candidates—William Edward Brooks, Associate; John Percival Edwards, Frederick Snowden Hammond, and Hubert Cowell Sands, Licentiates.

THE WESLEYAN HALL, WESTMINSTER.*

A paper descriptive of this building was read by its joint architect, Mr. H. Vaughan Lanchester. It was illustrated by a large series of full-scale working drawings hung upon screens, and by about five-and-twenty lantern views. Mr. Lanchester mentioned that for the hall there was a double competition, Sir Aston Webb being the assessor. In the preliminary competition Mr. E. A. Rickards and he submitted alternative designs, one with the axis from south-east to north-west, the other with a direct axis from east to west. The latter scheme only was one of the nine selected for the second stage, but it bore little relation to the ultimate design, as by the final conditions the large hall had to be placed on the first floor. The east or main front was cramped by the proximity to Westminster Hospital, and he suggested that when the hospital is replaced by other buildings, the Government would do wisely to give land now mostly occupied by the Stationery Office, so as to allow the frontage to be set back. The Wesleyan Hall site was very limited, considering the accommodation stipulated for, and the various floors had to be partitioned, he would admit, without relationship to a proper and definite architectural scheme appearing at each level from foundation to roof. In order to provide adequate exits from the great hall, spacious foyers were placed around it, the scale being extended into the main staircase and entrance hall on the ground floor. The main staircase proved a very difficult problem in planning. Reinforced concrete on the Kahn system was extensively used in the interior, the Kahn method being chosen as providing a bar that once in position was visibly adjusted to take up the strains provided for before filling in commenced, and he had not had the slightest reason to regret the selection. The only points where slight cracks manifested themselves were when steel sections were resorted to, so as to economise depth. A steel raft was provided under each pair of main piers carrying the eight-sided dome, and under the remainder of the building was a reinforced concrete raft of varying thickness. The internal dome above the large hall was 50ft. below the external dome. A stone ejector was put in to lift the discharge to a safe level. The electric lights had to be arranged on two independent circuits, and the heating was by low-pressure steam.

Sir Aston Webb, R.A., in proposing a vote of thanks to the lecturer, with whose name he coupled that of Mr. E. A. Rickards, observed that as assessor he had not till now known that Messrs. Lanchester and Rickards sent in alternative designs, a course which he personally discountenanced. He well remembered the slight and sketchy design which seemed to him to possess considerable promise, and which he put among the nine submitted to the Trustees of the Wesleyan Twentieth Century Fund as those to be chosen for the final competition by their authors. He had no difficulty in the second stage in picking out the design which, on his recommendation, was selected by the Trustees and carried out. The issue demonstrated the utility of a double competition, for each of the chosen architects set himself to the narrowed problem of a main hall to be placed over the offices and minor rooms. As assessor, he made only one suggestion with regard to the selected design—that the main entrance might with advantage be enlarged—and this point the architects adopted. He might in passing mention that his friend Mr. Ingram Bell once told him that the late Eden Nesfield was preparing a design for a mansion, and the client, on looking at the sketch, exclaimed, "What a delightful and handsome entrance!" Directly his back was turned, Nesfield erased with indiarubber the feature so admired, explaining to Mr. Bell, "I hate handsome entrances." Westminster Hospital was about to be removed, and if in the rebuilding, as had been suggested, the Government would give some of the comparatively valueless land at the rear now occupied by H.M. Stationery Office, which was also to be transferred to a fresh site, so as to enable the new buildings facing Broad Sanctuary to be set back, it would not only be beneficial to the Wesleyan Hall, but would be a great public improvement of national benefit. The constructional methods adopted at the hall were of great interest and very bold and successful, but the use of reinforced concrete was still in its infancy, and he would much like to hear the lecturer's privately expressed opinion of the material, its merits and defects. As to the architectural treatment adopted, a dome of irregular octagonal form was obviously the best outline to be adopted on a site where any more usual treatment would invite comparison with the great public buildings around it. It had the character and appearance of a great institutional building; he only regretted that the towers were not completed, and that a portion of the fabric had been leased to a banking company. He hoped eventually that the money-changers would be driven out of the temple. This was not the occasion for criticising the design, but for congratulating its authors upon having successfully carried out a noble conception on a most important site.

Mr. George Corderoy, as one of the trustees, seconded the vote of thanks, remarking that on every ground they had reason to congratulate themselves on having obtained by competition the monumental building that they would have desired. The problem set was not an easy one, and it had been successfully solved, although in the end office accommodation had to be sacrificed to provide space in the great hall. The reinforced concrete work had been most satisfactory, and the methods of construction had been to himself of the highest interest. Members would be interested to learn that the cost of the building worked out at just one shilling per cubic foot, and after long and great experience in this matter he would say that it was the cheapest building he had known of its class.

Mr. Dove, the builder of the hall, said he had admired the bold treatment of the design. He must allude to the happy relationship which subsisted between architects and builders from beginning to end of the contract. Every detail fitted in perfectly, and there were none of the discrepancies between working drawings, plans, and specifications which caused so much friction. The fact that the hall was not set back so as to widen Broad Sanctuary between the hall and the hospital was due to the dilly-dallying of the London County Council.

Mr. William Woodward and Mr. Henry Poole, the sculptor employed on the work, also supported the vote of thanks.

In replying to it, Mr. Lanchester expressed his satisfaction that not a single serious accident occurred during the construction of this large and lofty building, and renewed his plea that the Government should take steps to widen Broad Sanctuary, one of the narrowest main approaches to Westminster Abbey.

* Messrs. Lanchester and Rickards' selected design for this building was illustrated in our issues of June 23, July 28, and August 25, 1905; and photographs and detailed drawings of the reinforced concrete constructional work in progress appeared in our issue of Dec. 30, 1910.

A sanatorium is about to be built at Muirburn, Strathavon, for the joint burghs of Lanarkshire, at a cost of about £30,000. Mr. John Steel, of Wishaw, is the architect.

THE NEED FOR STANDARDISATION IN DRAINAGE DETAILS.*

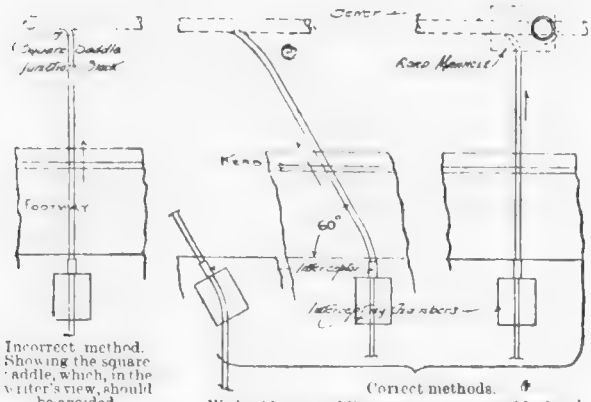
By Arthur Palmer, P.A.S.I., M.R.San.I. (Member).

The object of this paper is to put forward a series of queries, in the sincere hope of encouraging a good and breezy discussion from which helpful notes can be obtained and new ideas formed. Such object, however, is by no means original, for in the interests of this Institution Mr. Henry C. Adams has always been a great advocate of merely advancing a thought or phrase upon practical or technical points for the purpose of discussion, even without a written paper at all. The following notes are dealt with under two headings—viz.:

(a) Details affecting the sewer side, or that of the municipal authority. (b) Details affecting the drainage side, or that of the private owner, with the assumption that the work has been carried out to the authority's approval.

SEWER CONNECTIONS.

The first question to which your attention is drawn is that of the actual connection to the sewer from the intercepting-chamber. These connections invariably run direct from private properties at right-angles to the sewer, and in many districts the concrete beds to such connections are omitted. In contrast to this, in every minor drain of the private owner, connecting with his major, or main trunk, drain, "leads," or very easy bends, are enforced, and in many districts under London County Council Model Bylaws, or the Public Health Acts, 6in. of Portland cement concrete has to be provided. Evidence of consistency would appear to be lacking, but the writer's opinion in the matter, particularly as the cost of such connection is borne by the owner, is that the whole (drains and connection) should be dealt with similarly and under by-law standard in every respect. Rough sketch diagrams (No. 1A) illustrate the writer's views of correct methods for proper "leads" to the sewer, laid to even falls throughout, right angled connections only being allowed where manholes exist in the road to receive them. One of the many incorrect methods is also shown from actual practice, although it would be unfair to mention the district from which it has been taken. Further points for discussion, also illustrated—(1) A minimum depth (where possible) for connection at back of path of, say, 5ft. or 6ft., in order to allow of gas, water, and other mains above, and to prevent the interlacing of sewer connection with other mains, as shown on section. (2) Correct-sized oblique "saddle" junctions, with careful cutting or special their use insisted upon, since in many cases the right-angled saddle, owing to bad joints and much cement work, is a weak spot for blockages in small pipe sewers which the interceptor has probably been unduly credited with in clause No. 4 of the Local Government Board Committee's report.



Incorrect method. Showing the square saddle, which, in the writer's view, should be avoided.

Correct methods. With oblique saddle pipes or junction-blocks, ⅛ or ¼ circle-pipe bend could be used to great advantage. Quarter bends and knuckles should be avoided in all cases. Should the sewer be a stoware pipe, a new "Y" junction, with special insertion-piece is preferable.

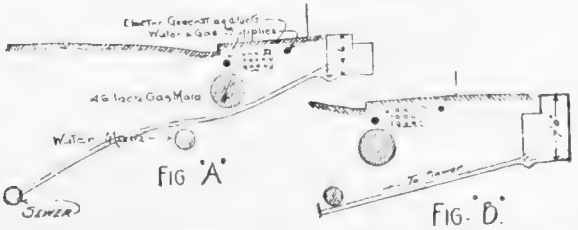


Fig. "A" illustrates a sewer-entry from actual practice, and Fig. "B" the advantage which could have been obtained by keeping intercepting-chamber deeper and further back.

Sewer Entry Details. (No. 1A.)

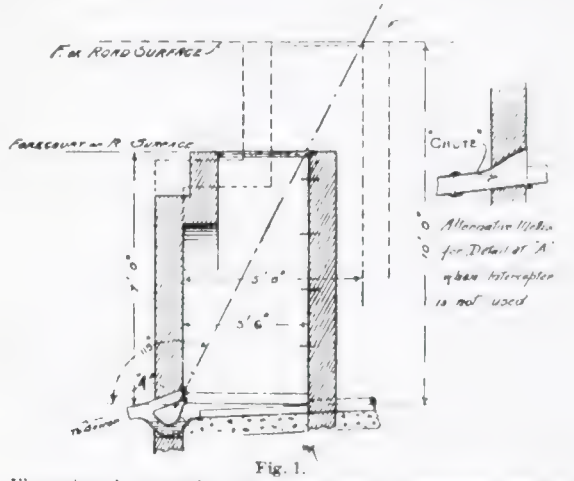


Fig. 1.

Illustrating the principle for increased size of intercepting chamber assuming the angle of 150 deg. reasonable for clearing and access purposes.

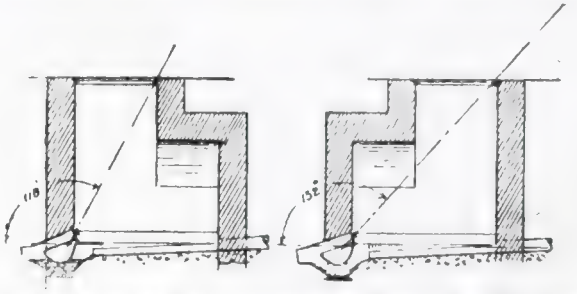


Fig. 2 illustrates a manhole from actual practice, and Fig. 3 the method the author would have adopted in building the same manhole, obtaining an angle of less resistance when using the rods for clearing purposes.

Interceptor Chamber Details. (No. 2A.)

INTERCEPTING TRAPS AND CHAMBERS.

The second query is that of our old and much-debated friend the "Interceptor," and apologies are due to this meeting for once again introducing it; but, so far, beyond sundry opinions of a most varied nature regarding its use or otherwise, there appears to be very little on record as to definite decision or action, and, so far as the writer knows, since the Local Government Board's Committee report on the question, the interceptor has neither been condemned nor substituted, and is, therefore, still in force, the by-laws which recognise it being considerable in number. The writer purposely places this under Section (a), since he feels that with standardisation access and constructional rights should be given to the local governing authority, owing to the great affinity between the intercepting chamber and insertion pieces, should be standardised, and the sewer, also to the time, fast approaching, when the needs of the future will require deeper consideration, and the statistics of chemical analysis of liquids flowing into sewers will require greater accuracy of location. As pointed out by Mr. Percy Boulnois in his paper read before the Royal Sanitary Institute in November last, "Either the advisory powers of their engineer where circumstances are otherwise. In the latter case a "regulation or universal" trap should be used, with special by-laws relating both to it and to the construction of the intercepting chamber, although, whether the interceptor was used or not, the chamber, as access to the connection and the sewer, should be insisted upon for reasons before stated. It will, therefore, be seen that the writer's view is that reform in standardisation or uniformity is the essential need of the present day, and this we, as an institution, should strive to obtain as an advance upon the present varied views of even neighbouring boroughs and authorities. In the writer's district, the area of which is about 3,855 acres, and the population about 115,000, there have been surprisingly few interceptor stoppages during the past ten years, and this good record is very much due to the selection and enforcing of truly good-shaped interceptors, with roomy and adequately designed chambers. Submitted are sketch designs explanatory of the theories set forth, and a full discussion is awaited; but the writer's design for the "Regulation Interceptor" is of the "reverse reducer" form, after Doulton's Fig. 65 style; but of their Fig. 46 pattern for easy access (which, unfortunately, is not stocked on the "reverse reducer" principle). For every 4in. and 6in. private main drain there should be a 6in. diameter sewer connection, and for 9in. and 12in. drains a 12in. connection with special "reducing" channel pipes for the larger drains as necessary. Slight increase of cost

* A paper read at the Annual General Meeting (London) of the Institution of Municipal Engineers, Nov. 7, 1913.

may be urged against such system, but there would be a greater tendency to use smaller and more self-cleansing drains than there has been heretofore, and considerable expense would, in the end, be saved. A further point is not to have too deep a seal in the trap, but an easygoing design, and I specially advocate no perpendicular drop being made at the mouth, which is so usual in most traps. Such drops, to my mind, impede the flow considerably, and rob one of at least 2in. "play" in the fall, whereas the fall to the central channel pipes of the chamber could be kept greater, to increase the velocity sufficient to clear the trap entirely of its contents. Another point to watch is the first joint between trap and sewer connection, which is almost unapproachable and very difficult to make. It should, therefore, be a good patent joint of some sort. Very often it is found that a piece of rough cement is left at the invert here, becoming an excellent "hat-and-coat" hook for flannels and similar causes of trouble. I further maintain that the stopper should be chained, provided with a patent joint, and made of cast glass, and sufficiently small in diameter to pass through the trap should it manage, through any unforeseen reason, to fall into its mouth. The idea of the cast glass is that in case of resistance to releasing the cap or stopper by the chain (perhaps when the chamber is full) it could be smashed from the surface level above and easily renewed. The intercepting chamber itself should be at least 3ft. 6in. by 2ft. 6in. (increased according to height, as shown), allowing fair room for a man to perform necessary cleaning and general inspection. The cover in the chamber should be at least 2ft. by 2ft. 6in., and placed at the opposite end to the trap, allowing the best obtuse angle for reaching the trap direct from above, a point frequently overlooked in many districts. The fresh-air inlet should be placed fairly high, and well out of danger should it act as an "outlet" creating a nuisance, which is contention No. 2 of the Local Government Board's Report, and the chamber side of the inlet should be constructed low down, as near the channel-pipe as possible. Where the intercepting trap is not used the writer suggests an open chute, as shown. Appended is a list of advantages claimed for the suggested "Regulation Trap," with illustrations of both chamber and trap; but the writer does in no way pretend to have solved the whole difficulties raised against the interceptor, nor does he wish it to be understood that he is wholly and solely a believer in the trap in all circumstances. Upon this point much has been said in the past, and trial practice and gradual improvement would seem to provide far more useful data than all the chemical and bacteriological theory on which so much of the Local Government Board's Committee's report seems to have been based.

ADVANTAGES CLAIMED FOR THE "REGULATION TRAP."

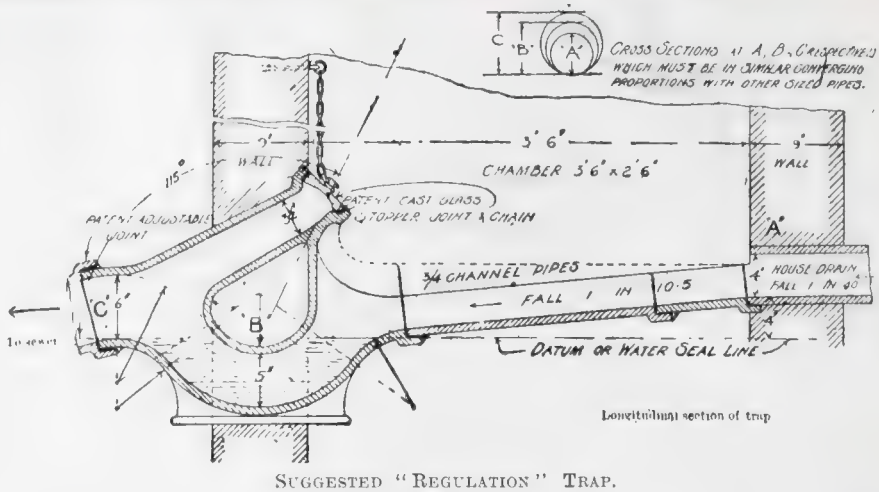
(1) No sharp bend or drop at D, as is usual in most intercepting traps, but a very easy bend direct from a sharp fall in the channel pipes giving all soil and matter greater impetus on entry to the trap to reach the sewer side direct.

(2) No stoppage of trap possible, since its shape increases in diameter and area from house-drain side to sewer side; therefore, whatever has cleared the house-drain must clear the trap.

(3) Easy access from mouth of trap to at least three parts through for cleansing and clearing purposes. Owing to either a deep seal or drop in most traps (or even both in some) a half-way access only is possible.

(4) Cast-glass stopper chained so that if it be blown out by any sewer-gas pressure it cannot fall into the mouth of the trap, and even if stoppage should exist and the chamber become filled, the stopper could be easily smashed from above the manhole. The stopper is also small enough to pass through the trap.

(5) A patent adjustable joint at C, where, in the ordinary way, joints are most imperfectly made, owing to their inaccessibility, and become hence a frequent source of stoppage.



SUGGESTED "REGULATION" TRAP.

(6) The overthrow of the recent contentions of the Local Government Board's Committee against the interceptor—viz., "that of blockage, with other minor accompanying defects."

MOTOR SPIRIT IN SEWERS.

This undoubtedly is a difficulty of a grave nature, which is facing every engineer and drainage expert. The deadly inflammability of the spirit calls for immediate action, for at all costs it must be kept from entering sewers. The following cases speak for themselves. The first was reported in 1912, and we then have one reported as recently as August last. The report runs: "The serious danger of throwing even a cupful of petrol down the sewers, already pointed out by our daily papers, is emphasised by the *Lancet* to-day. It has been calculated that one gallon of petrol, if vaporised into air, will produce something like 50 cubic yards of explosive mixture. A medium-sized sewer, running half-full, would only require one gallon of petrol to produce sufficient vapour to blow up some fifty yards of sewer. Serious loss of life has occurred owing to this objectionable practice, and private householders are warned against it." "Thirty men, working at Kilburn, in a tunnel 90ft. deep, forming part of the Bakerloo extension of the North-Western Railway, were partly overcome, owing, it has been stated, to the smell and fumes of a petrol motor-engine, and work was suspended on a section late last night. The engine was used for the first time one day last week, in place of pit ponies, and several men had to leave their work. It was used again yesterday with a different kind of oil. The men began to show signs of giddiness, and about a dozen had to leave the tunnel. Several reeled like drunken men, and others were so affected that they had to be led or half-carried to the shaft. The engine was stopped, but a sort of after-damp remained, and last night about thirteen men were forced to give up their work. One was brought up unconscious."

It is believed by the writer to be authentic that at one time the specific gravity of motor spirit was much lighter than that of water; hence the theory advanced even by the London County Council in 1907 (to which many engineers gave credence) that, if large and deep-seated gullies (illustrated) were provided, the oil or spirit would float and evaporate from the surface. Such is, however, now disbelieved, or, at least, doubted, since the specific gravity of the spirit is said to be the same, or almost the same, as that of water. This means that mixing is actually taking place between the two liquids; hence our special gully system, deep seal or not, becomes useless. The question for the municipal engineer is: Should garages be drained at all? If not, what is to become of the washings when cleaning cars, considering (so we are told) that one man takes nearly three hours to hose and clean a fairly large car down, leaving out of the question 'buses, motor-vans, lorries, and other large commercial vehicles? It is hoped that discussion will ensue upon these remarks, and it is to be noted that in one of our Metropolitan districts the old soak-away system has been reverted to in motor-garage drainage, although it is doubtful whether such system is not—

(1) Bad in principle, out of date, not permitted by any of the Public Health Acts, and against the intent and meaning of the London County Council Model By-laws for area

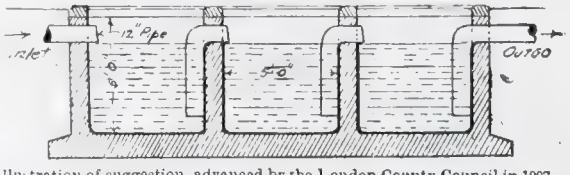
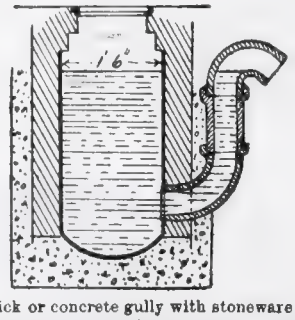
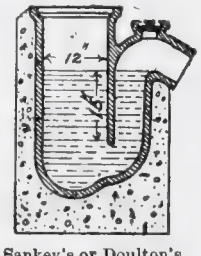


Illustration of suggestion, advanced by the London County Council in 1907, to be used additionally to the usual regulations and drainage by-laws in force, reduced or enlarged according to circumstances.



Brick or concrete gully with stoneware bends.



Sankey's or Doulton's deep seal pot gully.

Illustrations of methods adopted in various districts for minor garages, but, as will be seen, both (and all) aim at deep seals and large areas consistent with the London County Council's suggestion.

PETROLEUM INTERCEPTION: SYSTEMS GENERALLY ADOPTED.

drainage, sanctioned by the Local Government Board, June, 1901.

(2) Bad both for foundations constructionally, and dampness from health standpoint, owing to concentration of many gallons of water in one spot.

(3) Bad owing to the connection being liable to future inadvertent misuse for soil drains.

For the moment, however, even admitting the soak-away to be a means out of the difficulty, what would be the best course in clay

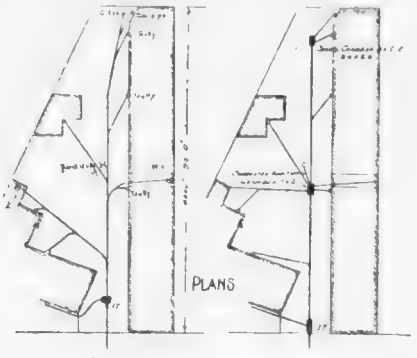
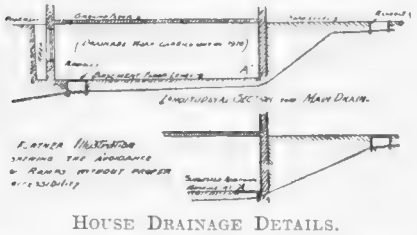


FIG. 1. FIG. 2.

FIG. 1 illustrates method of redrainage adopted in 1906, and FIG. 2 an "amendment" which could have been made to the advantages of 20ft. less drains, less bends (other than open channel), and better access throughout.



HOUSE DRAINAGE DETAILS.

or such soils, where soak-aways are quite out of the question? The writer, however, feels that the municipal engineer is amply supported by both Public Health and Metropolis Management Acts in the prevention of dangerous fluids from entering sewers, even to the extent of not allowing drain connections from motor garages at all, and that if they are allowed he should have the legal right to control its point of entry. Illustrations are given from practice of motor spirit interceptors in different districts.

HOUSE-DRAINAGE DETAILS.

Under this heading the writer intends to deal generally, and not so much upon the relative merits or otherwise of various sanitary fittings, of which so many are on the market. Fittings of good shape, quality, and guaranteed durability can be obtained from most of the leading firms; but my quarrel is with the great diversity of opinion existing between sanitary inspectors, engineers, and others, to which I have already referred. Instead of broad, general principles throughout the Metropolis (and outside, for that matter), there is at present a terrible mixture. Again, speaking generally, when the London inspector issues his notice of drainage defect and requires a redrainage, he has apparently no power to open up further trench works in order to obtain a better system, or, if he has the power, he seldom uses it. He simply relays, perhaps with Portland cement joints instead of clay, and with stoneware pipes instead of earthenware; but if the old system is found to be of a most curly-whirly, serpentine type, down goes his redrainage after the same order and pattern, with but very little improvement. The writer illustrates instances of this, and could refer to many others in more than one district; but surely it is time that junctions (other than those upon the main trunks, where they can be got at) were done away with; that our pipes (other than those received by manholes) all had one direction only, and that towards the flow; and that the horrible ramps and different falls between sections and the old-fashioned bends of large radius made with straight pipes were done away with. As recently as 1904 the writer can record a redrainage of 400ft., with two clearing eyes only, and no other access whatever to traps or junctions. Such methods are, to the writer's mind, quite out of date. The aim should be to get the soil and drainage from premises to the sewer by the shortest possible route and with as few bends as possible, and with the provision of ample access.

The meeting will, I think, realise the need for standardisation in such matters. For instance, well understood although it may be that under the Dairies, Cowsheds, and Milkshops Orders, 1855 and 1886, dairies should be drained from an outside gully, some inspectors chose to include stables under this category; while the writer has known gullies to be built and rebuilt within. Again, in the Model By-laws of the London County Council a watercloset should be efficiently lighted and ventilated by a window of at least 2ft. area, and additionally assisted by constant means of ventilation (such as that afforded by an air-brick), and if the watercloset be entered internally it must be via a well-ventilated lobby or landing, and not via a living-room, workshop, or other habitable apartment. In practice, however, the air-bricks are ofttimes wholly omitted by some inspectors (relying upon the opening top and bottom of door) and by others insisted upon. The windows are often very large and not applicable to a reasonable or proper opening (at any rate, while in use), which could be obtained by the fixing of non-fastened, pivot-hung sashes, hung slightly out of centre, or by double-hung sashes in which the meeting-rails were kept apart by means of blocks.

There is little need to burden the meeting further with such details; but there is still the debatable question of combined drainage, and the extent to which such systems should be allowed, owing to the spread of disease through vitiated soil from one house-drain to another. Some authorities allow interception for every four houses, others more or less. The writer's hope is that after open discussion consideration may be given to the formation of a standardisation committee for drainage by the Institution. He feels that if an ideal is set up by means of a code of rules or regulations (dealing with the work which the regulated by-laws do not touch upon) some effective good would have been accomplished, even if acted or looked upon as a guide only.

NATIONALITY IN ART.*

(*Concluded from last week, page* 685.)

It would be tedious to make a catalogue of all the arts in this way, but there may be some interest in recalling some of the most marked characteristics of the different races. We must leave the East on one side for to-night—the question is too large—and also the semi-Eastern, Slavonic, and Balkan peoples, who have only within the last century begun to make their mark upon the artistic history of the world. After all, the nations that count for most with us are the five great nations of Western Europe—Italy, Spain, France, Germany, and England—and I do not think it is too much to claim that they count for most, and will continue to count for most, with the world at large. The first broad division, and the one that goes deepest, is that of Latin and Teutonic, which, in artistic matters, corresponds persistently throughout the ages with the division between the classic and romantic ideals—the art that concerns itself with types and the art that concerns itself with individuals. In connection with art it may be that Greek would be a truer race-name for the Classic ideal than Latin, for Greece is the fountain-head. But though the artistic impulse is Greek, the actual mixture of Grecian blood in these modern peoples is negligible, whereas the Roman descent is direct and clear. And on other sides of civilisation—law-giving, engineering, civil polity, and many others—Rome was so much of an originator, has stamped her mark so heavily on the Mediterranean states, that it is convenient and not inaccurate to keep to the usual term. In Greek art this Classic ideal, this searching for a type, is paramount. We see the Greeks possessed of the doctrine, most clearly expressed by Plato, that for each class of object in the world of sense there exists, in the realm of the absolute, the world of mind, a "type"—what Plato calls an "idea"—which manifests in the highest possible perfection all the qualities by whose possession individual objects of each class in the world of sense belong to that class; in a word, a pattern by their likeness to which individuals in that class approach perfection, and by their unlikeness exhibit a falling away. Thus an eagle is by so much the more an eagle as it approaches in every respect to the perfect likeness of the typical eagle, the "idea" of an eagle, and so with a chair, a horse, and what not, working up to what, in their eyes, was the most important matter of all a state. I do not mean that Greek artists in early times, or perhaps appreciably at any time, worked consciously under the sway of any such elaborated philosophical doctrine as this—it is not the way of artists, or a sound basis for artistic production—but the formulation of the doctrine shows us what were the conceptions floating about in the society where it was formulated, and the general tendencies of the workers. Now it is clear that, if such was the tendency, it made not so much for the expression of strong individual characteristics as for the constant search after perfection, the effort more nearly to realise the ideal by means of improvements in detail on the imperfect realisations of former attempts. And this is, accordingly, what we find. The general form of the Doric temple was early decided upon, and from the rude beginnings at Corinth and Olympia—themselves only the stone derivatives of much earlier wooden originals—there is a constant advance by slight alterations, changes in the number of columns, refinements in their spacing and in the profile of mouldings, the substitution of curves for straight lines to correct optical illusions, greater delicacy and more exquisite placing of enrichments, till we reach the final glory of the Parthenon, the closest approach to the "idea" of the Doric temple attainable by human imagination and handiwork. But through it all the original conception persists.

So with sculpture, you can watch the slow development, the gradual realisation of godhead from the grinning idols of the early age, step by step, line upon line, here a little, there a little, but without any violent break or marked change, up to the miraculous consummation of the Olympian Apollo and the Phidian Athena. And this

PREOCCUPATION WITH THE TYPE,

rather than with the individual or the peculiarity, is the hall-mark of the Classic or Latin school of art. Take French Gothic architecture. In the common acceptance, "Gothic" is the antithesis of "Classic," but, though diluted with the Gaulish, Frankish, and Norman strains in France, the Latin genius tells clearly throughout. See the gradual development, by variation in detail rather than in conception, of the great cathedrals of Notre Dame, Chartres, Amiens, Rheims. Contrast it with the almost wilful individualism of Wells, Salisbury, Winchester, Lincoln, so different one from the other, so experimental. The logical French mind early satisfied itself as to the most excellent method of covering a space, and you find the simple quadripartite vault persisting all through the Middle Ages, almost to the exclusion of other vaulting systems. Our individualist tendency leads us, having used this simple method once or twice, not to be content with exploring its further possibilities, but to wander off into something quite different, so we cover our vaults with a maze of subsidiary ribs, not so much for structural expression as in order to do something individual and different, until almost by happy accident they evolve themselves into a new structural method, the great fan-vaults of Westminster, Windsor, and Cambridge. Again, the French decided that height was a virtue in a cathedral; and again you see the same gradual development

* By H. MARTINEAU FLETCHER, M.A., F.R.I.B.A. A paper read before the Architectural Association, Nov. 7, 1913.

from Notre Dame (110ft.) and Chartres (106ft.) to Rheims (125ft.), Amiens (147ft.), and the climax in Beauvais (157ft.), where vaulting ambition at last "o'erleaped" itself. English builders, of course, did not aim at height, so that we can make no comparison of value here except to note, in general, how little reference, compared to the French, they made to what had gone before, striving rather to make each new building, and even each new part of a building, a fresh creation. Even the effect of length, which they undoubtedly valued, seems more often to have been got by accretion than of set purpose.

So it continues down to the present day. The great architectural school of the Beaux-Arts has continued in almost unbroken progression and imperceptible change since its foundation by Richelieu—was it not? Whatever ideas it has imported, it has always translated into French. The Colonnade of the Louvre, the buildings in the Place de la Concorde are results of the Italian Renaissance, but they are as definitely French, as distinct from contemporary Italian buildings, as Amiens from Milan. The Gothic outburst of the 19th century was sporadic, and has practically disappeared, because it was outside the main line of development. We for the last hundred years have organised a series of piratical expeditions to Greece, Mediæval France, Venice, Holland, Byzantium, and have brought home and hung the bleeding trophies all over our buildings in the shape of crude and untranslated details, forms, and decorations. The latest raid has been on the Beaux-Arts itself, and we see the usual result in an outcrop of steep roofs, zinc crestings, Greek profiles, and Union Jack glazing. The robber chieftains are waving the flag, as usual, like their predecessors, and calling out that they really have got the right thing at last. So did all the others, but they hadn't. Nothing is the right thing for us until you have translated it into the terms of its surroundings and made it English. In a dozen years the latest fashion will be what its conveyors probably call "vieux jeu." Look at Grosvenor-place and be warned in time.

Devotion to logic is indeed, perhaps, the leading note of the French genius. In literature it manifests itself in exquisite clearness, symmetry, conciseness—all the qualities that delight us in the best French prose. Read "Candide"; the merciless logic makes it a cure for too easy optimism that reminds you of the modern treatment of rheumatism by bee-stings. And this devotion to logic finds its outcome in conduct with a thoroughness impossible to the more good-humoured, less theoretical English nature. Our race has never produced, and I doubt whether it can ever produce, so perfect a theoretical and practical logician. It seems a heavy price to pay for a high racial development of the reasoning faculties, but it is easy to recognise in it the temper of mind that built Beauvais.

It would be interesting to speculate how far climate, and especially atmosphere, is responsible for national traits. The air of Greece is what Shakespeare calls "nimble"; there seems to be nothing between you and the sun—outlines are expressed with the divinest purity, the rocks and marbles and hills seem to beat back all the light that comes to them from the sky. Cross the Adriatic to Italy. There is a kind of sumptuousness in the very atmosphere that clothes the mountains with colour and answers to, or causes, the sumptuousness that is the note of the Italian genius. And with us, throughout our artistic development the most curious thing, considering what manner of men we are in other respects—empire-builders, freedom-lovers, constitution-makers—is our love of the pretty, the small, the homely. Is not this to be traced to the small scale of the English landscape, divided by hedgerows, bounded with woods and copses, changing at every county with the geological variety of the soil, and limited for many days in the year by the moist atmosphere that cuts off everything beyond a range of two or three miles?

THE VALUE OF NATIONALITY.

Well, what is to be done about it all? What is to be the outcome? Is nationality a valuable factor in art? Are we to foster it by cooping each nation up in its own box till inbreeding produces a weedy brood of insularities and provincialisms? Or shall we let loose a flood of washy cosmopolitanism that will break down all barriers and produce an average man and an average art all over the world? Science is seeing to it that the first alternative shall not come about. No barriers are proof against Marconi and the flying-man. To guard us against the second, which, to my mind, is far more disastrous, and would indeed take much of the gusto out of life, we must trust to human nature. Half a century ago it seemed as though the deluge might come to pass. Was it not Macaulay who looked forward with a pleased certainty to the extinction of the smaller nationalities of these islands, if not of the whole world, and the final victory of the English language over all others? Happily, as it seems to me, these utilitarian prophecies have not come off, and we live in the midst of a strong and quite spontaneous revival of national feeling. Ireland, Scotland, and Wales each is asserting herself and laying claim to her own in language, history, institutions, and arts.

> The world is so full of a number of things,
> That I'm sure we should all be as happy as kings,

sings Stevenson's little boy. If we had to add in a footnote that the "things," instead of being delightfully various according to the country in which we found them, were all turned out of the one mould of the Beaux-Arts or the Academy, the happiness of the average king is just about what we should feel! What fun! How stimulating to come across brasswork from Birmingham in Japan! Do you know that fascinating book on a fascinating subject, Pierre Loti's "Un Pèlerin d'Angkor"? It is a description of what, ever since I first read Fergusson, has seemed to me one of the most astonishing and mysterious buildings in the world, the great temple of Angkor or Nakhon Wat, hidden away in the jungle of Cambodia. Fergusson himself, not exactly a passionate writer, is stirred to eloquence by the accounts he had heard of it, and the photographs he had seen, and an artist in travel and language like Loti is not likely to minimise its romance. The whole book is absorbingly interesting—the journey up the river and through the jungle; the half-ruined temple, inhabited for centuries only by a handful of chanting Buddhist priests; the cloisters, 800ft. square, their back walls covered from end to end with huge bas-reliefs of mythical battles and dancing girls; the great bats that hang from the vaults; the many hundred yards of sculptured cornice, formed of the gaping jaws of myriads of three-headed snakes. But the passage I am going to quote does not deal with Angkor, but with another temple which he saw in the earlier part of his journey at Pnom-Penh, the capital of Cochin China. It runs as follows:

"To-day, on a solitary prowl as the sun rose at half-past six, I passed through the gate of a courtyard of the palace, a great white-paved courtyard. Alone in the middle of the brilliant empty space a graceful white-and-gold pagoda, its roof bristling with gold points; alone on the sides of the little solitude two tall and surprisingly-pointed golden belfries, based upon rockwork adorned with orchids and rare plants. Not a soul to be seen. But the silence that prevails wears a character of its own; a rustling, like a drone, mingles with it, but disturbs it not—a vague, airy music, not immediately to be defined. It is the chiming of the little silvery bells that hang from every point of the belfries and roof; the lightest breath sets them faintly ringing. This pagoda is quite new; it blinds you with the whiteness of its marbles and the sparkle of its gold. The window-heads are of gold filigree, clear-cut like jewel-work on the snowy background of the wall, and topped with pointed spirelets. Its roofs, covered with gilded tiles, have horns at every angle—long, long horns that bend downwards, curve up again, threaten in every direction! Compared with these horns, those of the Chinese pagodas would look quite rudimentary, barely protruding. Many giant bulls, you would say, must have been despoiled to ornament this strange temple. The various peoples of the yellow race have been possessed for ages with this idea of horned roofs for their religious buildings, but the Cambodians lead them all in extravagance. Steps drawing near, heavy steps. Ah, three elephants! Without noticing one they cross the court. Full of purpose they seem and of business, like people who know what they are about. The sound of their tramp and of the bells on their collars breaks for a minute the æolian chime that falls so gently from above, and then, as soon as they have passed, again the musical silence. It is adorable here in the semi-cool purity of the morning. The open doors of the pagoda invite one to enter. The ceiling and the walls are all glistening with too brilliant gold, and my steps echo on the brand-new sheets of silver with which it is paved all over. So even now, in our own age, there are still countries imbued with the idea of building such sanctuaries as this!"

Now, can you conceive, or, having conceived, can you welcome, a cosmopolitanism which would overspread these countries with bastard European buildings, and turn their designers and craftsmen into hangers-on of the Ecole des Beaux-Arts? Yet under present tendencies it is a very real and imminent danger.

THE STYLE FOR THE NEW DELHI.

Of all problems connected with nationality, it is hard to imagine one more baffling than that of the new city of Delhi. Is it capable of an ideal solution? Probably not. The conditions fight against it. The traditions of the two races are too radically different; the form of administration, the government of a conquered nation by migratory alien officials is contrary to the spirit of continuity and goodwill essential to any co-operative form of art. Add to this the usual conflict between the stateliness of a great capital and the outcry of modern commerce for convenience at any price, the utterly different angles from which all questions will be faced by designers and workmen, the Office of Works' attitude adopted towards all buildings by the Imperial authorities. No European, one must remember, goes to India just because he is an artist and sees there an opportunity for his life-work. Such artists as may from time to time be found there are mere birds of passage on the look-out for artistic "copy," studies of intense light, vivid colour, native costumes, and the like. Those who make their life there are soldiers or men who care about problems of administration, roadmaking, justice, questions of conflicting religions, famines, bridges. There is an infinite deal to do, too few men, and too little to do it. Moreover, the type of mind which grapples gladly with work of that kind is one to which artistic questions make little appeal, so that when you have got your architects out and set them to work, they will find the surroundings far from sympathetic. Are they to work in a European manner, or a native, or a compromise? The questions have been raised, and, in the absence of any details of the final scheme beyond the ground plan, we may still discuss them. If the first, they must give up the hope of enthusiastic help from their workmen, and resign themselves to the uncongenial task of imposing their own ideas from above. The second alternative—a Mohammedan, Jain, or Dravidian style adapted to the complexities of modern planning by English architects may be abandoned after one shuddering glance. Conceive a whole city of Brighton Pavilions! One can, however, imagine, as a sort of compromise, a city of pillared porches and verandahs laid out, as to its main lines and masses and structure, in accordance with the published plan, but with all details of marble, stone, cement, or plaster left to the native workmen; and if there is any remnant of the old skill and sense of style left, one can imagine this finally shaping into something sumptuous and suited to the climate and the light. If fertility in conception can insure success, Mr. Lutyens should succeed. But there are limits to human optimism when one pictures all the struggles to be gone through between idea and realisation, archi-

lecture, and officialism; and if he does succeed, I declare he will deserve dedication, with a special sect devoted to his cult, like John Nicholson after the Mutiny.

NO PROTECTION NEEDED BY NATIONALITY.

I am not advocating any hidebound conservatism in regard to nationality in art. The nationality that requires to be cosseted and guarded from the sight or touch of any other nationality is probably not worth keeping. I do not curse the Renaissance, the greatest remover of national artistic landmarks that the world has known till the age of science. Free intercourse in ideas adds a further ripening and fortifying to a mature and strong nature. Stagnation is death, and intercourse is life; but surely highway robbery is a morbid form of intercourse. "I take my good things when I find them," said Molière. Yes, but he transformed them into his own before he gave them to the world. Let us study the art of France, of Italy, of Japan, if you will; but only on condition that whatever we take from them we transmute in our own crucible. A very old passage in "Paradise Lost" thus describes the Tower of Babel:

> God . . . in derision sets
> Upon their tongues a various spirit, to rase
> Quite out their native language, and instead
> To each a jangling noise of words unknown
> Forthwith a hideous gabble rises loud
> Among the builders, each to other calls
> Not understood, till hoarse, and all in rage
> As mocked they storm: great laughter was in heaven.
> And, looking down, to see the hubbub strange
> And hear the din, thus was the building left
> Ridiculous, and the work Confusion named

Well, the bequest of that Confusion to posterity has been, among other things, the temples of Karnak, the Parthenon, and Chartres Cathedral, perfectly different and differently perfect. The bequest of the unanimity that preceded it was a misbegotten tower that failed even of its silly object. Which will you choose?

HOUSE-DRAINAGE LAW.*

By Mr. W. Addington Willis, LL.B.

LECTURE I.—THE PIPE OF DISSENSION.

Mr. Walter Hunter, M.Inst.C.E., member of Council, kindly took the place of Sir Maurice FitzMaurice, C.M.G., Chadwick Trustee, in the chair at this lecture.

The law of sanitary drainage, said the lecturer, is scattered piecemeal among many Acts of Parliament, some relating to the City of London, others to the remainder of the Metropolis, and others, again, to the provinces, and even here the law is not the same for all parts, since, besides numerous local Acts, there are adoptive statutes which may or may not be applied to a given district. These various statutes, and the decisions thereon, constitute a puzzle of uncertainties, inconsistencies, and sometimes absurdities. After a brief sketch of the history and evolution of the present law the lecturer proceeded to a consideration of the eternal question of "Sewer or drain?" The question is of practical importance. Upon its correct answer depends the liability of maintenance; and if the pipe in question is a sewer on private land the owner's proprietary rights are affected by the council's rights of access and the prohibition against building over sewers without the council's consent, which it is in their power to give or withhold, and for the giving of which terms and conditions may be imposed. Owners frequently hesitate between the alternatives of present financial relief coupled with future possible restrictions on building, and a present liability to maintain the pipes with a free hand for developing their property in the future. As a rule, however, the bird in the hand of present financial relief is the most welcome, and the owner seeks to establish that the pipe in question is a sewer vested in the authority.

The existing uncertainty in the law, or in its application, is to be deplored, and is due to the Legislature having attempted to be too specific and precise in defining terms. The common-sense view is that what a man constructs on his property for his own convenience ought to be kept in order by him. This common-sense view was the one adopted by previous generations in the local Acts before 1848, and in the Model Act of 1847 relating to the subject. In 1848, however, the Legislature set out to define the terms "drains" and "sewers" for all times and circumstances, and repeated this in later statutes. The lecturer next proceeded to discuss the definition of "drain," so far as it is common to all areas. The definition is so cast that any pipe which does not exactly coincide with the definition falls into the category of "sewer." The explanation of the word "curtilage" was assisted by the exhibition of diagrams representing the systems of drainage in the three leading cases. If premises are separately occupied and separately rated they will not be considered as "premises within the same curtilage," merely because there may be common access and common accommodation.

Drains may be used for rainwater only, and, according to the cases, may include the stackpipes on houses. All drains which are not "drains" are "sewers." But as it is essential that a sewer should, generally speaking, carry its contents away, pipes which end in a cesspool are not sewers, notwithstanding the apparent decision to the contrary in "Pinnock v. Waterworth." This proposition was illustrated by two or three cases—"Meader v. West Cowes Local Board," "Button v. Tottenham U.D.C.," "Pakenham v. Ticehurst R.D.C.," and diagrams were shown to explain these decisions.

One of the most interesting and far reaching discoveries of modern times is that a sewer, vested in the council, may exist entirely on private property, and it was the establishment of this principle which has given rise to many of the anomalies and hardships (from the ratepayer's point of view) existing at the present time. The law of drainage has its doctrine of conversion, for where two drains from separate sets of premises meet they generally constitute a sewer from the point of juncture. These joint sewers may be made lawfully or unlawfully. The astonishing feature of this doctrine of conversion is that, broadly speaking, if a private individual effects a combination of drainage surreptitiously and without authority, the law rewards him, or, at least, his successors, by throwing the liability of maintaining the unlawful connection on to the ratepayers. A few illustrations were given of what the individual can accomplish in the way of getting rid of the expense of maintaining his house drainage. Eight boroughs in London spend on an average annually £2,100 each in repairing these unauthorised sewers. The catch-phrase, "Once a sewer always a sewer" must be used and received with caution. A recent case has shown one exception, at least, to this—namely, when a Metropolitan council exercise their power to compel a wrongdoer to restore unlawfully constructed drainage to its proper condition. Even if it formerly became a sewer by such wrongful acts it does not continue to be a sewer after the restoration.

The lecturer concluded with a consideration of the question whether a rainwater-pipe fixed to a house can be a sewer. Mr. Justice Channell in one case regarded the suggestion as ridiculous, but at the same time admitted that decided authorities gave support to it. Ridiculousness is not a fatal termination to a proposition in drainage law. If this were entirely new ground anyone would hesitate to answer the question in the affirmative, and so probably would the Courts, if they were not bound by decided cases. After stating the facts and decision in "Selles v. Fulham Borough Council," the lecturer pointed out that the provision of gutters and stackpipes was the subject of by-laws and statutes for sanitary purposes just as much as was the provision for the drainage of yards. Once it was admitted that the definitions of "drain" and "sewer" in sanitary legislation extended to pipes conveying fresh or rainwater only, it seemed impossible to draw a distinction in principle between a horizontal pipe and a vertical one, or between one affixed to the building and one carried on a concrete bed beneath or at the side of the building. Some day an enterprising and litigious householder will claim damages from a council for injury done by a leaking stackpipe, or call upon them to repair it. The Court of Appeal may then have an opportunity of distinguishing, if they can, such a case from the decisions already given.

The next lecture will relate to the rights and responsibilities of citizens and councils, both in the provinces and in London, particularly with reference to drainage of new and existing buildings, the provision of outfalls for drains, and the maintenance of drains. It will conclude with an illustrated description of the manner in which the central authority in London have discharged their statutory duty of dealing with sewage so as to prevent its discharge into the river Thames. It will be given at the Institution of Civil Engineers, Great George-street, on Monday, November 24, at 8.15.

*Chadwick Public Lectures. Delivered at the Institution of Civil Engineers, Great George-street, Westminster, S.W., on Monday, November 17.

THE LONDON COUNTY COUNCIL.

At the meeting on Tuesday of the London County Council a report was received from the Improvements Committee recommending a scheme for the widening of East Hill and Wandsworth High-street, in connection with the proposed tramways from York-road to the existing terminus at the top of East Hill, to a total width of 60ft. The net cost is estimated at £68,000, of which the Wandsworth Borough Council has agreed to contribute a third.

The Museums Committee reported that a lecture-hall and library had been added to the Horniman Museum, Forest Hill, at a cost of £4,750, entirely borne by Mr. E. J. Horniman.

The Main Drainage Committee recommended that experimental works be carried out in connection with the treatment of sewage at the outfalls and an examination of the river water, at an estimated outlay of about £1,780.

The Asylums Committee recommended the approval of plans for providing additional accommodation for nurses at Cane Hill Asylum, at an estimated cost of £2,410.

THE LEEDS FIRECLAY CO., LTD.

There was a very large attendance of shareholders at the thirty-fourth annual meeting of the Leeds Fireclay Company—the first since the reconstruction of the directorate—held in the Philosophical Hall, Leeds, last Monday. Mr. C. F. Spencer, of Halifax, presided.

The chairman said it would be within the recollection of everyone that after the last annual meeting a number of shareholders got together with a view to forming a shareholders' protection committee. The work of that committee took concrete form in February of this year, and as a result of it the late chairman of directors, Mr. Alfred Barrett, resigned all his offices and had now absolutely no connection with the company beyond being agent for a few insurances. When Mr. Barrett resigned the committee had asked him (the chairman) to fill the vacancy, and he had done so. Then Messrs. W. H. Allen and B. J. W. Lone had resigned their seats voluntarily, and made way for Messrs. H. A. Eastwood and F. H. Brooke. The balance-sheet before him was made out by the late directors; but the new members of the board neither accepted it nor assumed any responsibility for it, therefore it would be necesary for him to deal with the various items almost seriatim.

BALANCE SHEET CRITICISED.

Turning to the Creditor side of the balance-sheet, the chairman said that the item "By freeholds, buildings, fixed machinery, etc., £720,041," showed an increase of £1,544, as compared with the last balance-sheet. The amount was made up as follows: Wortley works, £341,931; Burmantofts, £194,378; Fieldhouse, £141,402; Elland-road, £42,946; Hipperholme, £284. The second item, "Leaseholds, buildings, fixed machinery, etc.,

£38,341," was made up of the cost of the new pit at Fieldhouse, £3,600, and at Hipperholme a sum of £34,741, which represented the value of the leasehold. Since last year £545 of depreciation had been debited to Hipperholme, and £500 had been written off in respect of a new fan at Fieldhouse. The main item going to make up the £21,196 of expenditure on New Works account was £13,794 for the new works, site, etc., at Geldard-road. The fourth item, "Investments in shares and freehold properties, £314,223," was one which the shareholders had always wanted more information upon. From what he could gather, the late board had seen fit to add together the investments in freehold properties and the investments and reserves, but that did not mean an increase of assets, but the amalgamation of the two for the purposes of the balance-sheet. These investments were not made by the late board, but were a relic of the past, and he did not think that they showed the really true position. He did not think that many of them would realise 50 per cent. of their cost. The £101,000 debentures, etc., invested in an industrial concern had turned out exceedingly satisfactory, and resulted in a profit. Many of the other assets were, from the building point of view, not worth anything like the amount stated, and from a mineral point of view, also, they were a good way behind the value set against them, so that the money which at one time might have been realisable could only now be obtained if a beneficent Government came along and took the assets on terms similar to those on which the Low Moor Company offered land to Mr. Lloyd George.

It would have been better, he proceeded, if the company had not been saddled with such a great amount of land as they held at present. The gross yield in property only came to 2.1 per cent. With regard to the item of £30,673 for movable plant, horses, waggons, etc., he pointed out that £2,500 of the sum represented the value of patents which had expired, and ought, therefore, to have been written off years ago. The debenture discount account of £3,939, he said, represented the difference between realised value and face value—between £80 and £100—and the £3,187 for minerals paid for but not yet worked applied to a period of four years yet to run. The balance-sheet gave the stock-in-trade value as £143,889—a reduction of about £18,000 as compared with last year's balance-sheet. The new members of the board were of opinion that the stock had not been valued on the correct or healthiest basis; but time would prove whether they were right or wrong. When they came into office in September they found that a hillside had been counted in as clay, and that had to be written off. The item of £73,221 owing by sundry debtors represented good concrete assets, but £5,135 had been lost as a bad debt to a Canadian firm.

A "DIMINISHING" RESERVE FUND.

Turning to the other side of the account, the chairman commented upon the fact that the reserve fund (£29,846) was a gradually diminishing quantity, and (leaving out the odd figures) mentioned that the sales last year had increased by £42,000, and the stock had decreased by £18,000, so that the goods made had increased by £24,000 in value. The coal consumption had increased by 34 per cent., while the sales had increased by 17 per cent.—a discrepancy that ought not to exist. As prices had increased by 2½ per cent. the real increase of sales was 14½ per cent. The increased cost included £9,011 in increased wages, £14,376 in increased cost of fuel, £5,104 more for carriage, and £769 more for packing. Altogether the cost of production had risen from £184,352 to £217,904—an increase of £33,552, or 18 per cent.

The position of the company was exceedingly difficult to explain; but it was better than it had been for some years past, and they were in a position to get all the liquid cash they required for developing the foreign and colonial trade. The company had a very good name for its supplies. They had set up a standard of quality unsurpassed by any of their competitors; in fact, their competitors had in the past traded upon the financial position of the Fireclay Company, but they might do that as much as they liked in the future. The chairman went on to mention the method adopted by the new board for the reorganisation of the company, and though he said that he could not be too optimistic, he was sure that they were now on the right lines.

The report and balance-sheet were adopted after some discussion, and the new members of the board of directors were formally re-elected to office. Messrs. Beevers and Adgie were reappointed auditors.

The corporation of Northampton have instructed the borough engineer to prepare plans for the erection in Bath-street of district baths and washhouses, to be built at an estimated cost of £3,700

The Local Government Board have sanctioned the Shipley Urban Council's application for borrowing powers in respect to the erection of twenty-one houses at Dockfield, suitable for the working classes.

Blocks of working-class dwellings are about to be built on the south side of Warner-street, near Camberwell New-road Station, from plans by Messrs. Joseph and Smithem, of Queen-street, Cheapside, E.C.

The foundation-stone of St. Jude's Church has been formally laid at Swansea. Mr. E. M. Bruce Vaughan, F.R.I.B.A., of Dumfries-place, Cardiff, is the architect, and Messrs. Lloyd Bros. are the contractors. The cost will be £7,784.

The foundation-stone of the new Roman Catholic church at Billericay, Essex, has been formally laid. Mr. Edward Goldie, F.R.I.B.A., of Upper Phillimore-place, Kensington, is the architect, and Mr F. W. Jarvis, of Brentwood, the contractor. The cost will be £1,300.

The Ilford Urban District Council have decided to apply to the Local Government Board for sanction to a loan of £27,500 for carrying out works of road improvement in High-road and Ilford-lane, and to a second loan of £21,578 for installing a refuse destructor.

Definite steps have now been taken with reference to the Engine-room Heroes' Memorial at Liverpool. The agreement, after being approved of by the Sites and Designs Committee, in whose hands the matter was left, has been signed by the sculptor, Sir William Goscombe John, R.A. The work is to be completed within two years.

St. Andrew's mission church at New Earswick, which was dedicated last week by the Archbishop of York, has been erected on the high ground on the Huntington-road side of the model village, which it overlooks. It is built of red brick, and measures 120ft. by 30ft. Mr. Crombie, Huntington, is the architect, and Mr. Wm. Bellerby the contractor.

The city corporation of York have been informed that the Local Government Board have granted their sanction to the borrowing of the sum of £2,600 and £278 in respect of the municipal school for girls, and have also sanction to the borrowing of £2,500 for the piling of the river bank and the laying out of the land between Lendal Bridge and Scarborough Bridge.

The Local Government Board have sanctioned a loan for providing a screening and dredging apparatus at the new sewage works, Durham. When this apparatus is installed, these works will be one of the most modern and up-to-date sewage-disposal works in the Northern Counties. Tenders are to be invited at an early date. The engineers are Messrs. Taylor and Wallin, of Newcastle-upon-Tyne.

The University of Bristol has made a regulation whereby the Bath Municipal Technical School will be connected with the Faculty of Engineering of the University, which is provided and maintained in the Merchant Venturers' Technical College. It will be possible for a student to take the preliminary and intermediate courses for the University certificate in engineering, either in whole or in part, in evening classes in the Bath Technical School.

A Local Government Board inquiry was conducted at Whitby last week by Major Norton, C.E., and Mr. R. C. Maxwell, into the application by the Whitby Urban Council for a Provisional Order to empower them to effect improvements in the town. The powers sought are for the purchase and regulation of the Spa grounds, and the re-erection of buildings, the purchase of the cliff front and foreshore, the construction of the continuation of the North Terrace-road and the taking over by gift of the Church Hill Estate as pleasure-grounds

OBITUARY.

Charles Babcock, Professor Emeritus of Architecture in Cornell University, and the last surviving founder of the American Institute of Architects, died at his home in Ithaca, N.Y., on August 27, in his eighty-fifth year. Professor Babcock was born at Ballston Springs, N.Y., on March 29, 1829. He was graduated from Union College in 1847, after which he studied architecture under Mr. Richard Upjohn, was early admitted to a partnership with Mr. Upjohn and his son, Richard M. Upjohn, and shortly thereafter, in 1853, married Mr. Upjohn's daughter, who still survives him. In April, 1857, in conjunction with Richard Upjohn, Richard M. Hunt, and Leopold Eidlitz, he united in organising the American Institute of Architects. Of the group of thirty men who founded the Institute nearly every one became famous in later years. Soon after the founding of the Institute Mr. Babcock retired from active practice, took orders in the Episcopal Church, and was rector of the church at Greenwood Ironworks (now Arden), N.Y., from 1863 to 1871, when he was called to the newly-established Chair of Architecture in Cornell University. At that time the Massachusetts Institute of Technology had the only school of architecture in the United States that had attracted any attention from the profession; but the new department at Cornell gained recognition and support from the beginning. Within a few years architecture had grown from a department of engineering to a department of the University, and in 1896 the department of architecture was made a fully organised college with Professor Babcock as its first dean and director. In 1897 Mr. Babcock retired, yielding his position to one of his own pupils. He had rendered valuable service to the profession as consulting or advisory architect on a number of important works, and he continued to hold the position of advisory architect to the University until his death. In recognition of his service in research work he was in 1892 elected an honorary and corresponding member of the Royal Institute of British Architects.

The death is announced of Mr. James Jerdan, architect, senior partner of the firm of Messrs. J. Jerdan and Son, of Castle-street, Edinburgh. Mr. Jerdan, who was a native of Roxburghshire, went to Edinburgh about thirty-eight years ago to fill an appointment with Messrs. Wardrope and Reid, architects. Twenty-five years ago he started business on his own account. He designed some important buildings, particularly mansion-houses, in his day. He was for twenty-five years lecturer on architecture and building construction at the Heriot-Watt College, which position he resigned, on account of failing health, at the close of last session. One of his sons is an architect and another a surveyor.

Mr. R. Gerald Trollope died suddenly from heart-failure on Monday at his house, Chiltern End, near Henley-on-Thames. Mr. Trollope, who was in his sixtieth year, had been a partner in the firm of Messrs. George Trollope and Sons for many years. He leaves a widow and one son—Mr. R. J. Trollope.

The death occurred at Sunderland on Tuesday, in his eighty-sixth year, of Mr. Robert Scott Briggs, J.P., senior member of a firm of timber merchants. For thirty-two years he was a member of the River Wear Commission, as representative of the local landowners. He was vice-chairman of the traffic committee, and eventually succeeded the late Sir James Laing as chairman of the commission. Up to the time of his death he held the office of chairman of the Income-tax Commission for the Sunderland district.

The almshouses for the aged poor in Old Market-street, Bristol, founded by Fenwick Richards in 1672, have just been rebuilt from plans by Sir Frank Wills and Sons, of that city.

Messrs Crosby Lockwood and Son 7 Stationers' Hall-court, have just issued a new illustrated catalogue of their scientific and technical publications, which they will send a copy of post-free to all interested.

Current Calamo.

The principal value of the letters we publish to-day, and any others that may follow, on the proposals of the Council of the R.I.B.A. and Registration, lies, we think, in any encouragement they may afford to really full discussion at the coming meeting on Dec. 1. There was no such adequate discussion at the meeting on Jan. 8, 1912, at which the proposals for the absorption of the Society of Architects and the promotion of a Registration Bill were "referred back." Those who will refresh their memories by reading the report of that meeting, which we were not able to publish till March 1, 1912, will find that after the moderately expressed and informative speech of Mr. J. S. Gibson, who proposed the adoption of the recommendations of the Council, and the well-put pleas on their behalf by Mr. A. Needham Wilson, who was the seconder, not a word of support thereof was uttered subsequently by any other member of the Council, or in reply to the attacks that followed. During months of deliberation the then members of Council must have arrived at the conclusion that their recommendations were legitimately beneficial. At the outset the President announced that it was in no way the work of the Council to hurry the consideration of the matter; and again, at 10 p.m., he said "it would be the simplest thing to adjourn" then. Yet five minutes later he put the amendment to the vote, and there was an end of the fruit of the Council's work.

Possibly that may be so next Monday week. If so, it will be a pity. Some will say—quite unfairly, perhaps, that Registration has once more been got rid of by a side-wind, purposely blown hot in favour of proposals it was known would never be adopted. Such imputations, and others, will be best avoided by full and fair discussion, properly taken part in by a fairly representative number of members of the Council which is responsible for the present recommendations. We shall also hope to hear the reasons for their acceptance—if there are any, of those who practically killed the proposals made at the meeting of Jan. 8, 1912. We trust also that ordinary non-partisan members, who have no ends in view but the real welfare of the profession, but who have not always the glib speech of the more practised debater, will insist on being heard, and that they will be listened to. In our opinion it would be far better if the professional journals were admitted to the meeting and enabled promptly to report it for the benefit of the mass of members who cannot be present, instead of keeping them waiting a month or six weeks. All we can do, unfortunately, is to insure opportunities for something like free discussion beforehand.

Whether water supplied for the restaurant business carried on in a public-house is water for domestic or trade purposes was a question the House of Lords was last Friday asked to answer under the Metropolitan Water Board Act. The contention of the Water Board was that water used by a public-house for its restaurant was not for domestic purposes within the meaning of the Act, but for a trade purpose out of which the occupant of the public-house made a separate profit. The actual sum sued for was only five shillings, but the principle at stake was an important one from the point of view of the Water Board, as, if they are successful in their contention, it will mean an addition to their revenue of from £80,000 to £100,000 per annum. The County-court Judge upheld the contention of the appellants that the water used by the tenant of the public-house in question came within the definition of water used for trade purposes, for which the Board was entitled to charge over and above the 5 per cent. on the rateable value of the house for the supply for domestic purposes. Both the King's Bench Division and the Court of Appeal unanimously reversed the decision.

It was urged before the House of Lords that, as the decision stood, it might be contended that it would cover even the case of a laundry. Lord Halsbury considered the contention of the Water Board had been carried to an absurd extent. If an old lady had someone in to tea, for which she made a charge, the water might be said to be for a trade purpose. The same would apply in the case of a person keeping lodgers. To an inquiry by Lord Dunedin if there was any trade in which no water was used, counsel instanced tailoring. "Oh," remarked his Lordship, "even a tailor sometimes requires to damp his sponge." Lord Dunedin also put a series of awkward questions from the appellants' point of view. It is not difficult to guess what the decision of the House of Lords will be, for at the conclusion of the case for the appellants, Lord Halsbury announced that if their Lordships considered it necessary to hear arguments for the respondent, intimation to that effect would be made.

We are glad the Dean and Chapter of St. Paul's have made it known that no further memorials of the dead can be placed on the main floor of the Cathedral. The decision does not apply to the crypt, where there are more memorials than above; and where also, we imagine, it will be necessary ere long to limit, and ultimately to refuse, admission. Of course, as the Bishop of Rochester pointed out a few days since, and we have often remarked, if cremation became general, and memorial-erectors would be a little more modest in their requirements, our churches, and St. Paul's among them, might for many years to come suitably house the great dead and sufficiently record their memory. Surely a more fitting use of the "ashes of our fathers and the temples of our gods" than the degradation of the latter to the level of show-houses of what are often mere cenotaphs?

The travels and vicissitudes of some of the railings formerly round St. Paul's Cathedral will be noted with interest by the archæologists of future centuries, and may puzzle some of them. Some of them, it seems, found their way to Toronto, according to a correspondent of the *Engineer*:

"A portion of the railings are in this city in High Park, where they were placed by Mr. J. G. Howard in 1875, round the tomb which he built in the park, and where he and his wife are buried. After their removal from St. Paul's, the railings were purchased by Mr. Mountcastle from Mr. Hogarth and sent on the steamer 'Delta' for Toronto in 1874. The 'Delta' went ashore five miles from Cape Chat Light. Some of the railings were recovered from the wreck and sent to Montreal. They were brought from Montreal by Mr. Howard, and repaired by the St. Lawrence Foundry before being erected in their present position. The following inscription was placed on the railings by Mr. Howard, and is still in position:—

"St. Paul's Cathedral for 200 years I did enclose.
Oh, Stranger, look with reverence:
Man, Man, unstable man,
It was thou who caused the severence.
"Nov. 18, 1875. "J. G. H."

Toronto, October 28th. P. W. BARNES.

As a matter of fact, it was the increasing traffic which compelled the restriction of the churchyard. But they were good railings, anyhow; and whoever was responsible at the time might have made legitimate use of them however, and saved them from the clutch of the ocean and the orthography of their purchaser.

One of the pleasantest memories of the week has been a brief but cordial visit by Mr. S. Brandt Walsh, of the United States Supervising Architect's Office, a Department analogous to our own Office of Works, which has the design and control of all Government buildings throughout the vast area it administers. Mr. Walsh was accompanied by his charming wife, who assured us she had enjoyed every minute she had spent in England. Mr. Walsh had been specially desired to call by his chief, Mr. Ginder, and convey his kindly appreciation of the BUILDING NEWS, which, we are glad to know, is regularly read and appreciated in the office as the chief British architectural journal. As may be judged, the activities of the American Supervising Architect are tremendous, and the energies of its inside staff and its "Field-Force" are pretty heavily taxed, the work being generally brisk and at widely-distant centres. In spite of recent increases here, we gather that the cost of building materials in the States is at least double the average here, and requirements being generally exigeant, it was not as often as might be wished that money could be spared for due architectural treatment externally. We hope, at an early date, by Mr. Ginder's courtesy and Mr. Walsh's good offices, to give our readers some illustrations of one of the largest Governmental buildings now nearing completion, with some interesting details of its construction.

To correspondents who have addressed us on the unpleasant subject referred to in our fifth paragraph on this page last week we can only say as yet that we are collecting further evidence. Whether we shall publish that presently depends on events, over some of which we have no control. At the present moment it may be inadvisable to do so. If others more concerned than we ourselves think so, evidence of all the facts will be carefully preserved against certain contingencies, when it may be produced amid quite different surroundings than those of our own columns.

Part of the shipping facilities of Sydney Harbour is to be remodelled at an expenditure of £6,500,000. Extensive additions to the wharfage are also outlined for other parts of the harbour. The new wharf frontage will be 42,600ft., and will provide accommodation for seventy-one vessels, each 600ft. in length.

A scheme for the widening of the bridge over the railway at High-street, Putney, is being deferred in the hope that the Road Board will contribute to the cost. £6,000. The London and South-Western Railway Co. are willing to pay £875, and the London County Council one-third of the remainder. The Road Board has hitherto refused to make a grant; but the Wandsworth Borough Council will resubmit the scheme to the Board for further consideration.

The memorial erected in Cranbrook Church to the memory of Lieutenant Boyd Alexander, Rifle Brigade, who was killed on his trans-African expedition, and to Captain Claud Alexander Scots Guards, who died on a former expedition in Nigeria, will be unveiled by Lady Scott and dedicated by the Archbishop of Canterbury to-day (Friday). The memorial consists of a panel in white marble, bearing medallions of the brothers Boyd and Claud Alexander, designed and executed by Mr. Robert Colton, A.R.A.

Correspondence.

"CHARTERED ARCHITECTS" OR STATUTORY REGISTRATION.

To the Editor of the BUILDING NEWS.

SIR,—The publication of your article on this important subject in last week's BUILDING NEWS opens the way for a little public discussion of the matter before the R.I.B.A. meeting on December 1, when the proposals which have been made are due for formal presentation. There is a good deal to be said for the adoption of this course, at least so far as the wider aspects of the matter are concerned, the smaller and more parochial aspects—such as the effect which would be produced upon the status of present Fellows and Associates, and the obvious malignity of the proposed omission of members of the Society of Architects from the list of the "Chartered"—being left for consideration within closed doors.

Thus limited, there appear to be three questions which, above all others, would be the better for open discussion—viz.:

Are the proposals practicable?

Are they likely to promote architectural advance?

Are they more likely to do this than anything else that could be devised?

For my part, I greatly doubt their practicability. It would, I feel sure, take a great deal to persuade the Privy Council to advise the King to grant another Supplemental Charter so soon after that of 1909, especially if it contained any controversial matter, or were met with any organised opposition whatever. It would take a great deal more persuasion to obtain Charter sanction for the issue of a scale of fees payable to "Chartered Architects" under the ægis of the Privy Council, and so to convert these folk into a trades-union of the worst description.

I also doubt whether any substantial gain would accrue to architecture. A voluntary and bogus degree, such as that of "Chartered Architect" would be, obtainable by passing a low-grade examination, would neither be of educational value nor add to the dignity of the profession. It is not in the least the ideal at which Registrationists are aiming, which is the formulation of a sound examination, gradually rising in standard as time goes on, and highly educative, which everyone would in future be *compelled* to pass before being allowed to earn his livelihood by the practice of architecture.

This answers my third question. If the solicitors and Parliamentary agents consulted by the R.I.B.A. have reported unfavourably to the prospects of the successful promotion of a proper Registration Bill—well, I, for one, would like to know the exact wording of the case submitted to them. You have yourself, Sir, put your finger upon a point which may have been unnecessarily included, for it is fairly common knowledge that the R.I.B.A. Council wishes to be the sole controlling body of the profession, while the precedent of other professional organisations is for the creation of an independent General Council, on which the Privy Council is strongly represented. If, added to this, the legalisation of a Scale of Charges was included as an essential, an unfavourable report was a foregone conclusion. Other mistakes also may have been made. Anyhow, after thirty years' experience of the matter, I am as firmly convinced as ever that Statutory Registration is within the range of the practicable. Having waited so long, I think it worth while to wait a little longer, encouraged by the fact that at length the entire architectural profession has come round to my views, rather than to tamely accept an ineffectual substitute.—I am, etc.,

G. A. T. MIDDLETON.

SIR,—As they say in America, "we are up against a tough proposition," and no doubt when the meeting at Conduit-street takes place on December 1 many members will want to have a say. More than likely some, for the good reason that all cannot speak at once, will be prevented from joining in the debate. It can do no harm, therefore, to ventilate a few opinions beforehand, in order to clear the ground. Whatever happens, it is well to remember, in the face of so much diversity of views, that there is no bond of union so strong as the bond created by common dangers faced in common.

The exclusion of the Society of Architects, however difficult the details of that union of forces may have been, was, I venture to say, not only an error of tactics, but it was foolishly shortsighted. I hold no brief for that body, and, unlike some who have been more or less associated with its membership and yet opposed the inclusion of the Society, I have never had any dealings with it from first to last; but I foresaw what the Council of the Institute now appear to have passed over in their report, that the cause of Registration must be jeopardised by any such lack of union as this necessitates, be the Society what it may.

According to the report, which we are called upon to consider at this Special General Meeting, the Institute now proposes, rightly or wrongly, to create "Chartered Architects," who may, if they like, remain outside any professional body whatever, while, at the same time, no mention is made of the Society. When the proposal with regard to the fusion of that body was "referred back for further consideration by the Council" on January 8, 1912, I, for one, certainly did not understand that this reference was intended to cover what appears to have happened by dropping this project entirely. Some who spoke at this meeting seemed to be actuated by the spirit expressed by the President of the United States, when he said, as I saw reported somewhere, "What, make gentlemen chum with rankers and degrade the nobility of Pork by association with muckers?" Be that as it may, if one thing is more clear than another, it is this, that if ever Registration is to be secured the Government will take care that every Tom, Dick, and Harry calling themselves architects will be recognised by statute, whether we like "rankers" or not.

"But what of the Chartered Institute of British Architects?" say some, as if that covered the scope of the question, and so they recall Sir Boyle Roche's speech in the Irish House of Commons. "Mr. Speaker," said he, "if we once permitted the villainous masons to meddle with the buttresses and walls of our ancient Constitution they would never stop or stay, sir, till they brought down the foundation-stones tumbling about our ears on the top of one another, and throw our bleeding heads upon the table to stare us in the face." This may be only very typical of St. Stephen's Green, but at bottom is the exclusion of the Society of Architects less farcical? I doubt it when we consider what we are setting out to accomplish, for in union alone consists our strength. Without it Registration is nowhere.

In so far as the Institute itself is concerned, is it likely to increase the aggregate of the Fellowship by allowing the Associates equal voting power with the Fellows? What will remain for the Associates to look forward to if full privileges in this way are accorded, and what inducement remains to inspire them to join the higher grade? Practically none. We all know how lethargic the Associates already are in this respect, and how times and again Presidents and others, including myself, have endeavoured to induce Associates in full practice, who have long outstayed their membership as such, to take up the Fellowship. As a matter of domestic economy I very much doubt the wisdom of thus allowing the comparatively few (851) Fellows to be outvoted on crucial questions by the 1,621 Associates.

Now the Licentiates are also to have 10 per cent. voting power, and these gentlemen number 2,089. If the scheme advocated so clearly and so well by Mr. J. S. Gibson on January 8 last year had been adopted, this proposal, as now put forward, would never have been made; but he was not supported by the Council at that time as he should have been, while it remains to add that the majority who referred this question back mostly comprised the younger men present. I have never been a keen Registrationist, but I did advisedly vote in the minority on this occasion in loyalty to the Council, after what I had learned as a member of that body, the principle of Registration having been previously adopted by the Institute. Is it so certain now that the minority on January 8, 1912, was wrong?—I am, etc.,

MAURICE B. ADAMS.

SIR,—If some architectural Carson does not spring into the field I shall be surprised.

It seems to me that all the objections Ulster has to Home Rule will be analogous as far as the Society of Architects' probable hostility to the new proposals of the R.I.B.A. is concerned.

Possibly, too, that of the Universities and the Irish and Scottish architectural institutes.

Other unpleasant possibilities suggest themselves. In America the licensing of architects is almost entirely by the State or the municipality. See your own recent issues, pages 303, 661, 839, etc., Vol. CIV.

I am sure the strong British provincial societies will not like these latest proposals of the R.I.B.A. What is to hinder Manchester, Liverpool, Bristol, and other strong societies seeking License, Registration, or "Charter" from their own local authorities? Most of the work of their members is local, and qualification of any sort is mainly of local value.

The R.I.B.A. is sowing dragons' teeth.—I am, etc., HON. MEMBER S.A.

SIR,—I advise all interested, before they speak at the R.I.B.A. meeting on Monday week, to read carefully Mr. Sydney Perks's valuable remarks at the meeting of Jan. 8, 1912, as reported in your issue of March 1, 1912.

Mr. Perks said then: "We are going on with that [Registration], with or without the Society of Architects." I hope he is still of the same intention.

I feel certain, anyhow, that the opposition to Registration he then predicted on the part of the Civil Engineers, the Surveyors, and other powerful bodies of their sort will be redoubled against the new proposals of the R.I.B.A. Council.

As Mr. Perks pointed out, their new Charter-making "is a very serious thing. It might lead to an inquiry; but it is not a good thing to have an inquiry about a Charter."—I am, etc.,

AN INSIGNIFICANT LITTLE FLAPPER.

COVENTRY TECHNICAL INSTITUTE.

SIR,—I applied for the Conditions of this competition before they were declared to be unsatisfactory by the R.I.B.A. I have now returned them to the promoters, accompanied by a letter to the effect that I should be willing to compete if they were amended. As my deposit of £1 1s. has been sent back to me without a word of explanation, I can only assume that there is no intention of making any revisions. I take it that the competition will, therefore, go forward, in spite of members of the R.I.B.A. being conspicuous by their absence. It can be taken for granted that a large number of designs will be received, and particularly so as those competing will know that, under the circumstances, they have a much better chance of success than would otherwise be the case. The Coventry Education Authority will, therefore, be thoroughly satisfied with the response in point of numbers, and so long as a certain quantity of designs are received, the question of their quality will not trouble them.

This is not an isolated case, and it is a deplorable fact that architects outside the Institute can be found to take advantage of such unfair circumstances. I cannot help thinking that it is time the R.I.B.A. sent down a representative to the exhibition of drawings in connection with any competition so promoted, in order to take the names of those submitting designs; and under no circumstances should anyone competing be eligible for *future* membership of the Institute, either as a Fellow, Associate, or Licentiate. The Institute can well afford

to ban those who will not conform to the ordinary standards of professional loyalty and etiquette. It would, at any rate, at once put a black mark against such "blacklegs."

In any case, the state of affairs that is now so frequently occurring in connection with competitions is surely another forcible argument in favour of Registration, even if we get no more than "chartered architects" as the outcome of it all. I take it that the Council of the R.I.B.A. would then have the power to strike any offender off the rolls who competed in face of a prohibition, and though it is possible that competition promoters might receive a certain number of designs in spite of unsatisfactory Conditions, they might, perhaps, then realise that the work would eventually be carried out by an unqualified man.—I am, etc.,

Nov. 14, 1913. F.R.I.B.A.

[It seems rather a pity the City of Coventry did not adopt our suggestion on p. 471 in our issue of October 31.—Ed. "B.N."]

THATCH IN COUNTRY DISTRICTS.

SIR,—The excellent support given by you in your issue of the 14th to the movement for encouraging the use of thatch in country districts will have laid all lovers of scenery, as well, I hope, as farmers and landowners, under a debt of gratitude.

In this district reed is at £5 per hundred nitches (in North Devon I understand it is considerably cheaper, and in other parts of the country, no doubt, it will vary somewhat in price); adding the cost of labour, a fair-sized cottage or outbuilding can be thoroughly well thatched, to last thirty years, at a cost of from £13 to £15. Larger buildings, of course, in proportion. Not a great sum to pay once in a generation for a covering which is warm, cool, weather-proof, and a joy to the eye.

In some parts of England, I believe, thatchers are hard to find; but in many districts (this neighbourhood, for instance) there are a number of good thatchers, and it is needless to point out that the supply would increase with the demand.

I shall be very glad to send a copy of the pamphlet to anyone on receipt of a postcard.—I am, etc., L. MARK KENNAWAY.

St. Helens, Teignmouth, Nov. 18.

In our list of tenders for the Hearts of Oak extension, Euston-road, last week, the details of ferro-concrete work, it was stated, were supplied by Mr. G. F. Wells. It should, of course, have been Mr. E. P. Wells, consulting engineer.

Mr. J. B. Thornley, of Darwen, has been appointed architect for a new Wesleyan school which is to be erected at Pilling, near St. Anne's-on-Sea. It is expected that the work will commence in the early spring of next year.

Premises for the Munster and Leinster Banking Company are being built at Athlone from plans by Messrs. McDonnell and Reid, architects, of Dublin. The contract has been taken, at about £2,000, by Messrs. McLaughlin and Harvey, Ltd., Dublin.

The death is announced of Mr. Alfred Williams, M.Inst.C.E., who was for many years engineer and manager of the Harbour Board of Sydney, N.S.W. Mr. Williams, who was a brother of Mr. B. W. Leader, R.A., and of the late Sir E. Leader Williams, was in his eightieth year.

The governors of the Royal Grammar School, High Wycombe, have accepted the tender of Messrs. Hunt and Son, of that town, at £9,533, for the erection of a new school on Amersham Hill, on a site purchased from the Marquess of Lincolnshire. The entire scheme, including the master's house and accommodation for boarders, will involve an expenditure of between £18,000 and £19,000.

At Friday's meeting of the Metropolitan Water Board, Mr. Vesey Fitzgerald stated, in reply to questions, that he was not in a position to report what steps would be taken to remove the Board's central offices to Rosebery-avenue. He and other members were under the impression, when it was decided to remove to the avenue, that the site was available at any time and practically no expense. This was not the case, and the site was not yet available. A report on the matter might be presented at the next Board meeting.

Our Illustrations.

REREDOS TO THE HIGH ALTAR, ST. CUTHBERT'S CHURCH, SOUTH KENSINGTON.

This unusually large altar-screen, some 50ft. in height, is just now being erected, almost entirely filling the east end of the lofty chancel of this well-known church in Philbeach-gardens, S.W., near Earl's Court. The work as herewith illustrated is already approaching completion, though hidden from view. It has been carried out in oak, with the statuary and figure-panels in lime-wood. The elevation is 28ft. wide. The architect is the Rev. Ernest Geldart, of Woodside-Felday, near Dorking, who, prior to his taking orders, qualified as an architect by eight years' experience in the offices of the late Alfred Waterhouse, R.A. We gave a double-page in our issue for October 23, 1891, of the stalls by Mr. Geldart in Clumber Church for the Duke of Newcastle—the church being, of course, one of the notable buildings by Bodley and Garner. The style which Mr. Geldart has adopted in this particularly elaborate example of ecclesiastical woodwork at Kensington is a late phase of "Spanish Gothic," thoroughly followed out in detail, and in accord with historic precedent. The "motif" of the design is the worship of the Redeemer, with incense and lights, as illustrated by the central part of the composition, devoted to the Majesty. The statues include the Twelve Apostles and Four Major Prophets, also the Four Doctors of the Western Church. The Evangelistic beasts of the Apocalypse are appropriately introduced as emblems of perpetual worship. Messrs. Taylor and Clifton sculptured the figure reliefs and statuary, while Messrs. Boulton have made the structural framework and architectural canopies, traceries, and other parts of its enrichment. The weight of the whole structure was so considerable that steel girders were introduced, we understand, to insure a solid and sufficient foundation in the sanctuary where it stands, the altar being somewhat recessed. The cost, closely approaching £3,000, has been provided for by subscription, in recognition of the long and successful incumbency of the Rev. Henry Westall, who has been the vicar for over twenty-five years. The Church of St. Cuthbert was erected from the designs of the late H. Roumieu Gough. An illustration of the nave and choir will be found in the BUILDING NEWS for June 10, 1892, when we illustrated the priests' stalls.

CATHEDRALS OF NOTRE DAME, ANTWERP, AND ST. ROMBOLD, MALINES, BELGIUM.

WATER COLOUR SKETCHES BY MR. CHARLES GASCOYNE.

These two delightful brush drawings were recently made during a trip to the Netherlands by Mr. Charles Gascoyne, and their primary intention was to record impressions of different tours, and not so much as architectural studies, although the buildings of the towns visited furnished the chief attraction of this itinerary. These impressions do not lay claim to rank as the kind of drawing which implies detailed information by way represented, but are published as sketches. represented, and are published as sketches. As such, our readers will, we know, be glad to have them, and we hope soon to be enabled to give some others by the same capable artist, whose architectural drawings of contemporary buildings have formed so notable a feature in recent exhibitions at the Royal Academy.

ANTWERP CATHEDRAL.

This church is the most beautiful and largest example of its kind in the Netherlands. Jean Amel or Appelmaus of Boulogne superintended the work when it was commenced in 1352, and he was succeeded by Jean Tac and Master Everaert, whose work extended to 1449. The choir, chapels, and tower up to the first gallery belong to this period—1352-1449; the south aisles, 1425-72; and the north aisles, 1472-1500. Herman Van Waghemaker, who died in 1503, supervised the building, and was followed by Dominic, his son, who was responsible for the church architecturally during the early part of the 16th century, when he did the dome above the crossing and the Late Gothic upper part of the north tower, the first pinnacle dating probably from 1592. The south tower, as seen in Mr. Gascoyne's sketch, was left unfinished, and only a third of the contemplated height was reached in 1474. The aisles were vaulted when the groining of the nave was carried out, between 1611-16. Fire and pillage did much havoc to the church on three occasions 1533, 1566 (by Puritans), and 1794 (by French Republicans). Fr. Durlet was the architect of the restoration executed about thirty-six years ago. He died in 1876. E. Eifé continued the repairs, and the main front and part of the north side were opened out; but old houses of no very special interest hem in the cathedral badly. Fr. Baeckelmans long took his share in looking after the building as the cathedral architect. The north tower and spire measure 402ft. high, and the graceful and elaborate "open-work" was compared by Charles V. to Mechlin lace. Five hundred and fourteen steps lead to the first gallery, and one hundred and two more to the second and highest. The chimes are very beautiful, and long remain pleasant in the memory of those who know "their Anvers." They consist of forty bells. The largest, cast in 1507, weighs eight tons. At its consecration, Charles V. stood godfather. Such are a few leading facts of historical interest; but we do not propose to describe the building, which is cruciform on plan, with triple aisles and ambulatory.

MALINES CATHEDRAL.

The second study is in the ancient town of Malines, on the River Dyle, with its thirty-five bridges over various tributaries flowing through the city, 'midst a host of quaint and interesting old buildings. The cathedral faces the remodelled 13th-century Hotel de Ville (1715). The dedication is to St. Rombold, and the work commenced at the end of the 13th century, being completed in 1312. A fire happened in 1342, so that the building was to a great extent reconstructed during the 14th and 15th centuries. Since 1560 it has been an archiepiscopal metropolitan church. The tower is 324ft. high, but was intended to be huge, with a spire rising to 460ft. from the ground—considerably higher than the famous tower and spire at Antwerp. The clock-face on the tower is 49ft. in diameter. The cost of the church was almost entirely paid by the alms of pilgrims who flocked to Malines to obtain the indulgences issued by Pope Nicholas V. during the 14th and 15th centuries. The length of the church is 306ft., the nave is 89ft. high and 40ft. wide. The pulpit, like most of those in the chief Belgian churches, is carved in wood, the work of Boeckstuyns of Malines. It represents the Conversion of St. Norbert. The organ-choir is elaborately carved. During recent years the cathedral has undergone the process of what is called "restoration." These few notes will suffice as supplementary to our double-page plate; but its interest consists in the charm of the drawings, recalling impressions left in the mind of those who have been to Malines, and remember, probably, "Mechelen beer" foaming like champagne, but leaving a taste not soon forgotten.

STABLES AND COTTAGE TO A HOUSE IN OXFORDSHIRE.

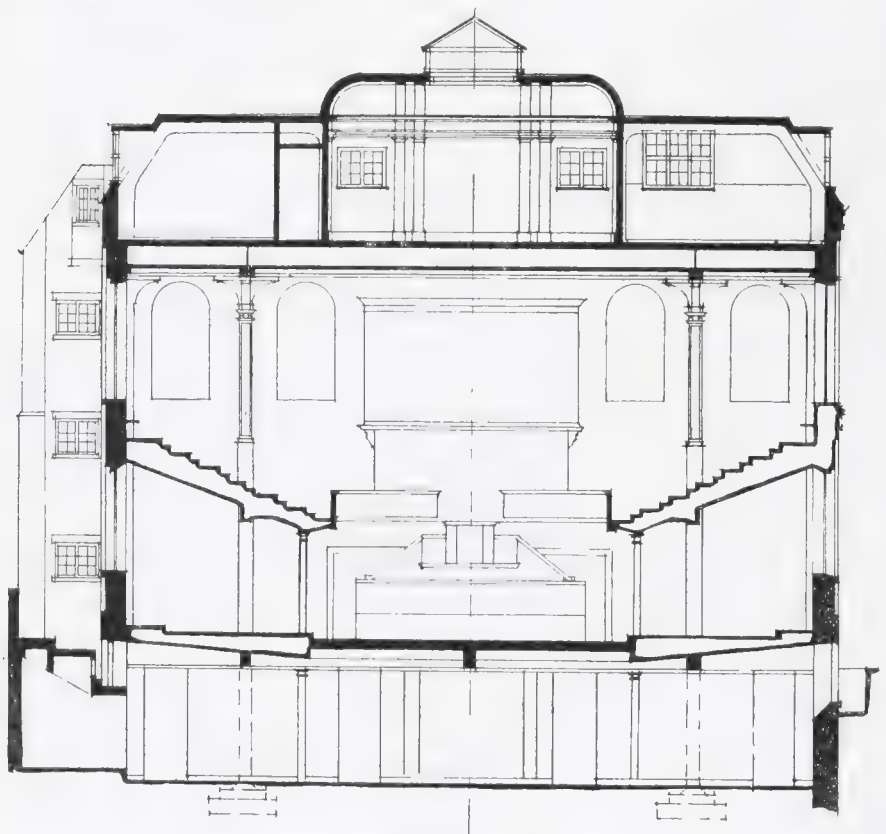
These stable buildings were built of brick faced with field flints. The cottage is constructed entirely of half-timber, with lath-and-plaster filling only. The oak used for this was green oak split and worked in the adjoining woods on the property, and the work was erected immediately after the felling of the trees. The two plans and pair of views illustrate the arrangements. The whole of the casements, hinges, etc., were made in the locality, and the builder was Mr. T. W. Winkworth, of Woodcote, Reading. Messrs. John W. Simpson, F.R.I.B.A., and Maxwell Ayrton, A.R.I.B.A., were the architects.

BROOKLYN HOUSE, SHERBORNE, DORSET.

The two views of the hall show a portion of the recent alterations in this old building, the half-timber treatment being adopted to overcome the difficulty presented by the old and new plastering, the timbers being merely stained, without varnish, and the plastering simply whitened. The work was carried out to fit the building as an office and residence for Mr. Edward C. H. Maidman, Lic.R.I.B.A., and ex-vice-president of Edinburgh Architectural Association, who has recently removed from that city. The builder was Mr. H. Gillingham, and the photographs from the studio of Mr. W. M. Chaffin, both of Sherborne.

BLOOMSBURY CENTRAL BAPTIST CHURCH ALTERATIONS, 1913.

The termination of the lease of the Baptist Institute premises in New Oxford-street has been the occasion of a somewhat novel departure in chapel-building. After unsuccessful negotiation for adjacent sites, it was decided that the necessary accommodation should be provided above the auditorium of Bloomsbury Chapel. This familiar structure, after the Lombardic style in treatment externally, was, when erected in 1848, indirectly concerned with the enterprise of Sir Morton Peto, the famous builder, and it was carried out from the designs of the well-known architect John Gibson (1819-1892). The building was roofed in one span with timber trusses having a span of 64ft. 6in. The problem that presented itself was how best to carry the additional story while keeping the body of the auditorium below reasonably free of iron columns. This has been effected by concentrating the load on four main 12in. by 12in. stanchions following the line of the towers, the treatment lending itself suitably for this square type of plan. The spans between the columns, being over 42ft. and 34ft. respectively, necessitated unusually heavy steelwork, the space between the floor-slab and the false ceiling being utilised for ventilation-trunks. The new floor is constructed of ferro concrete on the Kahn system. It is approached by two stairs and a lift, one staircase being entirely reserved for the use of the new story. All the secondary beams and slabs of the floor, the stanchions supporting roof, and the whole of the roof are constructed in reinforced concrete on the Kahn system. The floor is designed for a live load of 1cwt., and has also to carry a large part of the roof-load, the wall-loads of the hall above being supported on secondary beams. The slabs, 11ft. 6in. centre to centre, are 5½in. thick, reinforced with ½in. Kahn rib bars on 8in. centres. Continuity is provided by ½in. rib bars also on 8in. centres, and also across the main composite girders, which are cased solid with concrete, temperature bars being placed transversely along the major axis of each panel. These main girders, two in number, are 42ft. from centre to centre, and the hall, 27ft. wide, is placed centrally above, the cross-girders carrying the roof-point loads, and the containing walls are borne by secondary concrete beams, 14in. by 9in., reinforced with two ¾in. rib bars for both tension and negative bending over girder supports. A hole 2ft. square is formed in the centre panel, in connection with the chandelier lighting the chapel below. The internal supports of the roof consist of two rows of concrete columns of irregular section; three on either side are formed as twin pilasters, and provide the main architectural feature of the hall interior, those of the angles on each side being single. The anchoring of these stanchions to the steel girders is provided for by passing ⅝in. splice-bars through the compression webs and bolting on the under side. These stanchions are reinforced with from four to twelve ⅝in. rib bars, according to their shape and duty, bound with 3-16in. wire at 9in. centres, and are rebated to hold the panels between, which are formed of Kahn Hy-Rib lathing and cement plaster to a thickness of 4in. where solid, and 6in. in the case of double walls. All the partitions forming the corridors and offices on either side and at the vestibule end are also constructed with Hy-Rib. The roof is a complicated piece of work, on account of the splay occurring at both sides, while the part over the hall is raised, with a long top-light; the whole, including dormers on each side, is entirely carried out in reinforced concrete. The double-angled beams of the mansard, the curved beams of the coved hall roof, together with the trimming beams to top light, and the beams of the flat over the front portions, are all formed with Kahn and rib bars, with extra stirruping at the angles and curves, where such occur. The three coved beams over the hall, as seen from below, are double, and follow the lines of the pilasters aforementioned. They are 18in. deep and 42in. wide, each twin-beam being reinforced with four 1⅝in. rib bars in compression, and two 1¼in. rib, with one 1¾in. Kahn bars in tension, and 1in. by ⅛in. flat double vertical binders every 9in., increasing to every 6in. at the bends at each end. These beams are 26ft. 6in. span. The cranked beams of the mansard are 18in. by 12in., reinforced with two 1¼in. Kahn and two ¾in. rib bars, with 1in. by ⅛in. binders at the angle, the soffit of which is rounded. Anchor-bars of ⅝in. rib extend well into the external dwarf columns on which they bear. The roof-slabs are 4½in., with the exception of the front flat, which is 5½in. They are reinforced with ⅜in. and ½in. rib bars at varying centres, according to the spans, and transverse bars for temperature are spaced approximately at 2ft. 6in. centres. Hy-Rib ceilings are suspended over the chapel and the hall above, hangers of 3-16in. wire every 2ft. 6in. being cast in the floor or roof for this purpose, while the coving to the upper hall was formed by 1½in. by ¼in. flats bent to curve. The concrete was the ordinary reinforced concrete specification—namely, 1 part of cement to British standard requirements, 2 parts of clean washed sand, and 4 parts of crushed ballast to pass a ¾in. mesh. The work was carried out to the designs of the Trussed Concrete Steel Co., Ltd., of 82, Caxton House, Westminster, who were the consulting engineers for this part of the work, and who supplied the Kahn System reinforcement and Hy-Rib. Considerable alterations have also been made in the lower portion of the premises in the provision of additional classrooms, lavatories, etc. The total cost of the work, including new organ, will amount to nearly £10,000. Mr. H. F. Murrell, A.R.I.B.A., has this alteration in hand, as shown by the accompanying plans, section, and elevation.



SECTION

BLOOMSBURY CENTRAL BAPTIST CHURCH.

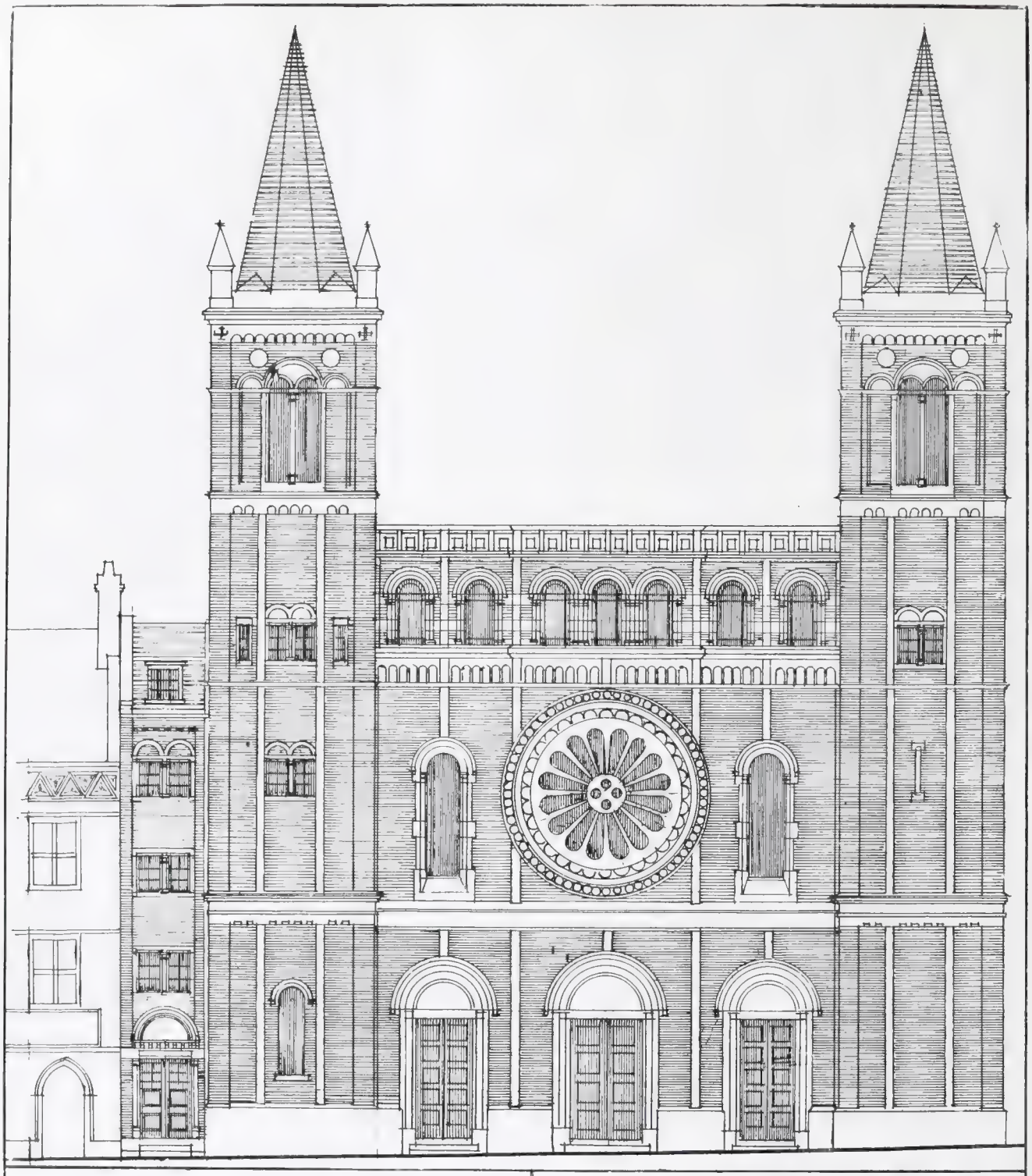
HASWELL CO-OPERATIVE PROVISION SOCIETY, LTD: WHEATLEY HILL BRANCH.

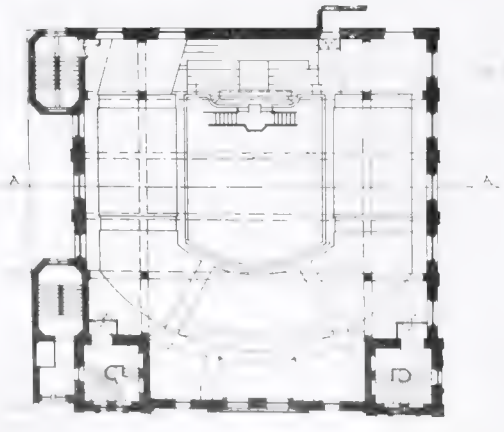
(SELECTED DESIGN.)

This building is about to be erected on the site of the existing premises, and is to be built in sections, so that business will not be interrupted. The scheme provides a main building for all departments, a stable block, and a manager's house. The main building is to be of ferro-concrete, with a front of artificial stone. The plan is an attempt to insure an ideal co-operative store for a colliery town. The position of the manager's office and the loading-benches and balcony are features of the scheme. Steel doors and windows are to be used throughout. A roof garden is arranged on the flat covering the main block. We give the two main plans. Mr. J. Wilson Hays, the architect, Wingate, Co. Durham, was placed first in open competition lately.

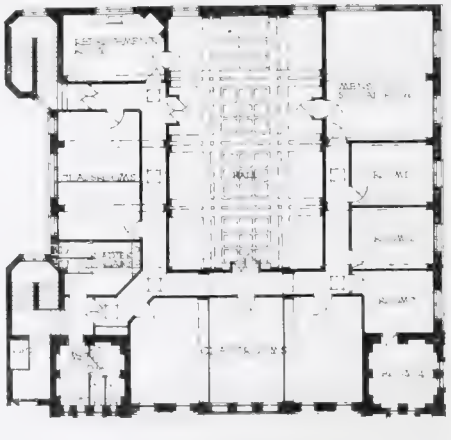
The extension of the nurses' home at Harton Workhouse, South Shields, was opened on Friday. Sixteen bedrooms have been added, providing a total accommodation for forty nurses, together with classrooms, sitting-room, and writing-room. The hospital kitchen has also been extended.

The proposal of H.M. Office of Woods and Forests to build a concrete wall on the inner side of the towpath which protects the Old Deer Park from Thames floods has aroused protests from the local authorities of Richmond, Twickenham, and Isleworth. The park adjoins Kew Gardens, and part of it is leased to the Mid-Surrey Golf Club by the Crown. During heavy floods, two or three of the golf-greens have been flooded, and to prevent this the Office of Woods and Forests propose to build a 3ft.-high wall along the whole length of the park next the towpath. The cost will be over £3,000, and the Government Department suggested that Richmond should make a contribution towards the outlay.





PLAN OF GALLERY



PLAN OF NEW FLOOR

BLOOMSBURY CENTRAL BAPTIST CHURCH. Mr. John Gibson, F.R.I.B.A., 1819-1892, Architect.
Alterations, 1913, Mr. H. F. Murrell, A.R.I.B.A., Architect.





REREDOS TO THE HIGH ALTAR ST. CUTHBERT'S CHURCH SOUTH KENSINGTON. S.W.

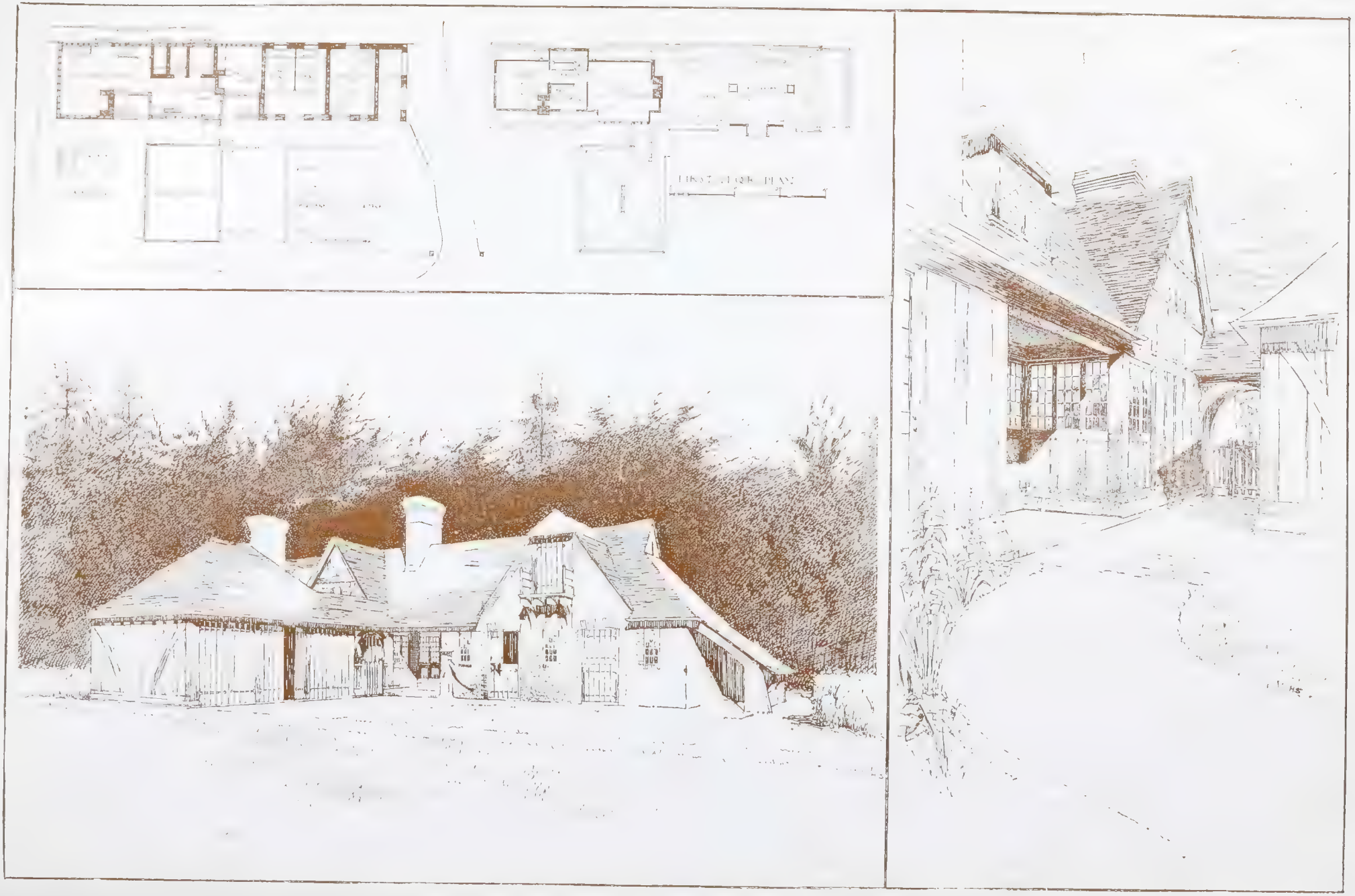
Rev. Ernest Geldart. Architect



ANTWERP CATHEDRAL.

WATERCOLOUR SKETCHES IN





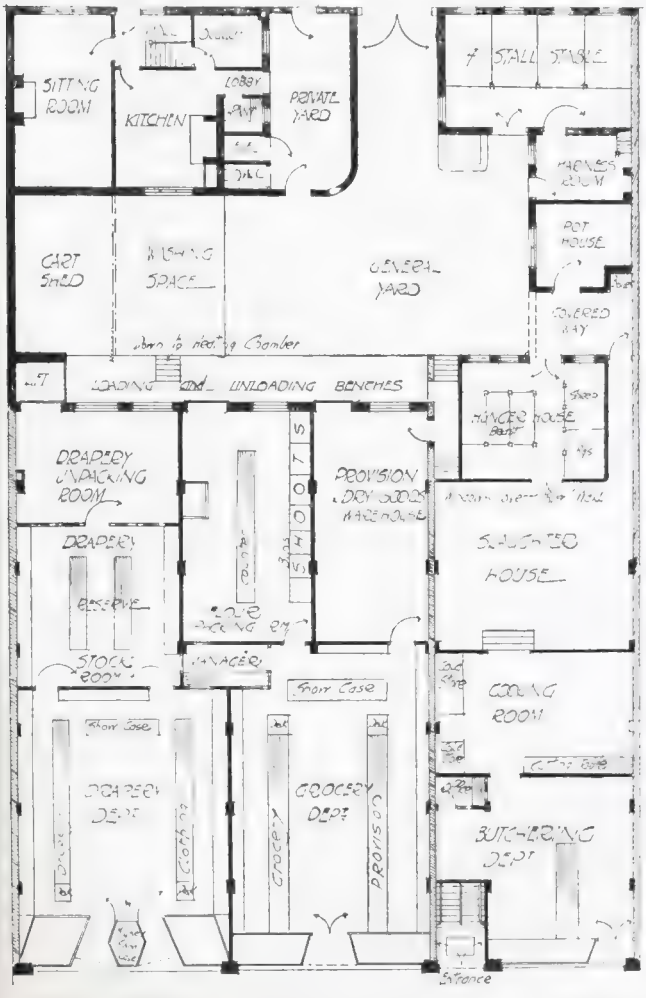
STABLES AND COTTAGE TO A HOUSE IN OXFORDSHIRE.

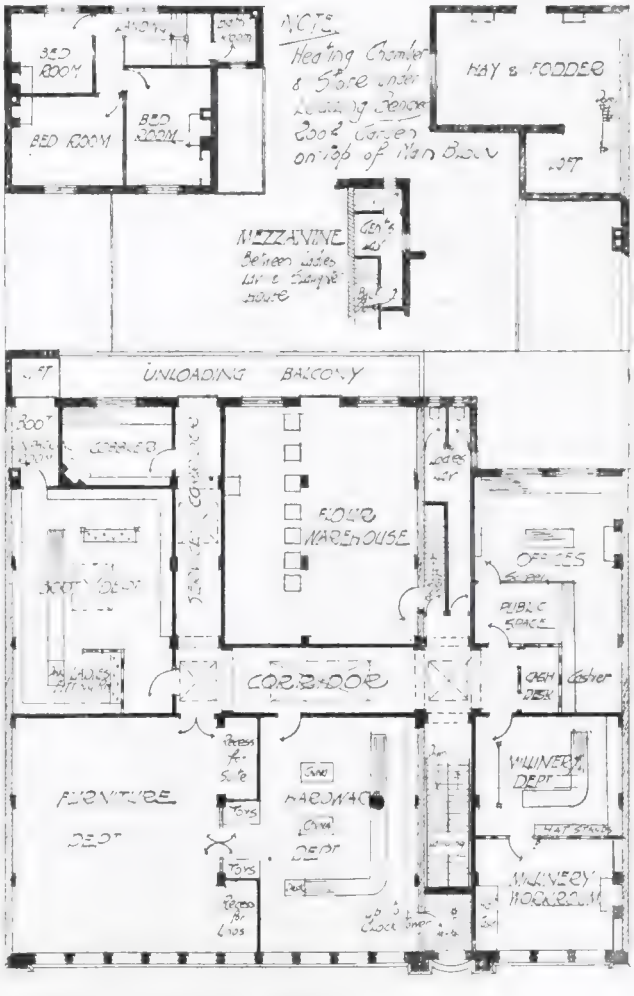
Messrs. J. W. Simpson, F.R.I.B.A., and Maxwell Ayrton, A.R.I.B.A., Architects. Mr. T. W. Winkworth, Builder.



THE HALL OF AN ARCHITECT'S HOUSE, SHERBORNE, DORSET.
Mr. EDWARD C. H. MAIDMAN, Architect.







HASWELL CO OPERATIVE PROVISION SOCIETY, LTD.: BRANCH, WHEATLEY HILL, DURHAM.
SELECTED DESIGN.—Mr. J. Wilson Hays, Architect.

Engineering Notes.

BUCKIE HARBOUR EXTENSION CONTRACT.—A special meeting of Buckie Town Council was held on Friday night, when the contract for the second extension of Buckie Harbour with Messrs. Charles Brand and Sons, Glasgow, was signed. The contract includes £33,080 for the north west pier extension, £6,344 for the east jetty, £14,150 for excavating the inner harbour, £4,576 for the south quay and roadway, £4,945 for the east quay and roadway, £6,700 for slipway for steam drifters, £1,118 for jetty extension, £1,091 for east pier extension, and £7,550 for a new embankment in West Bay. The total contract amounts to £88,154. Three and a half years are given to finish the work. Documents were also signed for a loan of £10,000 from the Public Works Loan Board.

COMPETITIONS.

PICCADILLY, W.—The following is the result in this recent competition, in which Mr. Henry Tanner, F.R.I.B.A., acted as the assessor, £50 being offered for the best design for a shop-front at 210, Piccadilly, for Messrs. Martins. In spite of the fact that nearly 200 designs were sent in, we are told not one of them fulfilled all the requirements, consequently the £50 prize has not been awarded. Both Mr. Tanner and Messrs. Martin realised, however, that some mark of appreciation of the serious attempts made by so many competitors was due; consequently the £50 has been split into five solatium cheques of £10 each, and sent to the following competitors: "Fourposter," Chelsea; "Oh! I say," New Cross; "Corona Corona," Bloomsbury, W.C.; "Buttercup," Putney, S.W.; "Nestor," Newcastle-on-Tyne. Next week we shall illustrate one of the designs, which we think has merits of a high order.

REIGATE.—Eleven designs have been received in the limited competition for the new infirmary at Reigate, to be built by the union of that locality. All the firms chosen to compete have, therefore, responded, but forty applications were originally received; £6,000 is the price laid down for the cost of the work, and the architect's payment is fixed at £300, besides travelling expenses; £21 will be given as a premium to the author of the design placed second.

SUMMIT.—In a limited competition for the lay-out of a garden suburb at Summit for Mr. A. G. C. Harvey, M.P., the scheme of Messrs. S. Butterworth and Duncan, FF.R.I.B.A., of 2a, Baillie-street, Rochdale, has been accepted, and they have been instructed to prepare the designs for the houses.

TORONTO.—Mr. Chas. S. Cobb has been awarded first prize in the competition for the design for the new registry office building at Toronto. Mr. Cobb will receive 1,000 dollars as winner of the first prize, and the terms of the competition provide for his supervision of the erection of the building. Second and third prizes of 600 dollars and 400 dollars respectively go to Messrs. Chapman and McGiffin and Messrs. Symonds and Rae. The assessors were Messrs. A. R. Denison, C. H. C. Wright, and R. H. Bowes.

ROME SCHOLARSHIP IN DECORATIVE PAINTING. — The Royal Commissioners for the Exhibition of 1851 have awarded the Rome Scholarship in Decorative Painting to Mr. Colin Gill on the unanimous recommendation of the Faculty of Painting of the British School at Rome. Mr. Gill, who is twenty-one years of age, is the son of Mr. George J. Gill, of Cudham, Kent. Leaving St. Dunstan's College, Catford, where he began his studies in art under Mr. A. W. Carter, in 1908 he became a pupil of Mr. W. H. Caffyn, the illustrator. Mr. Gill entered the Slade School in 1910 and studied under Professors Frederick Brown and Henry Tonks. He won the Slade Scholarship (value £70) in 1911 and the British Institution Scholarship (value £100) in 1912. He completed his course at the Slade School this summer, and was among the youngest of the competitors for the Rome Scholarship.

PROFESSIONAL AND TRADE SOCIETIES.

COURTRAI AND BELGIUM SACRAMENT HOUSES. — The Rev. Professor Cooper, D.D., Glasgow, lectured to the Edinburgh members of the Scottish Ecclesiological Society on Saturday afternoon in St. Cuthbert's Hall on "Courtrai, with Notices of Some Sacrament Houses in Belgium." He referred to the close likeness existing between certain edifices in the Low Countries and those of Mediæval Scotland. This was brought home to him very strongly when visiting Courtrai, a town in West Flanders, near the French frontier. The façade of the Church of Notre Dame recalled the west front of the Old Aberdeen Cathedral, and in Ypres the magnificent Cloth Hall had plainly suggested to Sir Gilbert Scott ideas for the front of the Glasgow University. In the great Church of St. Martin, Courtrai, he found a stone Sacrament House (the receptacle for storing the reserve Sacrament) much grander than any they could boast of in Scotland, but still erected for the same use, about the same period, and set in the same position in the chancel as the Sacrament Houses in the old churches of the northern Lowlands of Scotland. This, and another one in Louvain, were Gothic in design, elaborately carved, and surmounted by an openwork pinnacle, the latter rising to a height of 50ft. These Sacrament Houses came into existence in the end of the 15th and the beginning of the 16th century. They superseded the hanging pyx, which was used for storing the Eucharistic bread and the cup, and probably had their origin in the idea which was then prevalent that the laity were again to be allowed to communicate in both kinds. On the other hand, he was bound to point out that certain Sacrament houses had been erected after the Reformation when that idea had been finally abandoned.

EGYPT EXPLORATION FUND.—The twenty-seventh general meeting of the Egypt Exploration Fund was held at the rooms of the Royal Society, Burlington House, on Friday, Lord Cromer presiding. The report of the committee for the year 1912-13 referred to the resignation of Mr. J. S. Cotton, who had served the society as hon. secretary for more than 16 years. Mr. H. R. Hall has accepted the position. During the past year, in the absence of sufficient means to carry out the excavation of the Osireion, the work at Abydos was confined to a campaign among the cemeteries, under the leadership of Mr. T. E. Peet, who had the assistance of Mr. Loat and Professor Whittemore. Altogether the season's work was successful in the discovery of a good number of objects suitable for museums. Mr. Griffith reported that the Archæological Survey had been active both in publication and in the collection of material. An interesting volume, entitled "Five Theban Tombs," was the work of Mr. N. de Garis Davies, their former surveyor. At Meir last winter Mr. Blackman completed his copies of the XIIth Dynasty tomb of Senb, and the memoir was now almost ready for publication. Meanwhile Mr. Blackman had returned to Egypt for further copying, and the remarkable Necropolis of Cusae at Meir would no doubt provide him with materials for several memoirs. The finance of the fund continued to be a subject of anxiety. There had been a loss on the year's working, after charging the survey with its share of the office expenditure, of £193, leaving a balance in hand of £607. With regard to the coming season, the committee state that the obvious duty of the fund is to carry to a completion the work at the Osireion of Abydos, which was undertaken in 1910-11. Professor Edouard Naville gave a lecture on the progress of the excavations at the Osireion of Abydos, under his direction, and expressed the hope that the work would be completed next winter.

HELLENIC ARCHITECTURE. — Mr. Banister Fletcher gave a preliminary lecture on this subject at the British Museum on Thursday in last week, and in his opening observations referred to the almost startling suddenness of the beauty of Hellenic work. The rough Mycenæan wall work was transformed by the subtle Greek spirit into the perfect form of the Golden Age of architecture. This was a temple-building period, and the transformation was the more marvellous when we remembered that the proud Temple for the god had its origin in a humble little room for man. Mount Pentelicus was a veritable fairy godmother to Greek architecture at its birth, and out of her marble treasure were produced the purity of line, smoothness of surface, and closeness of joints which gave such mysterious beauty to the buildings. Greek building sites were generally near a hill for safety, and some of the building centres were Olympia, Delphi, and Athens, and there on the Acropolis after the Greek triumphs over the Persians 480 B.C. the Athenians began a votive temple to their guardian goddes Athena. Thus rose the Parthenon.

LIVERPOOL BUILDING MATERIAL TRADES ASSOCIATION.—The fourth annual dinner and smoker of the Building Material Trades Association, Ltd., was held on Tuesday evening in the Hotel St. George, Lime-street, Mr. H. Gordon Roberts, J.P., presiding over a large attendance, which included visitors from kindred trades and associations. After dinner the chairman proposed the toast of the visitors, and dwelt upon the necessity of the kindred trades and associations working together for mutual benefit. In responses from Mr. T. Belcher, chairman of the Liverpool Plumbers' Merchants' Association; Mr. John Collier, representing the timber section; Mr. B. B. Moss, secretary of the Master Builders' Association; and Mr. Phillips, of Messrs. Wyndham and Phillips, pipe manufacturers, this proposal was cordially supported. Suggestions were made that representation should be put forward to the Chancellor of the Exchequer for an amendment in the law relating to landowners and speculative builders; also that further effort should be made to obtain a reduction of conveyance duty to 10s. per cent.

NEWCASTLE-ON-TYNE.—At the opening meeting of the Northern Architectural Association on Wednesday night, Mr. William Milburn, F.R.I.B.A., the president, remarked that the association had been in existence fifty-five years, only one society in England having been inaugurated at an earlier date. The number of members had remained fairly steady since 1906, but the number of students had diminished during that period about 50 per cent. This was a matter for regret; but it was to be accounted for, he thought, by architects not desiring to take pupils, owing to the continued depression in the building trade, and not, he hoped, by a want of appreciation of art as a profession by the younger generation. The cheap artisan's house was, in his opinion, a thing of the past. He well remembered the day when a good three-room, one-story cottage could be built in the towns for £100; but now, owing to the increased cost of production and greater restrictions by local and other authorities, the cost had increased practically 50 per cent. In the planning of great institutional buildings, particularly hospitals, there had been considerable advance in simplicity and in arrangement of the various parts and units. Wards had been reduced in size, centralisation improved, and the general working in the institution kept in view; and although he was no great lover of the competitive system now so popular, he believed that the great simplicity and improvements in the planning of recent public institutions were in no small degree due to the work of competitors. He did not think that most of their materials had been so greatly improved by the present-day methods of working and manufacturing them. While the use of stone had decreased in some cities and terracotta had taken its place, there had of necessity come to the front a new class of craftsman and artist, who gave many excellent effects in light and shade and beauty of line; but he must say that he preferred the texture of the bolder effects obtained by the use of stone.

ORGANISATION OF DRAINAGE AREAS.—Mr. F. W. Cable, A.M.Inst.C.E., in the course of a paper read on Monday

night in Caxton Hall, London, before the members of the Institute of Sanitary Engineers, referred to the rivalry of adjoining local authorities in providing separate drainage systems for their respective areas. This, he said, raised the question as to the advisability of establishing drainage boards to control the various geographical drainage areas throughout the country, and although they had been tried with indifferent success in some cases, it was a national question of a magnitude which warranted the most serious consideration, and if carried out to a logical finish, including a combined system of treatment at one site, it would result in the saving of an enormous sum of money both in capital outlay and annual expenditure.

RECENT DISCOVERIES IN PALESTINE.—Mr. P. S. P. Handcock delivered on Saturday afternoon the last of a course of lectures at the British Museum. He described the excavations carried on at Tell el-Hesy. The mound contained the remains of eleven cities of Lachish, ranging from about 1700 to 400 B.C. The ruler of the earliest city owed allegiance to Egypt. In the first three cities only bronze implements have been found, but in the fourth city iron weapons were discovered, while the presence of scarabs of the XIXth Dynasty rendered it probable that this was the city taken by Joshua. The sixth city was besieged and captured by Sennacherib. As a result of the excavations carried on at Tell ej-Jezer (Gezer), we now know the history of the latter city goes back to the Neolithic age. Mr. Handcock also described the German excavations at Jericho, explaining that there still exist very substantial remains of the ancient city walls, which Joshua dramatically states (according to the Authorised Version) in Chapter vi., "fell down flat." (As the Revised Version shows, the corrected Hebrew text avers that "the wall fell down beneath itself"—i.e., sank bodily into the soft subsoil.) Recent American excavations at Samaria resulted in the discovery of the remains of the building works of Omri and Ahab. At Samaria various small relics were brought to light, of which the most important was a collection of ostraka bearing old Hebrew inscriptions, written in ink with a reed pen. They were possibly the earliest examples of Hebrew writing, and in amount far exceeded all the ancient Hebrew inscriptions yet known. The majority of them seemed to have been labels affixed to jars of wine or oil.

Building Intelligence.

PERSHORE ABBEY. — The Earl of Coventry makes an appeal for the Reparation Fund of Pershore Abbey Church, in which he remarks:—What remains of the Benedictine abbey church is of singular interest, and presents some features almost or quite unique among English churches. The south transept and tower were both found to be in peril last year. The work of securing them is nearly complete; £2,000 was held to be necessary for this work, and local effort has succeeded in raising about £1,540. In July last a careful examination was made of the Decorated vaulting of the presbytery, and very serious danger was disclosed. Owing to decay of the great oak tiebeams which support the outer roof, these have slipped from the wall-plates, and have brought so great a pressure upon the stone vault that it has cracked badly, and the walls have bulged outwards. It is estimated that the repairs of this latter mischief will need a further sum of £3,000. The work of repair has begun, and is under the direction of Mr. Harold Brakspear, F.S.A.

Kingsthorpe Parish Church, Northamptonshire, was reopened yesterday (Thursday) after extensive restoration.

Blocks of working-class dwellings are about to be built for the Guinness Trustees on a site with frontages to Kennington Park road, Purton place, and Canterbury-mews, Newington, S.E., from plans by Messrs. Joseph and Smithem.

Intercommunication.

GUINEAS FOR BEST REPLIES.

We offer a prize of one guinea every week for what we deem the best reply to any query appearing in this column, which we deem worth insertion.

Replies must be sent in over real name and address. No others can receive a prize. The Editor's judgment is final.

This competition is restricted to buyers of the paper, and with each reply a coupon cut from our front page must be enclosed.

Any number of replies can be sent, but a coupon of this date must accompany each.

All else being equal, brief replies will stand the best chance. We emphasise this, as some correspondents ignore the fact that querists want terse facts, not long essays. Any necessary illustrations must be in line only—no tints or washes—and about twice the size they are meant to be reproduced. We are unable to avail ourselves of replies that contain illustrations unless we receive them by first post on Tuesdays.

The right to withhold the prize in the event of no reply being received worthy of it is reserved by the Editor, who also claims the right to publish any other replies he may deem useful.

QUESTIONS.

[13138.] FERRO-CONCRETE LINTELS.—What is the best method of reinforcement for 9in. by 4in. concrete lintels, placed on the flat, for inexpensive work, such as cottage windows, &c.? Span about 7ft., distributed load, say, 30cwt. Will some really experienced reader give sketch-section showing the position of the metal in reference to the neutral axis of the lintel, &c.?—T. H. W.

LEGAL INTELLIGENCE.

CURIOUS LEGAL QUIBBLE AS TO A CLOSING ORDER.—Morgan v. Kenyon and Another.—In the King's Bench Division, on Friday, this special case, cited by the magistrates of Bolton, was heard before Justices Darling, Avory, and Atkin. Mr. Gordon Hewart, K.C., and Mr. Foley, instructed by the town clerk of Bolton, appeared for the appellants, and Mr. Acton for the respondents. Mr. Hewart said that Mr. Morgan was the borough surveyor of Bolton, and that the respondents were the owners of certain property. The justices dismissed an information before them which charged the respondents with having erected a new building without giving proper notice to the corporation, and without leaving plans and sections at the borough surveyor's office. The justices appeared to have misdirected themselves. The premises had been the subject of a closing order because they were stated to be unfit for human habitation, and the justices seemed to have been of opinion that the closing order took away from them the power to object to plans. In April of this year the respondents began by structural alterations to convert them into a considerable warehouse for their own use. If the houses were dwelling-houses, it was contended, the respondents ought not to have begun this work of conversion without complying with the requirements of the law. If they could do this, it followed that a man had only to let premises fall into an insanitary state to be able to carry out changes without asking anybody's approval. Reconstructions could then go through without any inquiry, for instance, as to stability of the floors.—Mr. Acton contended that the only question was a question of fact. His friend had suggested a reductio ad absurdum; but there was an actual hiatus in the regulations, and the respondents had done nothing in conflict with the by-laws. The premises might legally have been altered as they were without submission of plans to the corporation. Mr Justice Darling delivered a written judgment, in which he observed that these houses were closed as dwelling-houses. They had not been reopened as dwelling-houses, neither was it proposed that they should be. Closed as dwelling-houses, they ceased to be such. They were then used as a shed or warehouse, and he saw nothing in the by laws which said that was the erection of a new building.—Mr. Justice Avory said that he had come to a different conclusion. Houses could not be changed from one class into another without resubmission of plans. These houses remained houses of the dwelling-house order, and he thought that the magistrates were wrong in the conclusion to which they had come.—Mr. Justice Atkin concurred and the appeal against the justices' decision was thereupon allowed.

ARCHITECT'S AUTHORITY TO VARY CONTRACT.—E. Forrest v. Scottish County Investment Company, Ltd. Judgment has been given at Edinburgh, in the Outer Court of Sessions, by Lord Hunter, in an action by Elphinstone Forrest, builder and contractor, 12, Dixon-street, Glasgow, against the Scottish County Investment Company, Ltd., 155, St. Vincent-street, Glasgow, for payment of £633 16s. In March, 1911, the pursuer secured the contract for the digger, mason, and brickworks of four tenements to be erected in Garnock-road, North Kelvinside, Glasgow. The contract price was £3,495 15s., subject to discount. During the progress of the work he received instalments of the contract price amounting to £2,708. The amount of the completed measurement was £3,341 16s., the balance being the sum sued for. The defenders refused to pay, on the ground that the work executed by the pursuer was not in conformity with the contract in various material respects. Lord Hunter gave decree for the sum sued for, with expenses, under deduction of £5 claimed by the defenders. His Lordship said that reliance was placed upon two decisions in which it was held that approval of the architect afforded no justification for a deviation from the contract not sanctioned by the building owner; but the deviations founded upon were treated as material, and not merely in detail. His Lordship could not think that either of those cases was an authority for the proposition that an architect who understood construction, and who was acting for a proprietor of ground who did not understand construction, could not alter any of the innumerable details of a schedule of work which was primarily intended as a basis for pricing without formally applying to his principal. At all events, the builder was entitled to assume, as appeared from the evidence to be customary, that the architect had authority to give instructions as regarded details of construction.

CHIPS.

The Bathgate District Committee of Linlithgowshire County Council have just completed a new bridge of 50ft. width on the Edinburgh and Glasgow road at a point where it crosses the Union Canal at Broxburn.

The centenary of the birth of Sir Isaac Pitman was celebrated in his native town, Trowbridge, yesterday (Thursday), when a marble bust was placed in the town hall. It is a replica of the bust executed by Sir Thomas Brock, R.A., and presented to Sir Isaac in 1887, the jubilee year of phonography.

At the annual meeting of the Court of Bristol University, on Friday, a report was presented stating that Messrs. George Wills and Henry Wills had given £15,000 to erect a block of buildings as a memorial to their late father, Mr. Henry Overton Wills, first Chancellor of the University. They had further undertaken to bear the cost, not exceeding £25,000, of the immediate extension of the site and original buildings, and also to provide an extra endowment of £5,000 for upkeep.

Mr. James Paton has resigned his position as superintendent of the Glasgow Corporation art-galleries and museums on the ground of advancing years. Born in 1843, and educated at Edinburgh University, he obtained in 1861 an appointment in what is now known as the Royal Scottish Museum of Science. In 1877, when he was chosen for the post at Glasgow Art Galleries, he had only one assistant, whereas there are now over forty under his authority. He compiled an excellent illustrated catalogue of the corporation pictures.

Mr. Ambrose Heal, of Nower Hill, Pinner, and of Messrs. Heal and Sons, Ltd., of Tottenham Court-road, W., cabinetmakers, upholsterers, who died on October 10, aged sixty-six, left estate of the gross value of £73,501, with net personalty £64,991. He left his books, prints, pictures, and articles of curiosity and virtu, and the cases belonging thereto, so far as relates to St. Pancras, to the corporation of St. Pancras, to be kept in the free library or council chambers, and, should they decline the gift, then to the British Museum, whom failing, to the City of London for the Guildhall library.

The third annual meeting of the Bristol and District Branch of the Auctioneers and Estate Agents' Institute of the United Kingdom will be held at Bath to-day (Friday). The business meeting will take place in the Guildhall, and be followed by a luncheon at the York House Hotel. In the afternoon there will be visits to the Bath establishment, under the direction of Mr. Hatton, and to the Roman baths and antiquities, an explanation of which will be given by Mr. A. J. Taylor, M.S.A. The members have been invited by the Mayor of Bath to take tea with him in the Roman Promenade. Mr. H. T. Bruton is president of the branch, Mr. J. E. Pritchard being the hon. treasurer, and Mr. E. A. Young the hon. secretary.

WATER SUPPLY AND SANITARY MATTERS.

HOUSING CONDITIONS IN DUBLIN.—Messrs. C. H. O'Conor, J. F. MacCabe, and L. P. Delany opened an inquiry in the City Hall Dublin on Tuesday into the housing conditions of the working classes in Dublin. Mr. O'Connor presided. The Lord Mayor the first witness, said that tradesmen's wages in Dublin averaged from 30s. to 40s. weekly, those of unskilled workers in regular employment from 20s. to 25s., and those of casual labourers from 12s. to 15s. weekly. Skilled workers numbered 30, unskilled workers 30, casual workers 25, and the very poor 10 per cent. of the population. Where the weekly income was 50s. the rent would be from 8s. to 10s. a week and where the income was only 10s. weekly not more than 1s. or 1s. 6d. could be expected. The price of the most dilapidated area near the centre of the city would run to from £4,000 to £10,000 per acre for purchase and clearance. In order to reduce the loss in dwellings on such sites, there was a tendency to overcrowd cottages or to build blocks. It was impossible for the municipal council to clear slum areas and build houses on them for the workers at reasonable rents without involving the ratepayers in a substantial loss. An attempt to carry out this policy had cost the ratepayers about £12,000. A stringent application of the Housing Act would compel the owners of slum dwellings to sell them at reasonable rates.—Mr. C. J. Murray, the chairman of the Dublin Housing Committee, outlined a number of schemes suggested by his committee for dealing with the housing question in Dublin.—Mr. Patrick Tobin, the joint secretary of the housing committee of the Dublin Corporation, was called on Wednesday and said that the general idea of the committee was to build houses in the centre of the city, near to the places from which the people had been put out. The unskilled labourer, whose wages averaged from 14s. to 18s. weekly could pay a rent of about 3s. weekly, and there would be a loss of 2s. 6d. a tenement on these houses. The economic rent of a three-roomed cottage would be 5s. 6d. Mr. Eyre, city treasurer and joint secretary to the housing committee, deposed that the average deficit on housing schemes in the city represented a levy of between 2¾d. and 3d. in the pound. The average casual labourer could not pay more than 1s. weekly for rent. For this class, houses should be built in the city; but there would not be much difficulty in providing for artisans on the outskirts of the city. He was opposed to building in blocks.—Mr. Patrick Dillon, an officer of the corporation, explained that there is a great demand for corporation houses, and a tendency among tenants in blocks to apply for cottages.—Sir Charles Cameron, Medical Officer of Health for Dublin, stated there were at present 5,712 houses in the city let in tenements. By-laws dealing with overcrowding had not been strictly carried out. There was less overcrowding in Dublin than in most other cities. Further evidence was given yesterday (Thursday), and the inquiry was again adjourned.

CHIPPENHAM RURAL DISTRICT COUNCIL (WILTS) WATER SUPPLY.—At a meeting of the council, held on November 17, Mr. T. J. Moss-Flower, C.E., 28, Victoria-street, Westminster, S.W., and Carlton Chambers, Bristol, attended and explained the scheme of water supply he had, in co-operation with Mr. A. H. Lapham, the council's surveyor, prepared for supplying a large part of the council's area with water, including Chippenham Without, Hardenhuish, Langley Burrell, Kington Langley, Draycott Cerne, Sutton Benger, Christian Malford, etc. The scheme involves the sinking of a deep well and boring, provision of engines and pumps, laying a cast-iron rising main some 2¼ miles long, construction of a large storage reservoir, and some 12 to 14 miles of distributing mains. The scheme was adopted by the council, and instructions were given for the making of the necessary boring.

The Sutton Trustees are about to build 100 model dwellings for the poor in Barrack-road, Newcastle-on-Tyne, from plans by Mr. E. C. P. Monson, F.R.I.B.A., V.P.S.A., of Finsbury-pavement, E.C.

At Carlisle Consistory Court, on Tuesday, Chancellor Prescott refused to grant a faculty to empower the vicar of Hawkshead Parish Church, Lancashire, to enlarge the chapel in the church to make room for a recumbent effigy, costing £1,500, in memory of the late Colonel Sandys, M.P. Opposition to the proposal came from seventy parishioners, and the Chancellor refused the faculty on the ground that it meant grievous interference with the architecture of an ancient church.

Our Office Table.

At a general assembly of Academicians and Associates, held last evening, Mr. Edward Alfred Briscoe Drury, sculptor, was elected a Royal Academician, in succession to Mr. W. F. Yeames, retired, and Mr. H. Hughes Stanton, landscape painter, was elected an Associate of the Royal Academy in the stead of Sir Alfred East, an Academician-elect. Mr. Alfred Drury was born in London, and was educated at New College School, Oxford, afterwards studying at the Oxford School of Art, at South Kensington, and in Paris under Dalou. He exhibited at Burlington House in 1885 with "The Triumph of Silenus," a terracotta, and this summer showed four works at the Royal Academy, "Lilith," "Unity," "The Spirit of Solitude," and "Charming with Childhood's Frank Simplicity." One commission he executed was the decoration of the late Mr. William Young's War Office building, which was followed by his work on Sir Aston Webb's new entrance to the Victoria and Albert Museum. Mr. Drury has also executed statues of Queen Victoria—for Bradford, Portsmouth, and elsewhere—and of King Edward. Mr. Hughes Stanton is a son of Mr. William Hughes, the painter, and was born in 1870. He first exhibited in 1886, and since then has constantly exhibited at the Royal Academy, the Paris Salon, and elsewhere. Three of his pictures have been purchased for the Luxembourg Museum, Paris, the Chantrey Trustees bought in 1908 "A Pasturage Among the Dunes" from the New Gallery, and works by him have been acquired for the municipal galleries of Manchester, Liverpool, and Aberdeen, the Royal Museum, Florence, the National Gallery at Rome, and the Sydney National Gallery.

Mr. A. C. C. Trotter, of Bush and Dryden, Midlothian, has bequeathed to the National Gallery a bust portrait of Mrs. Robert Trotter, painted by George Romney, as Messrs. Ward and Roberts record, in 1788-89. The picture represents the lady of thirty in muslin and a large hat, trimmed with blue ribbon, and is an excellent specimen of Romney's women portraits. Mrs. Trotter was Ann, only daughter of John Trotter, of Castleshields, Berwick, and Horton, Surrey. Born in 1759, she married Robert Trotter, of Bush and Castlelaw, in 1787. Her husband was Postmaster-General for Scotland. She died in 1827. The portrait was shown at the Grafton Gallery in the autumn of 1900.

An important conference of Western Counties local authorities will take place at Bath next month to consider the question of the administration of the Housing and Town-Planning Act. It will be held under the auspices of the National Housing and Town-Planning Council. The conference will consider practical points in the administration of the chief sections of the Act of 1909.

Reports embodying sets of plans of schemes of both urban and rural housing for carrying into effect by local authorities will be submitted, and there will also be a report dealing with the question of urban and rural cottage building in various parts of the country, with designs and estimates. In the preparation of this report the assistance will be available of three architects, including Mr. E. C. P. Monson, the architect to the Sutton Trust. The conference will also consider the question of by-laws, the extent to which the cost of building can be reduced by the standardisation of materials, and the use of new types of material, and the best lines to adopt in the actual preparation of town-planning schemes, after the permission of the Local Government Board to prepare a scheme has been granted. Special consideration will be given to the question of cottage building in rural districts.

In connection with the proposal to form a new roadway from the west end of Glasgow to a point beyond Old Kilpatrick, a conference was held in the City Chambers on Friday. Glasgow Corporation, the County Council of Lanark, and the Town Council of Clydebank were represented, and Bailie J. K. Stewart presided. General approval was given to a scheme for a road, at least 100ft. broad, to extend from Anniesland to a point midway between Old Kilpatrick and Bowling. Several proprietors have offered the necessary ground free, and one proprietor, in addition, has offered a park of 100 acres, another proprietor offering a park of smaller area. There will be broad footpaths, and at least two rows of trees, so that the road will not interfere with any of the town-planning schemes, of which there are several, between the city and Old Kilpatrick. The total length of the roadway will be ten miles, and the scheme will only be proceeded with in the event of a grant being obtained from the Development Commissioners. It was remitted to the master of works of Glasgow Corporation and the surveyors of the other two bodies represented to go over the proposed route, and report to a future meeting.

In their private Bill, to be promoted next session, the urban district council of St. Anne's-on-Sea will seek powers to acquire by purchase and to lay out gardens on the North Promenade (as they have already bought the South Promenade and also St. George's Gardens). They also seek very wide powers for dealing with the foreshore, including the authority to erect a pavilion and bathing bungalows and construct gardens. Additional powers are sought in regard to by-laws dealing with ferro-concrete buildings and sanitation. One of the most important is a clause making owners of houses drained by a combined drain liable for the repair and maintenance of such drain. Parliament will be asked to define what are combined drains, a point which has involved much litigation. A supply of sea-water, similar to the supply in Blackpool, is the object of another clause. The council ask for power to maintain pumping stations and works for public street washing and private supply of sea-water.

A seventeenth edition is published of "Practical Sanitation," by Dr. George Reid, by Messrs. Charles Griffin and Co., Ltd., at 6s. The sixteenth was only published eighteen months ago; but changes are so rapid nowadays—whether it is always "progress" we are not so sure—that, as the author says, alterations and additions have already become necessary.

Professor N. Clifford Ricker's "Simplified Formulas and Tables for Floors, Joists, Beams, Roofs, Rafters, and Purlins," published in this country by Chapman and Hall, Ltd., at 6s. 6d., will be found useful. We gather from the preface that the old inconvenient formulas for rupture and deflection are still common on the other side, so that Professor Ricker's transformation thereof must have come as a godsend to many.

"Practical Surveying and Elementary Geodesy," by Henry Adams, M.I.C.E., etc. (London: Macmillan and Co., Ltd., 4s. 6d.), is another manual for students preparing for examination. Its author's experience has been wide both as a practical surveyor and teacher. Many men who are excellent as either fail to grasp the difficulties experienced by beginners. There are over 200 illustrations, a good set of questions, and some branches are not forgotten—astronomical surveying, for instance—which are not always included in manuals of the sort.

A "Textbook of Highway Engineering," by Prof. Arthur H. Blanchard, C.E., etc., and Henry B. Drowne, C.E. (London: Chapman and Hall, Ltd., 19s.), will be useful to many a British road authority and road engineer. Much that it contains will, of course, be familiar, and even now, in some parts, the roads of the United States are rather monuments of well-meant struggle under difficulty than standards of perfection. Still, here and there, our own more recent perplexities in regard to dust and the idiosynerasies of the road-hog and the motor-'bus, will incline us to study expedients we may not hitherto have had recourse to.

The timber trade of Victoria, Australia, is shown by the returns compiled by Mr. John Laver to have assumed large dimensions; 152,925,000ft. super. of soft wood fall

imported was consumed in 1912, of which 11,000,000 each of dressed flooring stuff and Oregon are shown in the returns. Pacific pine 17,768,000, N.Z. white pine 15,404,000, redwood 12,866,000, kauri 9,280,000, spruce and white deal 5,654,000, red deal 4,705,000, sugar pine and door stock 4,102,000, make up a total three times greater than the yearly imports from 1895 to 1900. The stock usually in hand is 65,000,000ft., about equal to five months' supply.

MEETINGS FOR THE ENSUING WEEK

FRIDAY (To-day).—Glasgow Architectural Draftsmen's Society. "Electrical Installation for Domestic Purposes," by W. G. Peddie. 8 p.m.

SATURDAY (To-morrow).—Association of Builders' Foremen and Clerks of Works. Annual Dinner at the King's Hall, Holborn Restaurant. 6.30 p.m.

MONDAY.—Architectural Association. "Architectural Notes in Piedmont," by F. C. Eden. 8 p.m.

Royal Institute of British Architects. Special Business Meeting to Confirm the Revised Scale of Professional Charges. 8 p.m.

Surveyors' Institution. "The Part Played by Water in Macadam Road Construction," by William G. Fearnsides, M.A., F.G.S. 8 p.m.

Chadwick Lecture on "House Drainage Law," by W. Addington Willis, LL.B. Institution of Civil Engineers, Great George-street, S.W. 8.15 p.m.

TUESDAY.—Institution of Civil Engineers. Discussion on "Dock Construction at Southampton." 8 p.m.

WEDNESDAY.—Royal Society of Arts. "Zoological Gardens," by P. Chalmers Mitchell, M.A., D.Sc. 8 p.m.

Manchester Society of Architects. "Small Country Houses of To-Day," by Laurence Weaver, F.S.A.

THURSDAY.—Builders' Benevolent Institution. Annual Dinner, Whitehall Rooms, Hotel Metropole. 6.30 for 7 p.m.

Victoria and Albert Museum. "Etching and Engraving," by Sir Frank Short, R.A. 8.30 p.m.

The Lanarkshire Asylum at Hartwood is being enlarged by the erection of a separate admission hospital, which will provide 200 more beds, and will cost £30,000.

Mr. John Hartley, J.P., chairman of the Wigton Urban District Council, Cumberland, and senior partner in a local firm of timber merchants, died on Saturday. He had been a member of the council for fifteen and a half years.

The plans for the new Jubilee Hospital at Victoria, B.C., as amended by the architect, Mr. Loring P. Rixford, have been finally passed by the directors. The estimated cost, on a basis of 28c. per cubic foot of building, and including architect's fees, is 399,840dol., or about £80,000 sterling.

Mr. Herbert Turlay Chapman, county surveyor and road engineer under the Somerset County Council, was appointed, at Maidstone, on Wednesday, county surveyor for Kent, at a commencing salary of £800 per annum. There were originally 55 candidates for the post, and these having been winnowed down to six, were further reduced to Mr. Chapman and Mr. H. W. Bowen, county surveyor of West Sussex, for final selection by the Kent County Council.

After many years, the Mungo Park Monument in Selkirk is being completed according to the original design of the sculptor, Mr. Currie, of Dundee, N.B. On the occasion of the centenary of the explorer's death, eight years ago, bronze panels illustrating scenes from Park's travels in the Niger regions were inserted in the pedestal, and unveiled by Sir Harry Johnston. With the surplus funds subscribed, allegorical life-size figures, typifying Peace, War, Slavery, and Home Life in the Niger, have been placed at each corner of the pedestal, which supports a central full-size statue of Park.

The Middlesex County Council will apply next session for Parliamentary powers to make and maintain certain new roads and to widen existing roads in the western suburbs. The scheme includes the construction of a new road, beginning by a junction with the Bath-road and terminating by a junction with the High-road, Chiswick, at a point near Gunnersbury-lane; the widening on both sides of Syon-lane, Isleworth; and the construction of a new road in the same parish, beginning by a junction with Syon-lane and terminating at or near the junction of London-road with Twickenham-road at Busch-corner.

Trade News.

WAGES MOVEMENTS.

LABOUR AND WAGES IN OCTOBER.—The labour returns for October show that employment continued good, although there was some decline from the high level recorded in October, 1912, especially in the principal metal industries. Changes in rates of wages showed a decrease owing to the fall in prices in those industries in which wages are governed by prices. There was a seasonal decline in the building, woodworking, and brick industries. It is reported by the Labour Exchanges that in the building trades there was still a scarcity of certain classes of workmen in some provincial districts.

Mr. W. H. Barker, of Barnstaple, has been appointed assistant architect to the Monmouthshire Education Committee.

The New English Art Club opens its fiftieth exhibition on December 1 at R.S.B.A. Galleries. The Press view is on Friday night.

Sir Joseph Lyons is about to build a new restaurant at the corner of Craven-street and the Strand, at a cost of over £70,000.

A Local Government Board inquiry was held at Halifax on Friday into an application by the town council for sanction to borrow £7,000 for new sewers.

The town council of Crieff, Perthshire, have received a report from the town clerk showing that the net cost of widening the High-street has been £4,790.

Mr. James Barron, of Aberdeen, has been appointed by the Down County Council consulting engineer for the extension and improvement of Kilkeel Harbour.

The death occurred suddenly, at Patriatia, in the Punjaub, on the 11th inst., of Mr. Herbert Septimus Harington, M.I.C.E., of Simla, late chief engineer of the Railway Board of the Indian State Railways, at the age of fifty-nine.

Mr. W. Henry Kesteven, M.R.C.S., writing from Norbiton, points out that there is on Ham Common a most interesting specimen of the Roman altar. It is, he says, at present quite disregarded, and is used as an ordinary road-post.

Liabilities estimated at about £60,000 were reported on Friday at a meeting in the London Bankruptcy Court of the creditors of Charles Edward and W. Bertram Allen, builders and contractors, of Grosvenor-road, Westminster. The assets were estimated to yield a surplus, and the meeting was adjourned.

The architect for the Massachusetts State Building at the Panama-Pacific Exposition will be selected by a State-wide competition. Professor James Knox Taylor, of the Department of Architecture of the Massachusetts Institute of Technology, has been selected by the State Board of Managers to act as advisory architect in this competition.

The estimated cost of the electric tube railway which it is proposed to construct under the Tyne between North and South Shields is £225,000. The plans provide for a single-line tunnel, the length of which will be about three-quarters of a mile, with entrances from Bedford-street, North Shields, and Mile End-road, South Shields.

The town council of Ramsgate having applied to the Local Government Board to borrow £1,700 for the provision of plant for making stone flags and £287 for the purchase of land for the widening of High-street, Ramsgate, an inquiry was held on Friday by Major C. E. Norton, R.E., the inspector. Mr. T. G. Taylor, the borough engineer, explained the proposals.

The new Church of St. Ambrose at Whitehall, near Bristol, was consecrated on Saturday. It is Late Perpendicular in style, and consists of nave, with north and south aisles and western narthex, chancel, and a lofty square tower on the south side of the choir. The total cost has been £13,300. Messrs. W. V. and A. R. Gough, of Bristol, were the architects of the edifice, which is complete.

A verdict of "Suicide whilst of unsound mind" was returned at an inquest at Hampstead on Tuesday on the body of Alfred Thomas Durley, sixty-one, builder, Holtham-road, South Hampstead, who was found hanging on Friday. The widow stated that her husband had been troubled about his business, and was anxious about some property he had bought. Whenever the door-bell rang, he thought it was the inspectors coming in.

LATEST PRICES.

IRON.

Steel Joists, Belgian and German (ex steamer, London)	per ton	£6	2	6	to £6	5	0
Steel Joists, English	...	7	10	0	,, 7	12	6
Wrought-Iron Girder Plates	.....	7	0	0	,, 7	5	0
Steel Girder Plates	.....	7	2	6	,, 8	2	6
Bar Iron, good Staffs	.....	6	5	0	,, 8	10	0
Do., Lowmoor, Flat, Round, or Square	.....	20	0	0	,, 0	0	0
Do., Welsh	.....	5	15	0	,, 5	17	0
Boiler Plates, Iron—							
South Staffs	.....	8	0	0	,, 8	15	0
Best Snedshill	.....	9	0	0	,, 9	10	0

Angles 10s., Tees 20s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £8 15s to £9.
Ditto galvanised, £14 to £15 10s. per ton.

Galvanised Corrugated Sheet Iron—	No. 18 to 20. Per ton.	No. 22 to 24 Per ton.
6ft. to 8ft. long, inclusive gauge	£13 0 0	£13 10 0
Best ditto	13 0 0	14 0 0

Wire Nails (Points de Paris)—

3 to 7	8	9	10	11	12	13	14	15	B.W.G.
8/3	8/9	9/3	9/9	10/3	11/-	11/9	12/6	13/6	per cwt

		Per ton.				Per ton.		
Cast-Iron Columns	.....	£7	10	0	to	£9	0	0
Cast-Iron Stanchions	.....	7	10	0	,,	9	0	0
Rolled-Iron Fencing Wire	.....	8	5	0	,,	8	10	0
Rolled-Steel Fencing Wire	.....	7	5	0	,,	7	10	0
,, ,, ,, Galvanised		8	15	0	,,	9	5	0
Cast-Iron Sash Weights	.....	5	0	0	,,	5	5	0
Cut Floor Brads	.....	9	15	0	,,	—		
Corrugated Iron, 24 gauge	.....	16	0	0	,,	—		
Galvanised Wire Strand, 7 ply, 14 B.W.G.	.....	14	5	0	,,	—		

B.B. Drawn Telegraph Wire, Galvanised—

0 to 8	9	10	11	12	B.W.G.
£10 10s.	£10 15s.	£11 0s.	£11 5s.	£11 15s.	per ton.

Cast-Iron Socket Pipes—							
3in. diameter	.....	£6	2	6	to £6	7	0
4in. to 6in.	.....	6	0	0	,, 6	5	0
7in. to 24in. (all sizes)	.....	5	7	6	,, 6	0	0

[Coated with composition, 5s. 0d. per ton extra, turned and bored joints, 5s. 0d. per ton extra.]

Pig Iron—	Per ton.
Cold Blast, Lilleshall	110s. 0d. to 117s. 6d.
Hot Blast, ditto	70s. 0d. ,, 75s. 0d.

Wrought-Iron Tubes and Fittings—Discount off	
Standard Lists f.o.b. (plus 2½ per cent.)—	
Gas-Tubes	75 p.c.
Water-Tubes	72½ ,,
Steam-Tubes	67½ ,,
Galvanised Gas-Tubes	65 ,,
Galvanised Water-Tubes	62½ ,,
Galvanised Steam-Tubes	57½ ,,

OTHER METALS.

Spelter, Silesian	Per ton	£20	12	6	to £20	17	
Lead Water Pipe, Town	.....	23	10	0	,,	—	
,, ,, ,, Country	.....	24	5	0	,,	—	
Lead Barrel Pipe, Town	.....	24	10	0	,,	—	
,, ,, ,, Country	.....	25	5	0	,,	—	
Lead Pipe, Tinned inside, Town		25	10	0	,,	—	
,, ,, ,, Country		26	5	0	,,	—	
Lead Pipe, Tinned inside and outside Town		28	0	0	,,	—	
,, ,, ,, Country		28	15	0	,,	—	
Composition Gas-Pipe, Town		26	10	0	,,	—	
,, ,, Country		27	5	0	,,	—	
Lead Soil-pipe (up to 4½in.) Town		26	10	0	,,	—	
,, ,, Country		27	5	0	,,	—	
[Over 4½in. £1 per ton extra.]							
Lead Shot, in 28lb. bags	.....	24	15	0	,,	—	
Copper Sheets, sheathing & rods		86	0	0	,, 86	10	0
Copper, British Cake and Ingot		78	10	0	,, 79	0	0
Tin, English Ingots	.....	184	0	0	,, 184	10	0
Do., Bars	.....	185	0	0	,, 185	10	0
Pig Lead, in 1cwt. pigs (Town)		20	10	0	,,	—	
Sheet Lead, Town	.....	23	0	0	,,	—	
,, ,, Country	.....	23	15	0	,,	—	
Genuine White Lead	.....	30	15	0	,,	—	
Refined Red Lead	.....	25	0	0	,,	—	
Sheet Zinc	.....	29	0	0	,,	—	
Old Lead, against account	.....	18	0	0	,,	—	
Tin	per cwt.	10	5	0	,,	—	
Cut nails (per cwt. basis, ordinary brand	.....	0	11	3	,,	—	

TIMBER.

CONSTRUCTIONAL.

Yellow Pine Deals, Quebec, per standard:— 1st quality		£38	0	0	to £45	0	0
,, ,, ,, 2nd ,,		26	0	0	,, 32	0	0
,, ,, ,, 3rd ,,		16	0	0	,, 18	10	0
Spruce Deals: St. Johns	.....	10	0	0	,, 11	10	0
,, ,, Miramichi	.....	9	10	0	,, 10	10	0
,, Boards: Swag	.....	11	0	0	,, 12	0	0
Red Deals: rchangel 1st quality		21	0	0	,, 24	0	0
,, ,, ,, 2nd ,,		16	0	0	,, 19	0	0
,, ,, ,, 3rd ,,		13	0	0	,, 14	0	0
,, ,, St. Petersburg—							
,, ,, ,, 1st quality		16	10	0	,, 18	0	0
,, ,, ,, 2nd ,,		14	10	0	,, 15	10	0
,, ,, Wyburg & Uleaborg		12	10	0	,, 15	0	0
,, ,, Gefle, Gothenburg, and Stockholm	...	12	10	0	,, 17	0	0
White Deals: Crown	.....	14	0	0	,, 15	10	0
,, Seconds	.....	11	10	0	,, 13	0	0
Flooring: White and Planed—							
1st and 2nd quality mixed	...	10	15	0	,, 11	15	0
1st, 2nd, & 3rd quality mixed		10	5	0	,, 11	0	0
Red Planed, 1st quality	.....	14	10	0	,, 17	0	0
Pitch Pine: Prime Deals and Boards	...	18	0	0	,, 23	0	0
Lignum Vitæ	Per ton	7	0	0	,, 14	0	0

	Per cubic foot.					
Yellow Pine Logs (waney board)	0	5	0	,,	0	5	6
Pitch Pine Logs	0	2	0	,,	0	2	6
Birch: Quebec Logs	0	2	3	,,	0	2	9
Oak: Austrian Wainscot	0	7	0	,,	0	8	0
Mahogany: Gaboon	0	2	0	,,	0	2	3

FURNITURE AND HARDWOODS.

Teak: Burmese, per load, 50ft.	£20	0	0	to	£25	0	0
Teak: Java, per load, 50ft.	16	0	0	,,	21	0	0
	Per cubic foot						
Oak Planks: U.S.A., imported	0	1	9	to	0	2	6
,, Boards ,, ,, Prm.	0	3	0	,,	0	3	6
,, ,, ,, Mdm.	0	2	6	,,	0	2	9
Sequoia (Californian Redwood)	0	2	4	,,	0	3	6
Birch: Quebec logs.	0	2	3	,,	0	2	9
,, ,, sawn planks	0	1	3	,,	0	2	0
Oak: Austrian Wainscot	0	7	0	,,	0	8	0
Walnut: Prime boards and planks	0	6	0	,,	0	6	6
Walnut: Mdm. ,, ,,	0	3	6	,,	0	4	6
Greenheart: Hewn logs	0	3	3	,,	0	4	0
Cedar: Cigar box	0	4	9	,,	0	5	6
Satin Walnut: Imp. sawn boards, prime	0	3	4	,,	0	2	9
Orhan: Imp. sawn boards, prime	0	2	0	,,	0	2	3
Mahogany: St. Domingo, Cuba, and Honduras	0	6	0	,,	0	9	0
,, African, Assinee, &c.	0	5	0	,,	0	6	6
,, Lagos and Benin	0	4	6	,,	0	6	0
,, Sekondi and Cape Lopez	0	3	0	,,	0	4	0
,, Gaboon	0	2	0	,,	0	2	3
Satinwood: West Indian	0	10	0	,,	0	14	0
Rosewood ..... Per ton	8	0	0	,,	12	0	0
Lignum Vitæ ..... ,,	7	0	0	,,	14	0	0

STONE.*

Red Mansfield, in blocks.....per foot cube	£0	2	4
Darley Dale, ditto ,,	0	2	3
Red Corsehill, ditto ,,	0	2	2
Closeburn Red Freestone, ditto ,,	0	2	0
Ancaster, ditto ,,	0	1	10
Greenshill, ditto ,,	0	1	10
Chilmark, ditto (in truck at Nine Elms) ,,	0	1	10½
Hard York, ditto ,,	0	2	0
Ditto ditto 6in. sawn both sides, landings, random sizes.....per foot sup.	0	2	8
Ditto ditto 3in. slab sawn two sides, random sizes ,,		1	3

* All F.O.R. London.

Bath Stone, delivered on road waggons, Paddington Depot per foot cube	0	1	7½
Ditto, ditto, Nine Elms Depot ,,	0	1	9½
Beer Stone, delivered on rail at Seaton Station ,,	0	1	0
Ditto, delivered at Nine Elms Station ,,	0	1	6

Portland Stone, in random blocks of 20ft. average:—

	Brown Whit Bed.			White Base Bed		
	Per foot cube.					
Delivered on road waggons at Paddington Depot, Nine Elms Depot, or Pimlico Wharf	£0	2	3	£0	2	4½

SLATES.

	in.	in.	£	s.	d.	per 1,000 of 1,200 at r.stn
Blue Portmadoc	20	× 10	12	12	6	,, ,,
,, ,,	16	× 8	6	12	6	,, ,,
Blue Bangor	20	× 10	13	2	6	,, ,,
,, ,,	20	× 12	13	17	6	,, ,,
First quality	20	× 10	13	0	0	,, ,,
,, ,,	20	× 12	13	15	0	,, ,,
,, ,,	16	× 8	7	5	0	,, ,,
Eureka unfading green	20	× 10	15	17	6	,, ,,
,, ,,	20	× 12	18	7	6	,, ,,
,, ,,	18	× 10	13	5	0	,, ,,
,, ,,	16	× 8	10	5	0	,, ,,
Permanent green	20	× 10	11	12	6	,, ,,
,, ,,	18	× 10	9	12	6	,, ,,
,, ,,	16	× 8	6	12	6	,, ,,

BRICKS.

(All prices net.)

First Hard Stocks	£1	15	0	per 1,000 alongside, in
Second Hard Stocks	1	11	0	,, ,, [river.
Mild Stocks	1	9	0	,, ,, ,,
Picked Stocks for Facings	2	5	0	,, delivered at rly. stn.
Flettons	1	10	0	,, ,, ,,
Pressed Wire Cuts	1	18	0	,, ,, ,,
Red Wire Cuts	1	14	0	,, ,, ,,
Best Fareham Red	3	12	0	,, ,,
Best Red Pressed Ruabon Facing	5	0	0	,, ,, ,,
Best Blue Pressed Staffordshire	3	15	0	,, ,, ,,
Ditto Bullnose	4	0	0	,, ,,
Best Stourbridge Firebricks	3	14	0	,, ,, ,,
2½in. Best Red Accrington Plastic Facing Bricks	4	10	6	,, Net, delivered in full truck loads in London.
* Accrington Best Red Plastic Facing Bricks				per 1,000 £2 10 0
3⅜" ditto Second Best Plastic ditto				2 2 6
Ditto Ordinary Second Bricks				1 11 3
Ditto Plastic Engineering Bricks				1 17 6
Sewer Arch Brick not more than 3⅜" in thickest part				2 0 0
3⅜" Chimney Bricks fit for outside work				2 6 0
3⅜" ditto ditto through and through				2 0 0
3⅜" Beaded, Ovolo and Bevel Jambs; Octagons; 2½" and ½" radius Bullnoses; Stock patterns				3 7 6
Accrington Air Bricks, 9" × 2 course deep, each				0 0 6
Ditto ditto 9" × 1 course ,,				0 0 3

Accrington Camber Arches:—

3 course deep, 4½" soffit, per foot opening							0	1 3
4	ditto	4½"	ditto	ditto	ditto	...	0	1 8
5	ditto	4½"	ditto	ditto	ditto	...	0	2 1
6	ditto	4½"	ditto	ditto	ditto	...	0	2 6
3	ditto	9"	ditto	ditto	ditto	...	0	2 1
4	ditto	9"	ditto	ditto	ditto	...	0	2 11
5	ditto	9"	ditto	ditto	ditto	...	0	3 9
6	ditto	9"	ditto	ditto	ditto	...	0	4 6

Net free on rail or free on boat at works.

GLAZED BRICKS.

HARD GLAZES, (PER 1,000.)

White, Ivory, and Salt Glazed. Best.	Best. Seconds.	Buff, Cream, & Bronze.	Other Colours.	Second Colours.
Stretchers—				
£12 7 6	£10 17 6	£13 17 6	£17 17 6	£13 7 6
Headers—				
11 17 6	10 7 6	13 7 6	17 7 6	11 17 6
Quoins, Bullnose, and 4½in. Flats—				
15 17 6	14 17 6	17 17 6	21 7 6	15 17 6
Double Stretchers—				
17 17 6	16 7 6	20 17 6	24 7 6	17 17 6
Double Headers—				
14 17 6	13 7 6	17 17 6	21 7 6	14 17 6
One side and two ends, square—				
18 17 6	17 7 6	21 17 6	26 7 6	18 17 6
Two sides and one end, square—				
19 17 6	18 7 6	22 17 6	26 17 6	19 17 6
Splays and Squints—				
17 7 6	15 17 6	21 17 6	24 17 6	17 7 6

Plinth and Hollow Bricks. Stretchers and Headers—
5d. each 4d. each 6d. each 6d. each 5d. each

Double Bullnose, Round Ends, Bullnose Stops—
5d. each 4d. each 6d. each 6d. each 5d. each

Rounded Internal Angles—
4d. each 3d. each 5d. each 5d. each 4d. each

MOULDED BRICKS.

Stretchers and Headers—
8d. each 8d. each 8d. each 8d. each 8d. each

Internal and External Angles—
1/2 each 1/2 each 1/2 each 1/2 each 1/2 each

Cill Bullnose, Stretchers and Headers—
5d. each 4d. each 6d. each 6d. each 5d. each

Majolica or Soft Glazed Stretchers and Headers ..... Per 1,000 £22 17 6

,, Quoins and Bullnose... 27 17 6

Compass bricks, circular and arch bricks of single radius £6 per 1,000 over above list for their respective kinds and colours } Not exceeding 9in. by 4½in by 2½in.

Camber arch bricks, any kind or colour, 1s. 2d. each }

Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.

* These prices are carriage paid in full truck loads to London Stations.

	s.	d.		
Thames Sand	7	6	per yard,	delivered
Pit Sand	7	0	,,	,,
Thames Ballast	6	0	,,	,,

	s.	d.		Per ton, delivered
Best Portland Cement	36	0	to 41	0
Ground Blue Lias Lime	21	0	per ton	delivered.

Exclusive of charge for sacks.

	s.	d.		s.	d.	Per yard, delivered
Grey Stone Lime	13	6	to	14	0	
Stourbridge Fireclay in sacks	27s.	0d.	per ton at railway station.			

TILES.

	s.	d.	Dlvrd. at
Plain red roofing tiles	42	0	per 1000 ry. stn.
Hip and Valley tiles	3	7	per doz. ,, ,,
Broseley tiles	50	0	per 1000 ,, ,,
Ornamental tiles	52	6	,, ,, ,,
Hip and Valley tiles	4	0	per doz. ,, ,,
Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000 ,, ,,
Ornamental do.	60	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	0	,, ,, ,,
Selected "Perfecta" roofing tiles:—Plain tiles (Peake's)	46	0	per 1000 ,, ,,
Ornamental do.	48	6	,, ,, ,,
Hip tiles	3	10½	per doz. ,, ,,
Valley tiles	3	4½	,, ,, ,,
"Rosemary" brand plain tiles	48	0	per 1000 ,, ,,
Ornamental tiles	50	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	8	,, ,, ,,
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 ,, ,,
Hand-made sand-faced	45	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	6	,, ,, ,,
Hartshill" brand plain tiles, sand-faced	50	0	per 1000 ,, ,,
Pressed	47	6	,, ,, ,,
Ornamental do.	50	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
alley tiles	3	6	,, ,,

OILS.

Rapeseed, English pale, per tun	£28	15	0	to £29	5 0
Do., brown ,, ...	26	15	0	,, 27	5 0
Cottonseed, refined ,, ...	29	0	0	,, 30	0 0
Olive, Spanish ,, ...	39	10	0	,, 40	0 0
Seal, pale ,, ...	21	0	0	,, 21	10 0
Cocoanut, Cochin ,, ...	46	0	0	,, 46	10 0
Do., Ceylon ,, ...	42	10	0	,, 43	0 0
Do., Mauritius ,, ...	42	10	0	,, 43	0 0
Palm, Lagos ,, ...	32	5	0	,, 33	5 0
Do. Nut Kernel ,, ...	35	0	0	,, 35	10 0
Oleine ,, ...	17	5	0	,, 19	5 0
Sperm ,, ...	30	0	0	,, 31	0 0
Lubricating U.S. ..... per gal,	0	7	0	,, 0	8 0
Petroleum refined ,, ...	0	0	6½	,, 0	0 6½
Tar, Stockholm ..... per barrel	1	6	0	,, 1	10 0
Do., Archangel ,, ...	0	19	6	,, 1	0 0
Linseed Oil ..... per gal.	0	2	5	,,	—
Baltic Oil ,, ...	0	2	6	,,	—
Turpentine ,, ...	0	2	9½	,,	—
Putty (Genuine Linseed Oil) ..... per cwt.	0	9	0	,,	—
Pure Linseed Oil "Stority" Brand } ,,	0	10	0	,,	—

GLASS (IN CRATES).

English Sheet Glass:	15oz.	21oz.	26oz.	32oz.
Fourths	2d. ...	3d. ...	3⅜d. ...	4⅜d.
Thirds	2½d. ...	3½d. ...	4⅜d. ...	5⅜d.
Fluted Sheet	2½d. ...	3⅜d. ...	6½d. ...	7d.
Hartley's English Rolled Plate:	⅛in.	3/16in.	¼in.	
	2½d. ...	2⅜d. ...	3d.	
Figured Rolled and Repoussine		White.	Tinted	
		3½d. ...	5d.	

VARNISHES, &c. Per gallon.

Fine Pale Oak Varnish	£0	8	0
Pale Copal Oak	0	10	0
Superfine Pale Elastic Oak	0	12	6
Fine Extra Hard Church Oak	0	10	0
Superfine Hard drying Oak, for seats of churches	0	14	0
Fine Elastic Carriage	0	13	0
Superfine Pale Elastic Carriage	0	16	0
Fine Pale Maple	0	16	0
Finest Pale Durable Copal	0	18	0
Extra Pale French Oil	1	1	0
Eggshell Flatting Varnish	0	18	9
White Copal Enamel	1	4	0
Extra Pale Paper	0	12	9
Best Japan Gold Size	0	10	9
Best Black Japan	0	16	0
Oak and Mahogany Stain	0	9	0
Brunswick Black	0	8	0
Berlin Black	0	16	0
Knotting	0	10	0
French and Brush Polish	0	10	0

In the Birmingham County Bankruptcy Court Mr. Registrar Whitehead made a receiving order in the matter of H. Whittaker J.P. lately residing at The Nest, Pineapple road, Hazelwell and carrying on business as a builder at York-road, King's Heath, Birmingham.

The extension of the Hotel de Pelerin de Saint Pierre, which contains the Paris Historical Library, is now practically finished. The whole building forms the northern half of a block, the southern portion of which is the Musée Carnavalet, the historical museum of Paris. Between them stands the Lucie Victor Hugo, which will eventually be acquired by the municipality.

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TENDERS.

*** Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

BENWELL.—For sanitary improvements at South Benwell Council School, for the Newcastle-on-Tyne Education Committee:—
Rutherford, James (accepted) ... £1,147 18 7

BUCKIE, N.B.—For the extension of Buckie harbour, for the town council:—
Brand & Sons, Glasgow (accepted) £8,154 0 0

CAMBOLNE.—For carrying out works of sewerage at Northcott, for the urban district council:—
Section No. 1:—
Carkeek, A. (accepted) £11,700 0 0
Section No. 2:—
Duke (accepted) ... ... about £11,000 0 0

CAMDEN TOWN.—For fitting up installations at Great College-street School, for the London County Council:—
Lawrance, E., & Sons (accepted) £150 0 0

CHELSEA, S.W.—For installation of heating apparatus at the new county secondary school for girls, Chelsea, for the London County Council:—
Cannon and Hefford (accepted) ... £828 0 0
[In lieu of tender of James Gray, Ltd., of £700, withdrawn since acceptance, and of the next lowest tender J. and F. May, £729, also withdrawn.]

COLWALL.—For sewerage works in the parish of Colwall, for the Ledbury Rural District Council:—
James, W. (accepted).

GLASTONBURY.—For sewage-disposal works, for the town Council:—
Hunt, A. M., Bristol (accepted) £700 0 0

HIGH WYCOMBE.—For building on Amersham Hill, High Wycombe, of a new Royal Grammar School, for the governors:—
Hunt and Son, High Wycombe ... £9,583 0 0
(Accepted.)

HAMPTON.—For proposed reading-room at Hampton Hill, extension to fire-station, and painting works at fire-station No. 2 for the urban district council :—

Stokes and Sons, Thames Ditton	£497 10 0
Collinson and Co., Teddington	396 0 0
Singleton, J., and Sons, Hampton Hill	395 3 6
Pullen, A., and Co., Chiswick	389 5 0
Potterton, E., East Molesey	382 0 0
Hidden, F. D., and Co., Ltd., Brentford	369 0 0
Wright J., and Sons, Hampton	358 17 0
March, H., Hampton	353 12 0
Ide and Son, Kingston (accepted)	315 10 0

LEICHWORTH.—For erection of church and schools. Messrs. A. F. Scott and Son, A.R.I.B.A., 12, Holborn Hall, W.C., and Norwich, architect —

Church and School :—

Gill, T., and Son	£4,560 0 0
Youngs, J., and Son	4,500 0 0
Kidman	4 459 0 0
Openshaw and Co.	4,418 0 0
Redhouse and Son	4,318 1 9
Ray, J.	4,300 0 0
Hurst	4,150 0 0
Shanks, R.	4,150 0 0
Collins, A.	4,113 17 9
Brignell	4,091 4 0
Souster, G. W.	4,080 0 0
Clark	4,071 0 0
Beckley and Turpe	4,000 0 0
Porter, G. W.	3,995 0 0
Redding	3,978 0 0
Dreyer, O. P.	3,939 0 0
Clarke, Melton Mowbray (accepted)	3,785 0 0

Infants' School :—

Clarke (accepted)	210 0 0

Portico :—

Clarke (accepted)	430 0 0

LEYTON.—For supply of one mile of .05 single-core cable, for the urban district council :—

General Electric Co.	£210 0 0
Pirelli, Ltd.	210 0 0
Conolly Bros., Ltd.	196 0 0
Electrical Engineering and Equipment Co.	169 0 0
Glover, W. T., and Co.	160 0 0
General Cable Manufacturing Co	160 0 0
Siemens Bros. and Co.	152 0 0
Callender's Cable, &c., Co.	150 0 0
Johnson and Phillips, Ltd.	150 0 0
Union Cable Co., Ltd.	148 0 0
B.I. and Helsby Cables, Ltd.	145 0 0
Henley's, W. T., Co., Ltd.	145 0 0
Standard Cable Manufacturing Co.	136 0 0
Western Electric Co.	135 0 0
Todd, R. R. (accepted)	130 0 0

LONDON.—For the supply of such quantities of iron and mild steel as may be required until March 31, as per schedule of prices, for the Metropolitan Water Board :—

Staffordshire iron :—
Miles, Druce, and Co. (accepted).
Mild steel :—
Buck and Hickman (accepted).

LONDON.—For the supply during six months of clean river ballast for Tramways department (Metropolis wharf, schedule No. 74a), for the London County Council :—

Sabey, H., and Co, 7-8, South Wharf, Paddington, W. about	£356 0 0

(Accepted.)

LONDON.—For the supply of 80 movable platforms for car-washers at the Cressey-road tramcar-shed, and 36 such platforms for use at the Camberwell car-shed extension, for the London County Council :—

Hayward, G., and Co., Ltd.	£875 0 0

(Accepted.)

MARGATE.—For the redecoration of the smallpox hospital, for the Isle of Thanet Hospital Authority. Mr. Langham, surveyor :—

Houghton, W., Ramsgate	£129 15 0
Ballard, W. J., Ramsgate	127 0 0
Ross, A. & Co., Westgate-on-Sea	125 0 0
Fuggle, G. H., Broadstairs	118 0 0
Baker, J. E., Margate	87 17 6
White, J. E., Ramsgate	83 15 0
Roger, F., Ramsgate (accepted)	44 13 0

(Surveyor's estimate, £55.)

MURTON.—For the erection of working-class houses at Murton, for the Easington Rural District Council :—

Pitt, H., Sunderland (accepted)	£20,660 0 0

NESTON.—For private street works in Olive-road, for the urban district council :—

Flather, J. W.	£506 19 4

(Recommended for acceptance.)

NEWBOTTLE.—For alterations to the schoolmaster's house, for the Durham County Education Committee :—

Harrison, R. D. (accepted)	£123 0 0

NEWINGTON GREEN, N.—For alterations to drains, and other sanitary improvements at Newington Green Schools, East Islington, for the London County Council :—

Munday, G., and Sons, Eastcheap	£1,501 0 0
Marchant, Hirst, & Co., Kentish Town	1,379 0 0
Finch, B., & Co., Ltd., Belvedere-road	1,350 0 0
Beattie, W., Lower Grosvenor-place	1,256 0 0
Bull, H., Upper Clapton	1,047 0 0
Stevens and Sons, Crouch Hill	1,036 0 0
Roberts, C. P., & Co., Ltd., Tyssen-street, Dalston*	956 0 0

Architect's estimate, £1,091.
* Recommended for acceptance.

NOTTINGHAM.—For the construction of the Scala cinema theatre and café in the Market-place :—

Barlow, J., and Co., Nottingham	£5,127 0 0

(Accepted.)

OXHILL.—For tar-paving the school playground, for the Durham County Education Committee :—

Clarkson, E. (accepted)	£171 12 6

PETERHEAD.—For extension of the baths, for the town council. Accepted tenders :

Masons :—

Low, R., and Co.	£250 0 0

Carpenters :—

Webster, A. and J., Ltd.	81 10 0

Plumber :—

Davidson, J.	178 0 0

Plasterer :—

Shand, W.	147 0 0

POOLE.—For rebuilding the fish-market, for the town council :—

Pearcey, E. P. (accepted)	£734 10 0

POOLE.—For works in Crescent-road, for the corporation :—

Maidment, G. (accepted)	£370 0 0

ROMFORD.—For adapting, enlarging, and enclosing building in Heath Drive, Gidea Park, Romford, for use as a fire station, for the Romford Urban District Council. Mr. H. T. Ridge, assistant surveyor :—

Butterfield, J., and Co., Oak-st.	£288 17 0
Hammond, J. S., & Son, Main-rd.	185 0 0
Cooke, J. F., Hare-street	179 10 0
Lingwood, W., jun., Osborne-rd., Hornchurch	179 0 0
Davey and Makings, North-street	158 0 0
Partridge, A. G., North-street*	153 0 0

Surveyor's estimate, £150.
Rest of Romford.
* Accepted.

ROMFORD.—For works of street improvement in Kingston-road (from Junction-road to the east side of Errol-road), for the urban district council. Mr. H. T. Ridge, Council Offices, Market-place, Romford, assistant surveyor :—

Jackson, W., Forest Gate, E.	£673 13 5
Free, E., and Sons, Maidenhead	630 0 0
Hale, B. H., 45, Globe-rd., Hornchurch (accepted)	592 11 0
Lingwood, W., jun., Osborne-road, Hornchurch	589 7 0

Surveyor's estimate, £570 5s. 4d.

ROTHERHITHE.—For remodelling the Southwark-park school, for the London Education Committee :—

Rice and Son, Stockwell-road	£7,692 0 0
Parker, G., and Sons, Peckham	7,220 0 0
Bowyer, J. and C., Ltd., Upper Norwood	7,037 0 0
Akers, W., and Co., Ltd., South Norwood (accepted)	6,566 0 0

Architect's estimate, £6,350.

SHEFFIELD.—For extensions to the printing department at "Westville," Sheffield, for Messrs. J. G. Graves, Ltd. Mr. P. Blair Frost, P.A.S.I., 23, Glenalmond-road, Ecclesall, Sheffield, architect :—

Contracts A, B, C :—

Longden, G., and Son, Ltd., Sheffield (accepted)	£1,999 0 0

Contract D, E :—

Boot, H., and Sons, Ltd., Sheffield (accepted)	968 0 0

SKEGNESS.—For making-up Wilford-grove, Clifton-grove, Trafalgar-avenue, Marine-avenue, Lifeboat-avenue, and Sea View-terrace, for the urban district council :—

Pearce and Co., Ltd.	£2,829 7 9
Knight, E.	2,708 2 10
Harper, T. H.	2,663 1 11
Lane Bros.	2,586 4 9
Iles, E. and E.	2,558 11 2
Bristowe and Co., Ltd.	2,539 14 0
Palmer, A. E.	2,519 14 1
Dunkley, G., and Son	2,500 6 8
Pullar, H. C., and Co.	2,314 0 7
Thornhill Bros. (accepted)	2,288 12 2

TOOTING, S.W.—For providing and fixing two Lancashire steam boilers in connection with the erection of the Furzedown Training College, for the London County Council :—

Wilson, W., and Co., Glasgow	£1,390 0 0
Tetlow Bros., Oldham	1,340 0 0
Galloways, Ltd., Manchester	1,315 0 0
Brightside Foundry and Engineering Co., Ltd., Sheffield	1 297 0 0
Adamson, D., & Co., Dunkinfield	1,290 0 0
Clayton, Son, and Co., Leeds	1,242 0 0
Tinker, Shenton, and Co., Ltd., Manchester	1,200 0 0
Yates and Thom, Ltd., Blackburn	1,190 0 0
Thompson, J., Wolverhampton	1,155 0 0
Do. (alternative estimates, £1,085 and £1,165.)	
Hewitt & Kellett, Ltd., Bradford*	1,110 0 0

Architect's estimate, £1,055.
* Recommended for acceptance.

TORQUAY.—For the provision of medicinal swimming-baths, for the corporation :—

Bovey, E. P., and Son	£14,912 0 0

(Recommended for acceptance.)

WALLSEND.—For the construction of a new road, for the corporation :—

Robson, W., Newcastle (accepted)	£322 16 0

WALLSEND.—For the construction of a sewer from the secondary school site to the cemetery entrance, for the corporation :—

Robson, W., Newcastle (accepted)	£111 13 0

WALSALL.—For laying a length of cable from Bridgman-street sub-station to the corner of Queen-street, for the corporation :—

Callender's Cable Co. Ltd.	£123 17 2

(Accepted.)

WARMINSTER.—For pulling up existing drains, laying new drains, constructing inspection chambers and flushing chambers, for the Warminster Guardians. Mr. C. C. Hancock, 25, High-street, Warminster, surveyor :—

Holdoway and Cockell, Westbury	£530 0 0
Butcher, E., and Son, Warminster	498 0 0
Ireland, E., Bath (accepted)	459 0 0

WELLINGBOROUGH.—For the erection of wall and fence in Union-lane, for the grammar-school governors :—

Stevens (accepted)	£284 13 6

TO CORRESPONDENTS.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

It is particularly requested that all drawings and all communications respecting illustrations or literary matter, books for review, etc., should be addressed to the EDITOR of the BUILDING NEWS, Effingham House, 1, Arundel-street, Strand, W.C., and not to members of the staff by name. Delay is not infrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

*** Drawings of selected competition designs, important public and private buildings, details of old and new work, and good sketches are always welcome, and for such no charge is made for insertion. Of more commonplace subjects—small churches, chapels, houses, etc.—we have usually far more sent than we can insert, but are glad to do so when space permits on mutually advantageous terms, which may be ascertained on application.

NOTICE.

Bound copies of Vol. CIV. are now ready, and should be ordered early (price 12s. each, by post 12s. 9d.), as only a limited number are done up. A few bound volumes of Vols. XXXIX., XLI., XLVI., XLIX., LIII., LXI., LXII., LXIV., LXV., LXVI., LXVII., LXVIII., LXIX., LXXI., LXXII., LXXIII., LXXIV., LXXV., LXXVI., LXXVII., LXXIX., LXXX., LXXXI., LXXXII., LXXXIII., LXXXIV., LXXXV., LXXXVI., LXXXVII., LXXXVIII., LXXXIX., XC., XCI., XCII., XCIII., XCIV., XCV., XCVI., XCVII., XCVIII., XCIX., C., CI., CII., CIII., and CIV., may still be obtained at the same price; all the other bound volumes are out of print. Most of the back numbers of former volumes are, however, to be had singly. Subscribers requiring any back numbers to complete volume just ended should order at once, as many of them soon run out of print.

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VERNON.—Yes.

T. L.—Yes, if to the point.

SMIFFIE.—We do not know; but B. T. Batsford, 94, High Holborn, W.C., will be sure to know, and possibly be able to supply at second-hand price.

RESTIVE.—We think our note last week covered the points. It is useless to discuss the idiosyncrasies of judges. Our opinion all along was that Justice Hamilton was right.

D.—Thanks; we are always glad to publish from a good photograph when it is possible. In the majority of cases it is not. Our illustrations, though they include from time to time some executed buildings of which photographs can be taken, are primarily given as news from architects and builders.

D. H. H.—We think a reservation of the kind you object to is prudent and justifiable. Character and experience, after all, do count for something in the qualifications of an architect, as well as brilliancy of design. In some cases—comparatively recent instances will occur to all—in which clever young men have won big competitions, it has been found practicable to associate men of proved experience with them, and to advantage; but that is not always practicable.

VICAR.—What is sometimes called "builders' acid," which is equal parts of muriatic acid and water, will remove spots of mortar on brick or stone-work, but is not the right material for cleaning stone that is begrimed from smoke and dirt. To accomplish this, apply to the surface, with a long-handled fibre brush, a strong solution of caustic soda or pearl ash. Let it remain on for about fifteen minutes, then wash several times with clear water, using a stiff brush or broom for the purpose. If this is not effective enough, scrub the stone with a stiff fibre brush, using soft soap and concentrated lye and sand, allowing this to remain on the stone until nearly dry, then rinse with clear water, using a brush to remove the cleansing material. Protect your hands with rubber gloves.

November 28, 1913. Volume CV.—No. 3073.

THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House, Strand, W.C.

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OUR ILLUSTRATIONS.

Dundee University College. The Engineering Department. Messrs. Sir Rowand Anderson, LL.D., F.R.S.E., F.R.I.B.A., and Paul, Architects. View and plans.
A Prize Design for New Shop Front, 210, Piccadilly, W. Mr. F. J. Heppel, A.R.I.B.A., Architect. Details and plans.
Royal College of Art Sketch Club. The Club Prize Set of Sketches in Black and White from Cambridge, by Mr. W. M. Keesey, A.R.C.
New Girls' High School, Tamworth (Staffordshire County Council). Plans, Elevations, and Sections. Mr. J. Hutchings, A.R.I.B.A., Architect.
A Bronze Tablet on a Cottage at Chesterfield. Designed and Modelled by Commendatore Walter Crane, R.W.S., and cast by Mr. Alexander Fisher, R.C.A.

ON CHURCH BELLS.

Up to the 12th century the architects of Christendom were as ignorant of Gothic architecture as were the men who built the Pantheon or the Parthenon. In the early part of the last century the origin of Gothic architecture afforded a fertile subject for discussion with the dilettanti, and whether the pointed arch was suggested by the branching of trees over an avenue, brought fully developed from Palestine, or necessitated by the intersection of circular groins, is still an unsettled point with some. It is certain, however, that Gothic architecture flourished for about four hundred years, and it then died out, probably as a result of that intellectual chaos which preceded the Reformation.

Christianity—we might almost say Gothic architecture—has given us, in the church-bell, the organ, and the Gothic cathedral, three well-developed expressions of religious sentiment, the first of which we are only concerned about at present. It would be heresy to say that Paulinus, Bishop of Nola, in Campania, was not the first to introduce bells into churches (about A.D. 400), for this is the common belief. So we are heretics, for we believe that the earliest use of campanæ was as late as A.D. 605, and this innovation was occasioned by an order of Pope Sabianus, who directed the same to be fixed in churches, that the canonical hours might be distinguished on them.

Small bells, of course, were very ancient, for we are told that Jewish priests and Persian kings wore them on their clothing. There were bells in Ireland when St. Patrick banished some of the snakes from that country. If they were all like the saint's bells, they were hammered metal fashioned like square boxes four or five inches across, there being none like the first bells of later date. The shape of a piece of metal has much to do with its sonorous qualities, and it is possible to cast even lead in such a way that it will give out a clear metallic note when struck with a hammer, and from this it is supposed that our modern cast bells are an evolutionary product of solid metal blocks. Christians having been a proscribed sect in early times, they were not allowed by the Roman Government to have bells, and they had to content themselves with wooden rattles ("sacra linga"—to call the faithful together. We not only have a bell in our churches, we have bells, as many as ten being hung in some of our cathedral towers, while many parish churches can boast of eight. These bells are rung, and chimed; in the former case they are rung, and in the latter they are struck with a hammer, fixed inside or outside the bell, while they are at rest. Authorities differ as to the best place for these chiming-hammers; but the apparatus is distinct, ropes and all, from the peal-ringing wheel and rope.

Though fixing a chiming apparatus may not be considered as being part of an architect's professional work, there can be no doubt but that the tower floors and the framing to carry the bells are within his legitimate province, and they should be designed by him. As we saw it was with sanitation, so it is with this work: there are charlatans ever ready to tell the architect that he knows nothing of bell-hanging or bell-framing, and that he should hand the work over to others who do know. Hear what a clerical gentleman says on this subject: "I have three or four towers in my eye. In one, every timber fixed by the architect for the bell-work had to be hacked and cut away; in another, the whole had to be removed." Again: "With all respect for the professional members of the Institute, I would beg leave to suggest that architects in general would do well to avoid having anything to do with the arrangement of bells, or procuring them, or hanging them. All they should do is to take care that a substantial oak floor of 2in. stuff be provided for the bell-chamber." The architect is then informed that the joists in this floor should be 8in. square, and any beams 12in. at least, with the ends resting on corbels, or a set-off of 12in. all round, while the general public is advertised of the fact that the bell-founder is the proper party to construct the cage for the bells, "independent of the general contractors"—and, of course, of the architect. Architects are long-suffering. They meekly put up with colossal impudence of this kind, and they make no sign of resenting it. Now, if in this case their mentor knew what he was talking about, it might be an excuse for his temerity; but we may well ask how it came to pass that a parson knew more about an oak floor and a simple piece of oak-framing than a man specially trained to deal with both.

We have heard of the architect who built a house and forgot the staircase; of another who forgot the hall-door; and of a third who forgot to put any windows in a room. In an American building paper we found this piquant story: A man built a house, and it was so ugly a friend asked him if he killed the architect. He replied that he did not; he did worse—he "made him live in it." In connection with bells, we have been told on more than one occasion that it was impossible to get them into the belfry without cutting away the floor: "the architect made the opening in it so small"; but on inquiry we found that in either case the architect had not received any instructions about bells, and though it was understood that a bell, or bells, might some day be hung in these towers, the probable size of any of them was not mentioned. To hold an architect responsible for a trap-door in a floor being too small to take a bell the size of which was not determined for years after is absurd. A belfry-floor is trimmed twice; there is a small opening by one of the walls to give access to the bells, and a large one in the centre to allow the bells to pass through. Both are furnished with trap-doors. To frame the belfry-floor, it is necessary to know what the diameter of the largest bell is, and trim the main beams accordingly. Surely there is no mystery about forming an opening, say, 4ft. square to admit a 3ft. 6in. bell? Yet clergymen talk as if an architect, on being told what the size of the bell was, would be so foolish as to have the opening made too small to let it pass through. Where the framing of the belfry-floor is not seen from the church, the opening may be where most convenient in the floor; but where the ceiling of the floor is a feature in the church, then it should be in the centre, and the bell-cage designed to suit it—that is, none of the beams must lie across the opening. The cage-framing should stand clear of the trap.

This is not a treatise on the hanging of bells, so that the subject cannot be treated at length. We will, however, in the space at our disposal, show how bells are usually hung, and the way the framing is arranged to swing them in safety. The number of changes that can be rung on a peal will depend on the number of bells, and then it is ascertained by a simple sum in arithmetical progression; for instance, the change that can be obtained with three bells are $1 \times 2 \times 3 = 6$, whilst the number with eight will be $1 \cdot 2 \cdot 3 \cdot 4 \cdot 5 \cdot 6 \cdot 7 \cdot 8$ 40,320. A smaller or greater number of bells can, of course, have their changes calculated in the same way, the number increasing rapidly with the addition of each bell; thus a peal of ten will afford 3½ million changes, which would take years to ring! Professional ringers have technical names for this change-ringing, and if the architect wishes to pursue this fascinating exercise, any skilled ringer will initiate him into the mysteries of "Treble Bob Major," "Treble Bob Royal," "Grandsire Triple," "Steadman's," and others, not forgetting "Caters." One of the first things an architect should see to is the

height of the chamber in which the ringers stand, for an inexperienced ringer may be entangled in his rope, and a bell, if swung completely round, would take up 20ft. of

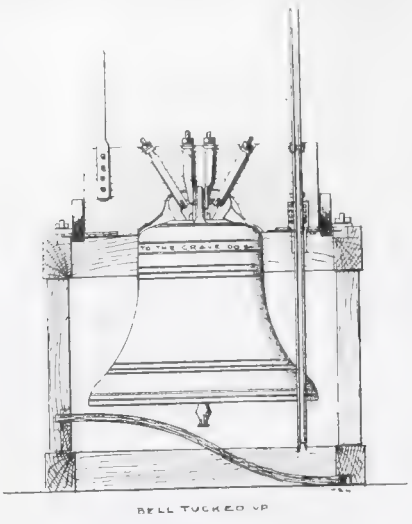
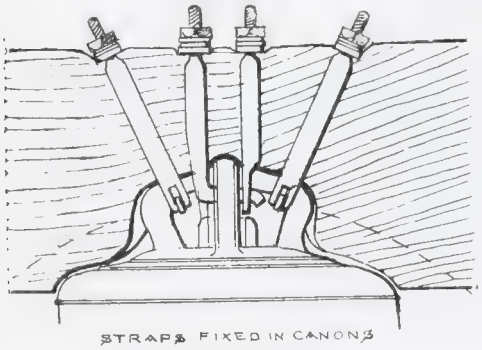


Fig. 1.

it, with the ringer on the end, to test the strength of his head against the oak floor. It is therefore wise to arrange the ringing-chamber to be of a height that will exceed three times the diameter of the largest wheel. Some ringing-chambers, even in



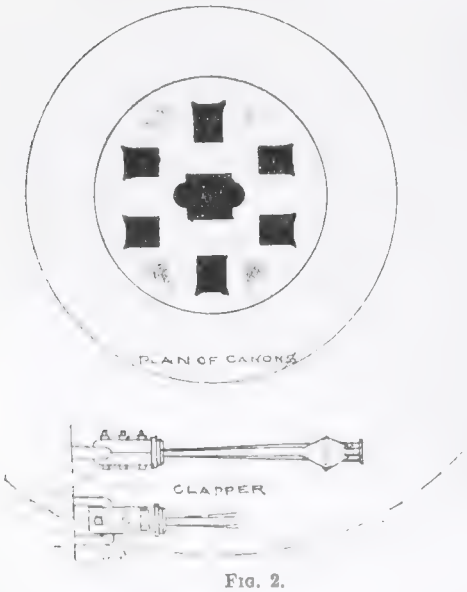


Fig. 2.

cathedrals, have chambers much lower than this; but they are dangerous, especially for amateurs who do not see the necessity for keeping clear of the bell-rope. An architect must be furnished with the sizes and weights of the bells for which he is to provide framing; but we give some memoranda that may be useful at all times. A peal of six bells will probably weigh from two to three tons, the tenor being over 10cwt., and seldom exceeding 15cwt. A peal of eight bells will weigh from 3 to 5½ tons, and the tenor may vary from 15cwt. to 30cwt. The diameter of the bells in a peal of six will vary from 45in. to 28in., and in a peal of eight from 54in. to 28in. In the matter of the weight and size of bells, and the framing necessary to carry them, Messrs. Warner are infallible guides, and the architect may place the utmost confidence in their advice. We have the pleasantest recollections of the assistance they afforded us, some time back, in hanging a peal of small bells in the window-jambs of a church tower. When a bell is hung in a bell-gable, or in a window, there is always the danger of the clapper being thrown—it has happened; so that a periodical examination of its fixing is imperative. When the architect knows the number of bells, their diameters, and the sizes of their wheels, he can design a cage for them. To this he need not involve himself in any elaborate calculations, for he will find the problem already worked out in numerous churches all over the country, and he cannot do better than study a few of them. On this study he may safely base his design.

There is no mystery about the hanging of church-bells; the work is extremely simple, and the framing required is not more elaborate than that in an ordinary kingpost roof; in fact, it is on the same principle, the bellstock being treated as a ridge in an ordinary roof. The framing must be of English oak, and it should be free from knots; for, wherever they are, the wood will twist in drying, and give trouble. It should, therefore, be cut from the butts of large trees, and below the first branches. In putting the frame together, it should be draw-bored and pinned. If the wood is not thoroughly dry, it will shrink, the joints will open, the frame become rickety, and wedging-up will be necessary—which is bungling work, and to be guarded against. The framing should rest on an offset in the tower-walls, or on corbels. There is no reason why the bottom beams should not be fixed; but the topmost ones must stand clear of the masonry everywhere, so that the vibration of the framing will not be transferred to the tower-walls. Amateurs talk much about the virtue of using corbels; but the chief use of these is to support a beam, even if the end is rotten, in a wall. In this climate especially the corbel is for this purpose valuable, though in many cases it is used because it is supposed to be ornamental.

Our first illustration shows a bell "tucked up" in the stock. It is carefully drawn from one cast by Rudhall, of Gloucester, in 1749, and it has this inscription: "I to the church the living call, and to the grave do summon all." To give an idea of the scale to which this sketch is made, the greatest diameter of the bell may be taken as being 3ft. 8in. Fig. 2

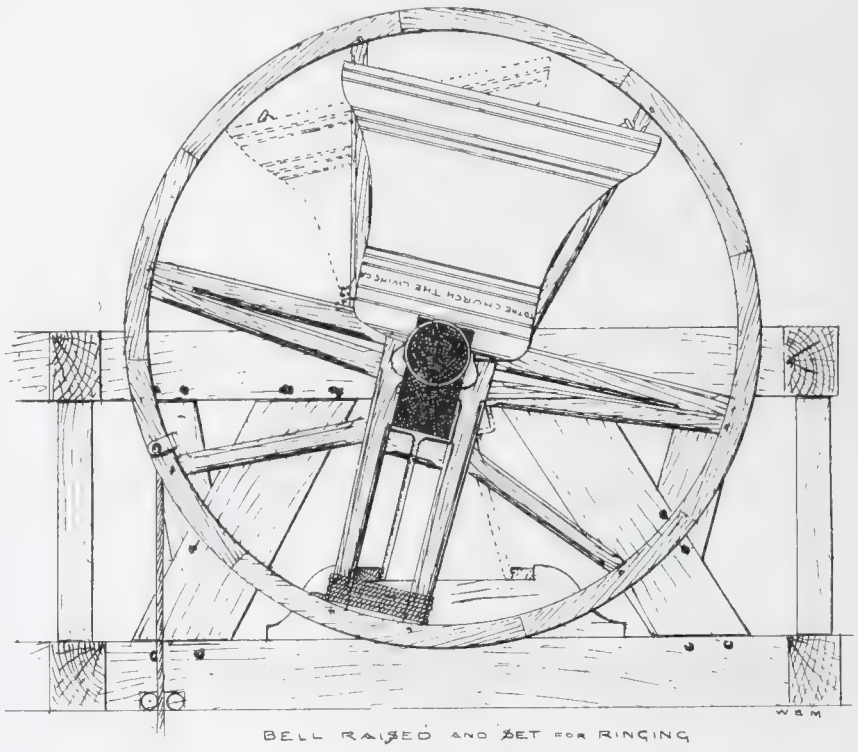


Fig. 3.

shows the hanging-straps to a larger scale, also the crown of the bell, the canons, and the mode of hanging the clapper. The sound-bow is 2⅝in. thick, and the indentation made in it, after 160 years' ringing, is 3-16in. Fig. 3 shows the same bell raised and set, ready for pulling off. The bell would go completely over but for the stay and slider. The former is shown caught against the latter in our sketch. When the bell goes back again, it swings into the position shown by the dotted lines, the stay pushing the slider against the notch shown on the right of the sketch. This prevents it going over, and holds it in position for pulling off again. It will be noticed that the bell-rope is held in the shrouding of the wheel by the deep groove, and kept in position for pulling the bell off by a "fillet" bolted through the shrouds. We may illustrate the framing of a cage, and its adaptation to the belfry, in another article.

THE NATIONAL LOAN EXHIBITION.

On its own account, as well as in the probable absence of any winter exhibition at the Royal Academy, the very interesting loan exhibition of "Woman and Child in Art" at the Grosvenor Gallery will certainly be the success of the season, and the delight of all lovers of the very best of its kind in pictorial art. Moreover, the visitor will have the double satisfaction of seeing many works of the first rank never before exhibited, and of contributing, by

his visit, to the establishment of the fund it is sought to raise for the acquisition of contemporary British works for the national collection, an object which scarcely needs commendation. It is not very creditable to British buyers that Paris is richer in contemporary British pictures than London. Surely, as Mr. Robert Ross aptly points out in his excellent introduction to the catalogue, when any Briton of taste and knowledge realises, as he may do at this exhibition, how easily, and without shock, his eyes may pass from foreign masterpieces to those of our own country, he will come to the conclusion that it is time private enterprise and enthusiasm did something more to encourage the many English artists who are neither dead nor Royal Academicians; yet who, while their works are bought and prized by the rest of the world, are, with a few rare exceptions, absent from the catalogue of the National Gallery of British Art.

The determining motive of selection in this exhibition has been "Woman and Child," and it certainly emphasises a marked gap in the history of British art where there is no Madonna till the days of Alexander Dyce and the Pre-Raphaelites, though, of course, the gap is more than filled by the Mond collection Titian (47), "The Madonna and Child," and the Cowper Raphael (35) of 1508, also a "Madonna and Child." But all will agree with Mr. Ross that, except, perhaps, in Italy, no school has treated motherhood and childhood with such tender sympathy; and that Raeburn, if he had been a pious Catholic, would have most adequately delineated the Virgin and her Divine Child. Romney certainly nears the mark in one or two of his portraits, notably in his "Duchess of Gordon and her Son." There may be exceptions, and possibly Charles Lamb was right, and the ladies of Reynolds are too much like professional mothers, and their offspring look as if they had been brought back from the farm just to be painted with "mamma." Still, all the British children are delightful—those of Lawrence and Raeburn especially so—and compare well, with their mothers, at any rate in physical beauty with those of the sitters of most of the foreign masters.

Entering the gallery, one is glad to recognise, first, Lord Leighton's "Lady Florence Herbert" (1), and next, Sir Edward Burne-Jones's "Aurora" (2), with its background and surroundings developed from a sketch done in 1867 from a bridge near the railway-station at Oxford. The next sumptuous piece of decoration, fascinating by its semi-barbaric simplicity, is a "Portrait of a Woman" (3), said to be the work of some unknown Persian painter. It was exhibited in 1909, at the "Fair Women Exhibition," as "Roubadah, Princess of Cabul," by Omar Meherab.

In the Large Gallery are three Raeburns never previously exhibited: "Mrs. Simpson" (6), a three-quarter length young and pretty woman; "Mrs. Alexander McCrae and Children" (8), mother and girl in white, and boy in red jacket; and "Clementina, Lady Perth, and her Daughter" (28), neither before shown. There are no less than ten of Sir Thomas Lawrence's pictures altogether, several not hitherto exhibited, and others which will probably be new to some—"Caroline, Fifth Duchess of Richmond" (7), and so will be the "Countess of Dysart" (29). There are three Hogarths, till now unexhibited: "An Unknown Lady" (9), "Portrait of a Lady" (11), "The Hon. Edward Montagu as a Boy" (82). Six Gainsboroughs include some of his best work. "Portraits of his Three Daughters" (10) will be familiar to most, and also "Mary Bruce, Duchess of Richmond" (12). There are no less than thirteen of Sir Joshua Reynolds's works, most of them well known, but "The Hon. George Seymour Conway as a Boy" (103), "Miss Catherine Bishop" (108), and "Lady Gordon and Her Son" (112) are new, as far as exhibition goes. Eight Romneys, only one of which has been previously shown, though most of the others are more or less well known, include his "Portrait of Mrs. Oliver" (14), "Lady Hamilton as the Ambassadress" (26), a sketch of "Lady Hamilton" (86), and "Miss Farrar" (89). John Hoppner has seven paintings attributed to him, nearly all hitherto unexhibited, the most interesting being "Elizabeth, Countess of Derby (Miss Farren)" (15), and "Lady Paget and Child" (16). A single example by Isaac Oliver, "Equestrian Portrait of Henry Prince of Wales, son of James I." (18), well deserves its inclusion, and will be seen by most for the first time. The picture is a large one, 92 by 92 inches, and the Prince, clad in a suit of mail, is mounted on a white horse, the trappings of which are richly embroidered and jewelled.

The Small Gallery is mostly devoted to foreign masters. There is one Andrea del Sarto, "The Holy Family" (31), a repetition of the picture in the Louvre; and one Veronese, "A Venetian Woman as Venus" (32), the originality of which is not established. Bernardino Luini's "Portrait of a Lady" (33) was last exhibited in 1899, and is believed to be the only portrait by him left, except the founders in two of his altar-pieces at Como. There is a "St. Catherine" (34), by El Greco. Of the two Titians, one is the wonderful Mond "Madonna" (47), before-mentioned. The other is "Tobias and the Angel" (49). Three examples of the Flemish school by Antonio Moro are the "Duchess of Parma" (44), "Eliabeth of Valois" (17), Philip the Second's third wife, and "Mary of Hungary" (19), the two latter being hung in the Large Gallery. Of the two Rubens, one, "A Nun" (45), has not been hitherto shown; the other is "A Daughter of Gerbier" (50). The one Tintoretto is "Leda and the Swan" (52), said to be the most authentic of the three versions, and not before exhibited.

Sir David Wilkie is represented in the Long Gallery by one example, "Lady Lyndhurst" (85). In the same room is Opie's "Mrs. Reynolds," the wife of the well-known engraver. Here also is the solitary Velasquez, "Isabella of Bourbon" (95), and Vandyck's "Marchesa Balbi" (100). George Watson, at one time President of the Royal Academy, is shown by a portrait of his son (107).

The only lady artists represented are Angelica Kaufmann, whose "Lady Caroline Damer" (110) has not before been shown, and Mrs. Maria Cosway, whose "Hon. George Lamb as a Child" (116) represents an infant Bacchus holding grapes, with leopards on either side of him.

ORNAMENTAL TILE-WORK. VI.

CHIMNEYS.

Considering the prominence of the chimney as a striking architectural feature, it is rather a wonder that there is comparatively so little endeavour made to make it even presentable on the majority of buildings. Even with the simplest cottage work it is possible to transform it into quite a decorative feature, by very inexpensive methods indeed, if only a little thorough consideration is given to it. The large-size tiles—viz., 10½in. by 6½in. are also of such a character that quite good projection can be given a few oversailing courses in the formation of the most simple cornices, which possess a large amount of architectural effect. For instance, something after the nature of Figs. 3 and 8. For very plain work, however, a few simple, projecting courses of tiles, one used singly as a fillet course, with two or three rows over. A similar blocking course, with a single tile set on the angles, sur

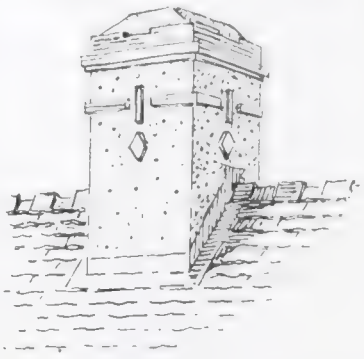


Fig. 1.

mounted with splayed cement or roughcast, such as illustrated by Fig. 1 forms a pleasing variation from so much plain brick oversailing work. Simple tile-work is no more costly than brick; at the same time it has not the coarse or heavy character of the latter. Being of a far finer nature, it is thus more particularly adaptable to roughcast work than the former, which usually affords a somewhat too violent contrast, unless carefully combined with tilework, to break its harsher effect. The narrow relief of the tile,

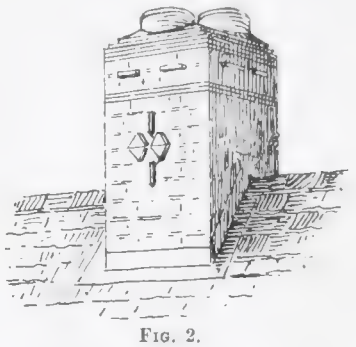


Fig. 2.

worked mainly on a flush-face style, in brickwork also affords another system of slight relief in a plain manner. Particularly when the brighter red of the tile is contrasted with brown, stock, or buff bricks, as illustrated by Fig. 2. The slightest of brick relief is also introduced, in combination, at the centre of these two stacks, merely composed of pointed coping-bricks of shallow projection. The brick angles to these can be easily taken up with the ready-made chamfer-bricks, so that no special cutting need be involved here. The bolder projection given by the slight



Fig. 3.

tile cornice—illustrated in the succeeding figure, No. 3—with its course of double-tile dentils and angle-necking, forms a very simple, but nevertheless effective, chimney-stack, well suited for work of a rustic or suburban character. Fig. 4 illustrates something more approaching the customary type

of moulded top, in general effect. A few courses of tiles so disposed, in a combination of single, double, and treble rows, etc., possess all the effect of an elaborately-moulded cornice-piece when seen from the ground or a distance the position from which such are mainly viewed. The sunk-brick relief panel in this figure is simply formed with the bull-nosed brick, filled with pointed copings and cement, which can be coloured, if desired, to match the brickwork. The latter decoration can be replaced with tiles, set to many designs, in a finer system of ornamentation, such as the diamond pattern, illustrated on the next figure, No. 5. The points to the diamond are started with



Fig. 4.

pointed coping-bricks, to eliminate fine cutting, which would occur with tile-ends. The course of pointed coping-bricks to the top also affords further enrichment, although quite simple in construction. The splayed coping of cement over it being again surmounted by a single-tile course, as seen. Fig. 6 is also based mainly on the ordinary conventional lines, but still affords a somewhat more picturesque appearance, merely by the introduction of single-tile quoins of slight projection. A more picturesque and original appearance is given by Fig. 7, although there is far less work in its construction. It is merely composed by a slightly projecting, heavy blocking course on a double-tile band, the latter being further supported on two or three double-tile dentil-blocks. A slight necking course is also

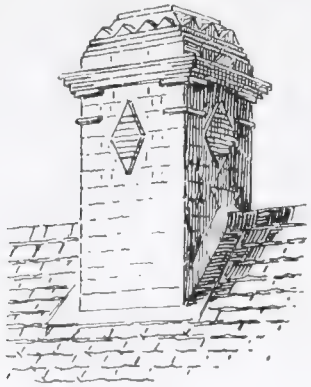


Fig. 5.

merely suggested by the insertion of single tiles on the angles. The latter could be carried across, if preferred, and a course of tile quoins inserted, as in the preceding example, to form another variation. Others could be formed by introducing tile diamonds, as in Fig. 5, or different made-up tile patterns. Although these all represent distinct variations, quite different from the majority of such work in vogue, it is quite possible to produce many other types on more original lines still, after the character illustrated by Fig. 8. The broad, projecting cornice member, as previously mentioned, is one which is particularly effective and well worthy of special note. The shallow, canted angles, treated at the top with a few projecting tiles on edge, forming brackets. They afford quite a large amount of variation, which is thus attained in the most simple manner. A panel composed of long and short tiles, with pointed bricks in the angles, are introduced on the front and sides, with



Fig. 6.

a drop-piece in a brick or projecting base of the same material. The top is finished with a fine coating of cement. If preferred, the tile brackets could be sloped off at an angle, which would prove more effective, well worth the little cutting and rubbing involved. This sketch merely illustrates to a slight extent the possibility of a great deal of work on somewhat similar lines. Work which might all be made equally as original, varied, and

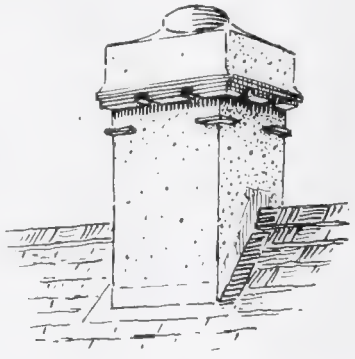


Fig. 7.

distinctive in character, if given a little thorough study of the application of the tile in its ornamental capacity. Unfortunately, space does not permit of carrying any particular style or type further, or to the extent possible. Such work, as shown by the two latter figures particularly, might very well be arranged in concrete construction. A different method of frieze treatment, as

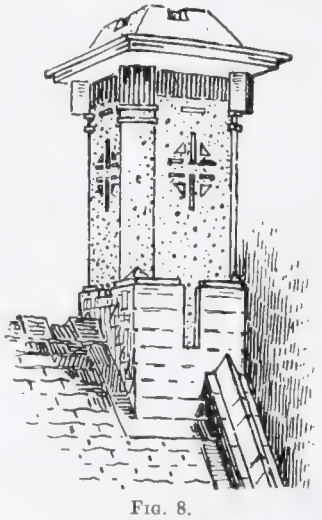


Fig. 8.

applied to the chimney-stack, is illustrated by the succeeding figure, No. 9. It is here broken up into smaller panels by slightly-projecting vertical tiles. A central band of white, buff, or other tinted roughcast—of rather a fine character—forms a middle line to the frieze itself. The centre of each panel is formed with a patterned tile, placed flat, with pointed bricks arranged round it. The top and bottom courses adjoining these being formed with the ready-made chamfer-brick to avoid cutting. There is also the possibility of introducing a little colour relief here with considerable effect, by utilising subdued tones of glazed tile-work in place of the central-patterned ones, to the small panels. A more elaborate finish to a large stack, somewhat similar, is seen in illustration No. 10, broad tile quoin-blocks to the depth of a course of brickwork, being used. Broad triglyphs to the frieze are formed with alternately projected tiles on edge. The intermediate

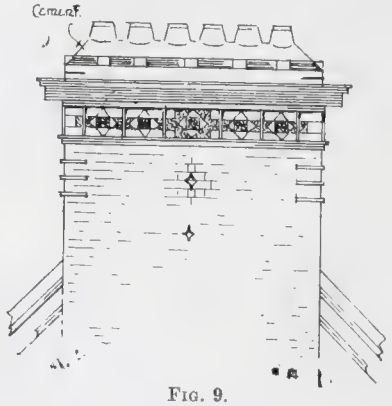


Fig. 9.

panels could either be patterned or in colour, as suggested for the former example. The dentil course over is formed with pointed bricks, the under ones being slightly recessed. It should be noted with this class of ornament, as applied in the two latter instances, how far more refined it is than brick relief alone. Used in conjunction with brick, it is really possible to execute work of practically equal refinement to some of the best Classic examples, although in quite a different style of ornament. A chapter on this section would hardly be complete without calling attention to the particular qualities of the last illustration (Fig. 11). Although based on an old-fashioned principle,

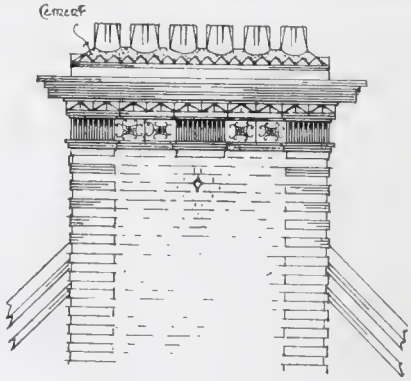


Fig. 10.

it is, nevertheless, an extremely good one, which it is a pity not to see in more general use. The flat top prevents both wind and rain from driving directly down from various angles. The angle-blocks themselves also deflect these forces considerably from various other angles. The smoke, in consequence, being drawn out of one or the other of these openings even during very high winds. As a smoke-preventer it has long been recognised in many localities of a bleak and open character, where the full force of heavy gales are felt. Generally speaking, its qualities are evidently not widely known, or, at any rate, certainly not adopted to anything like universal use. Its simple, but picturesque, qualities are also a further recommendation, particularly in lieu of the majority of chimney-pots, which are often of a reverse nature. It is quite apparent that the chimney-stack, whilst forming a really important feature—one of the most striking and

pronounced on any building when really studied from the point of architectural design, is too often ill-considered. Even on buildings which show a great deal of study and thought in the main design or general composition it is more often evidently considered that anything will do for the chimney-stacks; any old stock-patterned type. No matter whether they happen to suit the particular structure or not. That this is a great mistake, quite spoiling any genuine continuity of design throughout, which should be the chief endeavour for really satisfactory work, anyone can easily discern for themselves merely by looking around in their own

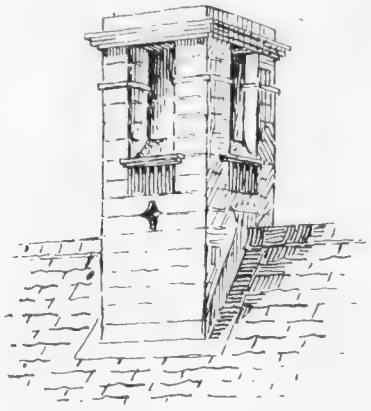


Fig. 11.

vicinity. A badly-designed or unsatisfactory stack forms one of the strongest conflicting notes possible on any structure, from a genuine architectural point of view. It should, therefore, be given quite as much study and consideration as the lavishly decorated façade, porch, or any other individual feature which goes to make up the whole. Even if it occasionally happens to come in an awkward position for treatment, it will still be found that, with proper attention, it can be made an equally as decorative and ornamental feature as any other upon the building.

W. G. Kerby, Architect.

THE ARCHITECTURAL ASSOCIATION.

The fortnightly meeting of the Architectural Association was held on Monday evening at 18, Tufton-street, Westminster, the chair being occupied by the President, Mr. W. Curtis Green, F.R.I.B.A. Four nominations for membership were read, and Messrs. S. D. Felkin, F. Saxon Snell, and G. W. Widmark were elected as members. Mr. Leonard Elkington, hon. secretary, announced that at the meeting of the Camera, Sketch, and Debate Club, to be held on Thursday, December 4, Mr. W. J. Palmer Jones would read "Some Notes on Egypt," illustrated by sketches.

ARCHITECTURAL NOTES ON PIEDMONT.

A paper on this subject, illustrated by numerous lantern slides, was read by Mr. F. C. Eden. Having referred to G. E. Street's denunciatory criticisms of the art of the Italian Renaissance, in the preface to his "Brick and Marble," penned in 1855, as in absolute contrast to the viewpoint of the present day, the lecturer admitted that Piedmont, and particularly the byways into which he proposed to guide his audience that evening, was by no means noted for pre-eminence in the arts. He proposed to keep upon the lower steps of that great mountain theatre of which Piedmont forms the stage, with Turin as an approximate focus. He should pay a short visit to the Val di Pesio. Saluzzo is our next stopping-place, at the foot of the Lothian alps, of which the magnificent pyramid of Monte Viso is monarch. A short turn follows up the Valley of Susa, to visit the Sagra di San Michele. From here the railway takes us in a north-easterly direction, passing by the famous valleys of Lanzo, Aosta, and Gressoney, to Biella, at the foot of the Apennines, and thence to Orta, where Piedmont is left behind. The situation of the Certosa, or Charterhouse, of Pesio, is enchanting, and still seems pervaded by an air of monastic serenity and recollectedness. High walls rise from a steep grassy bank over the impetuous torrent of the Pesio. A covered bridge adorned with paintings spans the river in a single arch, and is the only means of approach to the convent grounds. Opposite the bridge is the main entrance, through which one passes to the cloisters, which are of vast extent, and still show many marble shafts and carved capitals, dating from the end of the 12th century, when the monastery was founded. At Saluzzo you unexpectedly come across the absolutely pure French Gothic choir. It was built about the middle of the 15th century by Ludovico, first marquis of that name, of a fine dark-grey stone, which still retains every minutest mark of the tool on its delicate carvings. A memorial of an earlier marquis, Federigo II., is the Castle of Verzuolo, a few miles out of the town. It dates from about a century earlier than S. Giovanni, and is a great four-square pile of brick, now in private hands, and perhaps rather too trim and fresh. The town itself contains interesting works in the same material, of which the façade of a desecrated church is a fair sample. A 19th century worthy, the Marchese Taffarelli d'Azeglio, was a great benefactor to the town. Besides presenting it with the Casa Cavassa, a very fine specimen of a Cinquecento house, retaining much contemporary decoration very well preserved, he endowed the hospital with lands at Lagnasco. On this property are two so-called castelli, less like castles than deserted villas, facing one another across a grassy court. They contain painted wooden ceilings, chimneypieces, floors of good old glazed and patterned tiles (rather rare in Italy), and many scraps of detail suited to find a place in an architect's sketchbook. In approaching Turin by the Mont Cenis route, one sees in the valley of the Dora, to the right shortly before passing the station of S. Ambrogio, an abrupt mountain jutting into the valley. Wooded below, precipitous and rocky above, it is surmounted by what looks like a castle standing among ruined outworks. It is not, however, a castle, but an abbey, the Sagra di San Michele. Some time before the middle of the 10th century a recluse from Ravenna had built a small oratory on the top of Monte Pirchiano, as it is called. At the end of the century a Frenchman, Silvester II., was Pope. By his advice or command Hugo di Montboissies, an Auvergnat noble, acquired the site and founded thereon a Benedictine monastery. As the institution increased in numbers and importance, the church was found insufficient, and the buildings we now see belong to a later period. Of the early oratory part still exists embedded in the walls at the far end of the crypt, as well as one wall of the primitive hermitage. Hugo's church, with its three apses, is to be traced under the floor of the present church, and part of it still stands outside the present west wall, and is known as the Old Choir (Coro Vecchio). This dates from about 1002. To the time of Hugo also belong the monastic buildings on the south side of the church, surrounding a small irregular cloister. The extensive outbuildings to the north, now entirely in ruins, and of uncertain use, date from the second half of the 11th century, as well as the likewise ruined guest-house near the entrance. Hugo's church extended to the limit of the available building space, so when enlargement became necessary an artificial platform had to be formed by the erection of an enormous substructure of brownish grey gneiss, upon which to build the eastern limb of the church. This was begun about the middle of the 12th century. The former church was demolished by degrees, and it was not till the next century that the western bays of the present church were completed. The precincts are entered by a fortified gate-house; a steep double ramp leads to a small terrace, whence it is a further climb of about seventy steps to the main entrance. The church itself is clearly distinguished from the basement, both by its apsidal form and green hue, the material used being an amphibolite, found in erratic blocks scattered about the mountain-top. The whole interior of the space below the church is occupied by a stair, the Scalone dei Morti, in part cut out of the living rock, surrounded by huge sepulchral recesses, the whole strangely impressive in its grim dignity. Some of the recesses contain sarcophagi, but one is grated, and is occupied by a huddled group of skeletons, clad in tattered monastic habits. At the top of the stair is a fine Lombard doorway, richly carved with signs of the Zodiac and mythological monsters. After passing through this doorway you turn sharply to the right and mount a temporary wooden stair through what was formerly a library and sacristy, but is now practically a ruin owing to a besotted "restoration," still in hand, though it has been suspended for twenty years or more. The door of the church is richly moulded, and apparently of 13th-century date. In its present deplorable state it is difficult to appreciate the church. Biella is reached in between two and three hours from Turin. It consists of an upper and lower town. In the former are several houses of mediæval date, with terracotta stringcourses enriched with Gothic foliage showing through later trappings. At the end of the only street of the upper town is a Renaissance gate, above which the buildings of Oropa may be descried perched on a mountain shelf more than 2,000ft. above. About the middle of the 4th century S. Eusebius, Bishop of Vercelli, built at Oropa a rough votive chapel for an image, and this, which still exists, forms the nucleus round which the whole immense structure has clustered. Though the buildings of the church and hospice are of Renaissance date, and some very late, the sanctuary can boast a very respectable antiquity. From the 5th century till 1170 Benedictines were established here, and were followed by Cistercians, who remained till 1459. The present church was begun at the end of the 16th century, and was consecrated in 1600. Shortly after this a design for a hospice for the accommodation of pilgrims was prepared by the architect, Negro di Pralungo, and the part adjacent to the church was begun. In 1644 the block inclosing the quadrangle on the entrance side was started, and in 1720 the façade was erected from designs by the celebrated Filippo Juvara. The forecourt is entered through iron gates between the terminal pavilions of two immensely long wings. The ground slopes up to a finely designed stair, which lands you about level with the fourth story of the pavilions. The ground floor on each side of the entrance is formed of open arcades, extending the whole depth of the front block. This loggia, which forms such a striking feature of the design, is strictly utilitarian—viz., to shelter the multitudes of pilgrims from the weather. For how much of the façade Juvara was responsible, one is unable to say—certainly for the grand stair and the central pedimented feature; whether the fine conception of the open ground story was his is doubtful, since this side of the quadrangle was begun, as we said, in 1644, nearly eighty years before he comes upon the scene. The great quadrangle measures about 420ft. by 230ft., and is surrounded by a cloister walk, for the most part arcaded in that pleasant combination of arch and lintel falsely attributed to Palladio. There is a scheme on foot for nearly doubling the size of the already enormous establishment, including the erection of a huge domed church in the high ground at the back. A beginning has already been made after designs by an architect named Golletti, who flourished, as all architects do, about the year 1750. From Biella to Orta, which is on the extreme confines of Piedmont, if, indeed, it is not actually in Lombardy, it is a lovely drive of about eight hours. The little town of Orta, consisting of a single street, is full of good things. The town hall at the end of the piazza is a most picturesque object, adorned with fading heraldic frescoes. Just off the piazza on the way up to the church is the Palazzo Gemelli, a striking unfurnished house, with a great pointed cove under the eaves, the piano nobile being defined by a band of cherubs below the windows, and representations of the four continents above. The entrance door is a refined piece of work, something

more than reminiscent of Vignola at Caprarola. The detail is an improvement on Vignola's doorway at the Farnese Palace in some respects e.g., instead of the metopes being charged with rather dullish ornament, they are plain, and filled in with the dark-green serpentine, of which such excellent use is made in the buildings of the Sacro Monte. In front of the palazzo is a broad paved and balustraded terrace, terminating in a pretty arrangement of steps. The principal attraction to architects at Orta is the Sacro Monte, which consists of a series of chapels containing representations of scenes from the life of S. Francis.

At the close a short discussion took place, in which Messrs. Alick Horsnell, A. G. R. Mackenzie, Geoffry Lucas, T. C. Yates, John Williams, C. W. Bowles, and the President took part, and a hearty vote of thanks was accorded to Mr. Eden.

THE A.A. CONVERSAZIONE.

The annual conversazione of the Architectural Association was held at the Royal Architectural Museum and the adjoining schools, 18, Tufton-street, Westminster, on Thursday evening in last week, and passed off most smoothly and successfully. The guests were received by the President, Mr. W. Curtis Green, F.R.I.B.A., and Mrs. Curtis Green, supported by the Vice-Presidents, Messrs. H. Austen Hall and E. Maurice Webb; the Treasurer, Mr. Arthur Keen (a Past-President); the Hon. Secretary, Mr. G. Leonard Elkington, and the members of the Council. Among those present were Sir Ernest George, Messrs. Leonard Stokes and Gerald C. Horsley (Past-Presidents), Robert Atkinson, F. Dare Clapham, F. T. W. Goldsmith, Alan Potter, J. B. Scott, R. W. Stoddart, and F. R. Yerbury (Secretary). The great feature of the exhibits was the large collection of framed holiday sketches hung in the lecture-room on the first floor. Sir Ernest George contributed some delightful examples of his work from North Italy and France; Mr. Reginald Blomfield sent a large pencil sketch of Coutances and another of La Rochelle; Mr. C. E. Bateman, of Birmingham, pen-and-ink drawings of the Chateau Villandry, Amboise, Charlton, and Wincheombe village; Mr. E. Guy Dawber lent a drawing of the Broletta at Como; and Mr. Frank L. Emmanuel one of the Hotel de Ville at Brussels; Mr. H. M. Fletcher views of Chartres; Mr. D. J. Gradon a water colour of Wymondham Church; the President of the Association, water-colour sketches of Venice; while a very remarkable and excellent series of works in the same medium were lent by Mr. Arthur Harrison, of Birmingham, from fields of study so diverse as Candebec, Laon, Hoorn, Middleburg, Volendam, Caen, Amiens, Haarlem, Monackadam, Bruges, Malines, Stamford, and Cirencester; pencil sketches of St. Mary le Bow, Cheapside, and Bramshill House, Hants, by Mr. W. G. Newton; Mr. C. Wontner Smith showed a perspective of Fountains Hall; and Mr. G. Vey a series of etchings of buildings in progress in Waterloo-place, Tufton-street, and other London streets. Other exhibitors in this class included Messrs. Brake Baldwin, Cecil C. Brewer, F. Dare Clapham, A. B. Knapp Lisbon, Edward T. Gunn, McDonald Gill, A. T. Griffith, Edwin T. Hall, Stanley Hamp, Alick G. Horsnell, P. Cart de Lafontaine, G. M. Mackenzie, G. S. Nicol, G. H. Fellowes Prynne, Christopher M. Shiner, P. J. Westwood, L. Sutton Wood, H. F. Worrall, and Maurice E. Webb. Among the decorative work lent by Messrs. Aumonier was a bedstead in cedarwood, decorated by Miss Jessie Bayes, and other works were shown designed by Messrs. Arthur T. Bolton, Alfred H. Powell, and Allan F. Vere. A collection of glass and objects in pewter were exhibited by Messrs. R. Stephen Wing, A. T. de Navarro, and A. B. Yeates. There was a large display in frames of photographs and sketches from the Valley of the Loire by Mr. A. W. Hennings and other members of the Camera, Sketch, and Debate Club, and of large impressionist photographs of Volendam, Amsterdam, and canal folks and scenes by Mr. F. W. Yerbury. In the gallery on the second floor were hung drawings by the students in the A.A. School of Architecture. During the evening an excellent programme of music was carried out by the Blue Imperial Orchestra, conducted by Mr. A. H. Pitman.

ON THE PART PLAYED BY WATER IN MACADAM-ROAD CONSTRUCTION.*

By W. G. Fearnsides, M.A., F.G.S.
(Fellow of Sidney Sussex College, Cambridge, and Sorby Professor of Geology in the University of Sheffield.)

Water, left to itself, will, in time, dissolve a little of almost any road material. Natural waters have at one time fallen as rain, and in their passage through the atmosphere have taken up carbonic acid and oxygen from the air. Water as a solvent cleans the surfaces of the mineral particles which aggregated form the road-stones, and brings the carbonated and oxygenated water into chemical contact with the bare surface. If all the mineral particles of the stones are of such composition that none of them react with the aerated waters, all is well, and neither rain nor water-carts can work chemical damage to the road. Usually this is not the case, and, except in the case of flints, and perhaps some quartzites, there is reaction between atmospheric waters and some or other of the mineral constituents of the road-stone, which in time leads to the disintegration of the stone. Any rock which contains felspar—and the best road-stones, granites, syenites, diorites, basalts, and the like, consist largely of felspar—will have the felspar gradually attacked, and the less silicious the felspar the more soluble does it prove. Any rock which contains a mineral rich in iron in the unoxidised (that is, in the ferrous state) will have that mineral rusted as well as partially dissolved. Any rock which has a mineral rich in lime will have that lime mineral transformed to calcium carbonate, which in continuation of the same process will surely be dissolved. Any sulphide mineral will in time be in part oxidised to sulphate with the production of some free sulphuric acid, a substance which may be trusted to disturb the equilibrium of its surroundings and greatly to further the disintegrating process. The rate at which stones in a road-crust suffer chemical disintegration is not in general great as compared with the rate of mechanical abrasion by traffic; but in the under, or foundation, layer, where "out of sight is out of mind," and the stones are left to stew in water—sometimes percolating, sometimes stagnant—for whole seasons together, chemical solution is the process which counts. On ordinary road-stones solvent action is most destructive and rapid when it attacks carbonate of lime present as a cement holding other and less soluble mineral grains together. The hard cement-stones of the Lias and the Oolite clay districts of the South-eastern Midlands often go to pieces from this cause. Corallian calcareous grits of Yorkshire and Dorset, Upper and Lower Greensand of Devonshire and the Weald, and even the famous Kentish Rag in its less compact condition, should be protected from the solvent action of water, and when buried are never free from suspicion. Bastard limestones, much used for second-class roads in the Pennine District, as well as in parts of Devonshire, Shropshire, and North Wales, also suffer solution changes; but with the increase in the percentage of lime carbonate the dissolving waters become saturated at the surface of the stones, and the danger of actual disintegration by partial solution is reduced.

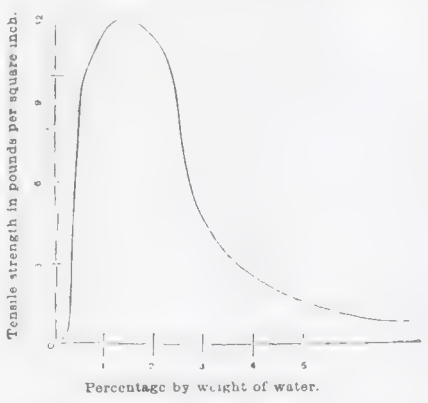
Igneous rocks, when compact and fresh, are attacked so slowly that through the space of one man's life they may be considered as immune. If already porous and partly weathered in the quarry, they generally contain some carbonate of lime, and may quickly go to pieces when subjected to continuous soaking within the road. In certain regions, such as the English Lake District, the Breidden District, the mountain district of North Wales (including a certain section, now proverbial, of the Holyhead Road) it often happens that this type of altered igneous rock is the only rock which the casual labourer has skill enough to quarry, and though excellent material is available at no great distance, these, and these only, are used upon the roads. Of all road materials now in common use those that are most rapidly affected by the solvent action of water are the slags. Slags upon a road-crust can be observed, and though after every shower the characteristic aroma of their reaction with water can be smelt, it is a matter for argument whether their cheapness does not compensate for the rapidity with which they disintegrate, whether under the action of atmospheric water or under traffic. Placed beneath the crust to act as a go-between and weight-distributor from the road surface to the foundations, no slag is ever safe; and numerous are the cases known to me where road estate roads made up with slags and dressed with satisfactory coatings of the best macadam have developed crop after crop of potholes by reason of the spasmodic and irregular, sudden or gradual, disintegration of odd pieces of the slag which lie invisible and soaking continuously in the ground waters below. Turning now to the physical characteristics of water in a road, we will first take the property by which water wets the solids with which it comes in contact. The primitive concept of a liquid as a fluid which wets things is widespread. Certainly the liquid water does wet—that is, spreads as a film over the surface of most common solids; but it is not difficult to mention a score of liquids which, when sprinkled upon the surface of common solids, refuse to wet them, and which, instead, curl up into globules and remain as scattered drops upon the surface. This difference of behaviour is due to intrinsic differences between two classes of liquids, and the physical property which controls it can be numerically evaluated and tabulated, and is known under the name of "surface energy" or "surface tension." For a liquid to wet a solid there must be a degradation of energy when the two surface films (solid-liquid and liquid-air) are substituted for the one surface film (solid-air). When, on the other hand, a liquid refuses to wet a solid, there is indication that the energy value of the solid-liquid plus liquid-air surfaces would be greater than the energy value of the existing single surface film of solid-air. Glass is a solid readily wetted by water. When two glass plates are brought close together with one or more drops of water between, the two plates stick together, and the force required to drag them apart is considerable. I do not propose here to attempt the mathematical analysis of the manner in which the force which resists the parting of the plates is developed—it is discussed in Poynting and Thomson's "Properties of Matter"—but will merely say that it is determined by (1) the surface tension—i.e., the skin strength of the water; (2) the curved water-air surface, which, by reason of its surface tension, the water in the narrow space between the plates develops; and (3) the difference of pressure inside and outside the water film which the curved skin of the water renders possible and necessary. The net result is that two glass plates with a water film between require a force almost equal to the pressure of the atmosphere (about 15lb. to the square inch) to begin to separate them. We may repeat this experiment, using plates of mica instead of glass, and find that the force required to drag apart the wet mica plates is slightly greater than in the case of glass. We may pile together a whole series of damp mica plates and find that in order to break the column of the mica pile we have to employ force almost as great. In order to obtain the maximum tensile strength of piled plates it is essential that the plates should be flat-sided and in parallel position. Plates with water drops between and kept from parallelism by a match-stalk wedged in at one edge are not difficult to separate. To separate curved surfaces of glass with water-drops between requires some expenditure of energy; but the plates come apart quite easily. The experi-

* Read at the Ordinary General Meeting of the Surveyors' Institution, Monday, Nov. 24, 1913.

ments just indicated exactly reproduce the behaviour of water-bound materials in a road. The road materials which, bound with water, are most strong are those which break into pieces with flat faces, and whose constituent minerals break with a cleavage into flat-faced grains, and are readily wetted by water. Derbyshire limestone, for instance, breaks into flat-sided, tetrahedral pieces which will pack, and its powder consists of the flat-faced rhombohedra of calcite. With the right amount of water Derbyshire limestone binds magnificently. Our experiment was made with mica. Sorby, Hutchins, and others have proved that most clays consist of minute flakes of mica. Clay makes excellent bricks, which, when dried, are strong enough to stand one upon another to the full height of the kilns even before they are burnt. This strength is the strength of the water films between neighbouring mica plates, strength exactly analogous to the strength of water-bound macadam. If our experimental pile of mica plates, or our brick dried ready for the kiln, be dropped into water, the air with which the water shares the narrow places between the mica flakes is displaced, and the strength of the aggregate so diminished that the mica pile becomes "weak as water," and the brick "falls to muddy clay," like, but more muddy than, the clay from which it was made. I mention this behaviour of bricks to suggest that, by making briquettes of crushed road-stone, we can quickly obtain an excellent indication of the binding power of the road-stone.

I have tested the strength of briquettes made from road-stones which have been collected at various places, and have found that in general those rocks which have the lowest silica percentage, when briquetted, give the greatest tensile and crushing strength. With certain rocks, such as flint, I have failed to make briquettes, except with the addition of a quantity of clay-binder, and I have found that when powdered flint is added to clay the strength of the briquette is that of the clay only. I have made briquettes from fresh road-stone (Clee Hill dolerite) freshly powdered by myself, and from road scrapings taken from a water-bound road of Clee Hill stone which was well-nigh worn out, and I have found that the strength of the briquette of the road scrapings is less than one-quarter that of the freshly-crushed rock. I also tried to make briquettes of road sweepings from a tar-bound road of Clee Hill stone, and was rather astonished to find that these sweepings failed to bind. Now I recognise that spent tar and pitch belong to the class of solids which water does not wet, and from the similarity of the behaviour of powdered flint I am inclined to group raw flint with these as the one common rock which water does not wet, and which, therefore, it cannot bind. Thus far we have considered the strength of a water-bound aggregate as an absolute property which is determined by the form and composition of the particles bound. As a matter of fact, with one and the same aggregate of rock fragments mingled with different proportions of water, the strength (that is, the stress which the aggregate can accept without coming asunder) varies enormously. We all recognise that stone dust when dry has no strength, and that, when fully wetted to the state of mud, its strength similarly is nil. In the intermediate damp stages the strength is considerable and characteristic. We may conveniently express this in the form of a curve, which passes through the origin, rises very rapidly to a definite maximum, and then falls away again.

The most important characteristics of the curve are (1) the height of the maximum (i.e., the maximum strength); (2) the distance from the origin (i.e., the percentage of water) at which the maximum occurs. Powdered mica gives a high maximum very close to the origin; powdered quartz a low maximum rather far away. This curve should be determined experimentally for each road-stone used in large quantity. I should infer that rocks whose strength attains a maximum with little water are suitable for use in dry climates, while those in which the maximum is far from the origin are more suited to the damp atmosphere and frequent showers of the hills, and I think that experience on the roads confirms this inference. Quartzite and flint roads are undoubtedly at their best after rain or in damp weather, at which times water-bound limestone roads become almost impassable. I have laboured these details of the origin of the strength of water-bound



aggregates at some length, because, both from observation and from experiment, I conclude that it is the statical strength of the road-crust that determines its resistance to wear. If the passing loads distribute stresses which can be taken up by elastic deformation there is no grinding of stone on stone within the road-crust, and the work done in deformation is dissipated without altering the conformation of the road aggregate. At their best most roads are strong enough thus to carry their loads without serious internal wear; but who, in wet weather, or after a frost, has not heard the "scrunch, scrunch" of internal grinding of the stones beneath the wheels of a waggon as it passes along a road? The importance, therefore, of maintaining the quantity of water in a road at a proportion not far different from that required for the condition of maximum strength is considerable. To this proportion I shall hereafter refer as the "optimum." The subject of potholes is closely related. Potholes, I take it, are areas where, by faulty or non-homogeneous construction of the sub-crust, or by some other cause, the road-crust is maintained or remains damp for periods longer than in the areas adjoining. Hence, when, after a wetting, the average of the road in drying passes from a condition of weakness to a condition of comparative strength, the place of the pothole remains weak, and the passing traffic continues to grind stone upon stone within the crust at times when over the rest of the road this type of wear has ceased. Two years ago I came across an old road-mender on the Cambridge-London main road, at his wits' end to cure a crop of potholes in front of the entrance to a patron's estate. The subsoil at the place is coarse gravel, and the road has been mended several times without remaking. It seemed to me, therefore, that this was a case of water standing in puddles in the sub-crust. I therefore persuaded the old man to drive a bar or spike down to the gravel in the midst of each of his potholes, and passing the place this summer I rejoiced to be informed, and to see for myself, that, though the strip of road has not yet been redressed, the potholes are no more.

If I am right in my explanation of potholes it follows that a uniform and complete sub-crust drainage will entirely prevent them, and that there can be no cure for existing potholes as long as water in the sub-crust distributes itself irregularly. It also follows that there can be no surer method of securing the development of potholes than to put upon a worn-out and insufficiently scarified road a thin dressing of new macadam. Road surfaces, by the crushing of the surface stones, become fairly impervious, and each depression or rut which is covered by the new coating is a cup to hold water longer than does the rest of the road, and hence the over-rapid wear of the road-crust above it is assured. The distribution of sub-crust water-pockets and their resulting potholes is a long and complex subject, and with the comment that over-watering in the dusty season is one of the most effective methods of keeping the water-pockets supplied with water, I must pass to other matters.

Not only does water give strength to macadam, but it is water which holds together the particles of which the weaker of the road "site-rocks" (or ground foundations on which the roads are built) consist. Site-rocks from the point of view of the road-maker may be divided into three classes:—

1. Rocks which consist of compact pieces of hard material separated one from another by joints or open spaces which are wide enough to allow water to pass freely through them under gravity. These give no trouble to the road-maker, and beyond the clearing away of irregularities and the removal of soil, the sites which they afford require no preparations for the road-crust coating.

2. Rocks without open joints, in which the constituent mineral particles are fairly large and the pores between them wide enough for water to filter slowly through. Road-sites on these foundations are sufficiently well protected from the accumulation of excess of water by the provision of adequate lateral drains.

3. Rocks fine-grained and argillaceous. These, the clay rocks, consist in large part of minute flakes of mica, and owe such strength as they possess to the air-water films which bind them. They have mostly originated as mud upon the sea bottom, but as found in mines and deep cuttings, by reason of the pressure of overlying strata, they have lost much of their water and become strong. Exposed to the atmosphere for long periods, in the soil, or kept in contact with water, they "fall" to slime or incoherent mud, and while they are "falling" they develop the properties of a viscous fluid. Kept dry, they retain their strength, and some of them, if laid bare in dry weather, may increase in strength. By reason of the fineness of their grain they are well-nigh impervious to the percolation of water, and any water which comes upon them either is absorbed, to the diminution of the strength of the clay it wets, or, diverted by the impervious surface, flows away under gravity. Though the process of absorption is more or less slow, it is continuous and sure, and whenever a load is borne upon a surface of clay which is kept constantly wetted there must eventually come a collapse.

Landslips generally occur on hillsides where a clay foundation supports more massive rock, and, becoming wetted by trickling water, can withstand their load no longer. Road sites of argillaceous rock must, therefore, be guarded with special care from the action of water. Lateral drains are the best preventive against the water from outside; but the American method of shaping clay road-sites with a plough and compacting them to a camber with a steam-roller, before making up the road at all, is one which commends itself to the geologist as a means of conducting away the water which enters from above. Upon the cambered clay surface sufficient of a coarse-textured make-up layer must be provided to distribute the pressure of traffic over a wide base, and to act as an open drain to the water which sipes in through the road-crust. Many of the worst roads I know are along outcrops where pervious and impervious rocks meet, and it would be well if those whose profession it is to plan new roads could avoid such localities. Springs occur at these places, some of them with continuous flow, others rising intermittently as bournes only when the level of ground water in the porous strata comes to the surface, and if here the road be founded upon a clay rock which loses its strength by wetting, trouble must ensue. In any case, the access of ground-water to the road-crust cannot do other than impair the wearing power of the road. Turning to the important variation in the properties of water with change of temperature, we notice first the changes of vapour pressure. By reason of the changes in the maximum pressure which water vapour can sustain we have the phenomena of dew and hoar-frost, and, for the matter of that, all the phenomena which accompany and control the

humidity of the atmosphere and the precipitation of rain. These, and the influence they exert on the production and laying of surface dust, so force themselves on the notice of road-makers that they are always watched for, and, as far as possible, kept in check by the surveyor's arrangements for the disposal of excess, and for the supplementing of any deficiency of water.

Before leaving this subject I wish to draw attention to the influence which the surface form of the water has upon the temperature of saturation. This influence has been well studied in the case of raindrops, but seems to have passed unnoticed in the case of the water surfaces among the crannies of stones, where films of water are giving strength to clay or binding macadam together. The dew-point for convex surfaces is lower than that for flat ones, and, again, the dew-point for concave surfaces is correspondingly high, rising the more in proportion as the curvature (that is, the narrowness of the cranny) is increased. Who has not noticed that the large pebbles on a beach dry more quickly than does the sand? Who does not know that a sandy soil remains damp less long than a field of clay? It is all a matter of curvature of the water-surfaces. For the same reason a new-coated road, in which all the surface particles are still large, remains unaffected by dew or incipient fog long after an old and well-trafficked road has been reduced to a condition ideal for a skid. Flint, as we have already seen, behaves as a material which water does not wet, and between flint fragments the water stands in globules. Flint roads, therefore, do not become slimy under the action of dew, and despite its excellence as a "puncture mixture" there is no more efficient material than flint grit for sprinkling on wet and dirty roads to reduce the slipperiness. There is also the important question of sub-crust dew, which "droppeth" not "as the gentle rain from heaven," but rises or transpires from "the waters under the earth," whenever the outside atmospheric temperature falls below that of the rocks within. Like normal dew, when it arrives at the cooled surface it precipitates itself upon the water films, and destroys the strength of the road crust. Each autumn we see water-bound roads which have been strong all the summer going to pieces from this cause; they seem as if they will never dry. Roads dry and good before a frost are notably wet and unpleasant when the thaw comes, and this whether or not rain has fallen in the interval. Tar-painted and other roads with waterproofed surfaces are just as bad as unpainted ones with respect to this, and, indeed, the over-wetting of well-drained water-bound roads after a frost is only rendered possible by the sealing of the outward ends of the air passages by ice, a sealing which by design is already accomplished in the process of water proof painting. As to means of preventing the ravages of sub-crust dew I have nothing to suggest; but just in proportion as the source of the warm underground water is easy or difficult of access, so is the process of surface condensation immediate or delayed. Efficient sub-crust drainage is therefore important, not only for keeping up the general strength of the road crust, but also because it delays the arrival of the winter's damp, and so secures that the proportion of days when the road's optimum strength is reduced is kept as low as possible. The phenomena of frost are well recognised. Frost swells the water which is contained in narrow places, and whether the narrow places are cracks within the stones or crannies in which the water is at work binding the stones together, the water must expand, and the cracks must open. In well-drained roads, in which the water-content does not far exceed the optimum, there is generally ample room for the ice to expand between the stones. Where, however, by the choking of the sub-crust drainage, or by continued condensation of sub-crust dew, the air spaces in the road are more completely filled with water, the frozen crust has to expand, and, expanding, detaches itself from the rest of the road and rises as the cavernous blisters which we know so well. Then comes the thaw, and the bursting, disintegrating, and disarrangement work done by frost becomes evident; but much of the winter damage ascribed to frost is really the work of sub-crust dew, and can be minimised by the provision of a proper porous make-up layer in which water does not accumulate.

The discovery of Macadam was that road-stones so broken that they would pack are held together by films of water. Makers of modern roads follow Macadam in preparing road-metal aggregates by breaking stones to a more or less uniform mesh; but with the coming of motor traffic and its attendant dust they have had to find binders stronger than water, in order to hold their stones together under the increased stress of traffic. Except for raw flint the road materials known to Macadam were all substances which water wets with avidity; but in these modern days this is altered, and materials which water cannot bind have now to be reckoned with upon our roads. When carbonaceous binders are new-laid they are viscous and resilient, and yield under stress without breaking; but when with lapse of time by differential evaporation of the tempering oil they become hard, they break under the hoof or wheel, and make a mud, or, rather, an emulsion, which is devoid of strength. When looked at with a lens, spent tar or pitch, which has been scraped from a wet road and laid on blotting-paper, shows the water curled up as globules between the pitchy splinters, and without raising the temperature all my attempts to make it into briquettes have resulted in failure. Water will not bind it, and if a proportion of it be mingled with powdered road-stone, the strength of the water-bound mixture is diminished as the proportion of the powdered pitch increases. Users of cars have learnt to respect the iniquities of the churned-up mud which in certain places accumulates on tar-painted or pitch-bound roads. Mud rich in animal or vegetable refuse has similar characters. There is also another side to this question, and this involves the success or otherwise of these carbonaceous binders. Water does not wet the binder, but water does wet the stones, and if water has spread itself as a film over the surface of the stone the carbonaceous binder cannot "wet" the water, and, therefore, get into this contact with the stone. Even if by drying the water has been removed from the stone surface, it is likely to remain in the narrow cracks and capillaries, and when the carbonaceous binder spreads over and adheres to the general surface it fails to make contact with the damper spots, and its hold upon the stone is incomplete. I have watched with interest the Road Board's trials along the Eltham-Sidcup road and elsewhere, and have visited the trial strips at a good many stages of their history, and have studied the interim reports. Were I to make a special report of my own I should say that the success of each individual strip has depended, and depended only, upon the hold which the binder has maintained upon the stones. Some of the strips are most certainly worn out, but in every case it has been the binding which has ceased to hold the stones, and not the stones which have collapsed within the binder. In these trials, and, indeed, elsewhere, the patent "Tarmac" made up of furnace slag (a road-stone which, as a geologist, I could never place higher than third class) takes a high place, and I opine that the chief reason for its success is to be found in the circumstance that the slag, cooled directly from the state of fusion, can never have had any water spread or condensed upon its surface. Other successful aggregates are those in which the stones have been heated above the boiling point of water before they are mixed with the binder. By this heating the stones must of necessity be made dry, and hence, if the binder will spread upon them, a successful junction is assured. Next best are the processes by which boiling tar, pitch, or bitumen is mingled with cold stones; but the removal of water by this means is never complete, and the method, as a rule, is not quite satisfactory. And now for conclusions:—

1. The chemical action of water upon materials in roads is small as compared with the rate of mechanical wear; but care should be exercised in choosing materials which are to be buried in road foundations. Furnace slag for this purpose is not above suspicion.

2. The power of water to bind is an effect of surface tension, and for maximum strength and efficiency it is important that the proportion of water should be kept at the optimum; "as dry as it can be drained" is the first approximation to the optimum for most water-bound road materials. Potholes grow by wear of traffic at those place where by local water-pockets the proportion of water is kept above the optimum.

3. Certain site-rocks, the argillaceous or clay rocks, owe their strength to water-binding, and are subject to the same conditions of optimum water-content. The importance of cambering and draining the site is therefore equal to that of arranging the configuration of the road surface.

4. The effects of dew, more especially the dew which distils from below, are noteworthy, and in this, as in the question of the strength of the road, the importance of complete sub-crust drainage is to be emphasised.

5. Water among solids which it does not wet acts as an insulator, and in the making of tar, pitch, asphalt, or bitumen macadam should be rigorously eliminated before stones and binder are brought together. The feasibility of chemical drying by adding to the partially-dried stones a suitable proportion of quicklime or unslaked cement is suggested.

Summarily it is concluded that for each and every road aggregate there is a characteristic optimum proportion of water, which, for efficient service of road user, the road-maker cannot afford to disregard.

THE LONDON COUNTY COUNCIL.

At Tuesday's meeting of the London County Council, Mr. I. Salmon, chairman of the Establishment Committee, stated, in reply to Mr. Edward Smith, that Messrs. Wall's contract for the building of the substructure of the new County Hall had not yet been completed, but they had now vacated sections A and B in such a way that the contractors for the superstructure were now proceeding with those sections. The number of men at present employed on the ground was 510.

The Improvements Committee reported that the agreement with the Dominion Site, Limited, for an option for three years of the central portion of the crescent site between Aldwych and the Strand provided that no conveyance shall be made to any person other than the official representative of some Dominion, Colony, State, or Dependency of the British Empire without the express consent of the Council. It had now been stated, however, that it might be found desirable in connection with the execution of Lord Grey's scheme to devote part of the site to the erection of buildings not strictly for Dominion purposes, but for purposes ancillary thereto, such as buildings to be used as banks, insurance offices, and for similar commercial purposes. The committee did not think that any objection need be taken, and they proposed to vary accordingly the agreement, which is for a ninety-nine years' lease at an ultimate rent of £50,000 a year. The Council was advised to agree to these proposals, and the Committee added that there would then be every prospect of the matter being brought to a conclusion immediately.

The Improvements Committee also reported that, owing to the further development of a portion of the Duchy of Cornwall estate, an opportunity occurred of continuing the widening of Stamford-street, which was started when the first portion of the estate was remodelled last year. The average width of the street is about 50ft., and the committee considered that, having regard to the volume and importance of the traffic using it, the width should be increased to at least 65ft., by setting back the frontage on the south side of the street below Waterloo-road and Cornwall-road. At present it is only intended to widen the footway at a cost of £4,950, but it is hoped that as the remainder of the estate is developed from time to time it may be



A BRONZE TABLET ON A COTTAGE AT CHESTERFIELD.

Designed and Modelled by Commendatore Walter Crane, R.W.S., and Cast by Mr. Alexander Fisher, R.C.A.

possible to continue the widening, the cost of completing which will be about £13,000.

The Council was recommended to accept the offer of the Crown Agents for the Colonies of £23,500 for the freehold of the plot of land in Millbank which intervenes between the site which has already been acquired by them and that let to the British American Tobacco Company. The plot has an area of about 5,040 square feet, with a frontage to Millbank of about 41ft.

It was recommended by the Local Government Committee that Mr. James Lawrence, the son of the late freeholder of No. 59, Lincoln's Inn-fields, be allowed to purchase for £250 an old mantelpiece originally fitted in one of the ground-floor rooms of these premises. The mantelpiece was the work of Isaac Ware, and was designed about 1751-2, while it is probable that the design of the bear and beehive on the mantelpiece was fashioned by the sculptor Collins of that period.

The same committee reported that No. 35, St. Martin's-street, Leicester-square, is about to be demolished. According to Wilmot Harrison, Sir Isaac Newton lived there from 1720 to 1725, two years before his death at Kensington, and Dr. Burney afterwards lived in the house, where his daughter Fanny was born and wrote "Evelina," her first novel. The committee say that Sir Archibald Geikie, Dr. Flinders Petrie, and others have urged the Council to take steps to preserve Newton's house, but unfortunately it is not possible for this to be done. The building has been carefully examined and has been found to be in such a bad and even dangerous condition that any attempt to preserve it would be hopeless. A contract for the demolition of the premises to the first-floor level has been entered into, and all the interior woodwork and much that was interesting by reason of its association with Newton's residence in the house has already been removed. The committee note with great regret the disappearance of this interesting house.

In July last the Council decided to apply to the Local Government Board for relief from the obligation to provide rehousing accommodation for 1,311 persons of the working-class, to be displaced by the clearing of sites for the erection of sixteen elementary schools. In addition, it is proposed to acquire forty-eight other sites, involving the displacement of 5,233 more persons of the class named. Recommending the Council to apply to the Local Government Board for release from the re-housing obligation in these cases, the Housing of the Working-Classes Committee calls attention to the fact that the total accommodation provided, or about to be provided, by the Council for re-housing the persons of the working-class whom it has displaced, or proposes to displace, added to the accommodation which it has voluntarily provided, exceeds, to the extent of 11,689 persons, the total of the displacements effected or proposed by the Council up to the present time, but not including the displacements now reported.

The partnership hitherto subsisting between F. Gibson and J. P. Williams, under the firm of Gibson Parry Williams and Company, at the Capital and Counties Bank Chambers, Pontypridd, in the business of architects and surveyors, has been dissolved.

A BRONZE TABLET ON A COTTAGE, CHESTERFIELD.

This memorial has just been erected through the initiative of the Rev. George Ford, of Whittington Rectory, Chesterfield, who raised subscriptions from the whole locality. The work was designed and modelled by Commendatore Walter Crane and cast in bronze by Mr. Alexander Fisher, R.C.A. As an example of excellent lettering, quite apart from the interest of the inscription itself and the subject of the memorial, the illustration will be valued by our readers.

SCHOOL OF ARCHITECTURE, UNIVERSITY COLLEGE.

On Monday next the combined architectural schools of King's and University Colleges in London will commence work in the new and capacious building which has just been completed in Gower-street from the designs of Professor F. M. Simpson, F.R.I.B.A. The school has been on view to the public during this week, and in our next issue we hope to illustrate the building.

More than a hundred students can be accommodated, and there is no doubt that both for scale and equipment this is the most complete School of Architecture in the kingdom, as it is the first which has been specially erected independently for this precise purpose. In saying this we are in no way detracting from the Architectural Schools connected with the Royal Architectural Museum at Westminster, where advantages peculiar to that institution as a whole are [illegible] owing to

its close incorporation with the Architectural Association and the collection of casts and examples housed in Tufton street. At Gower street, however, there are three large and particularly well-lighted studios, fitted with permanent working tables for architects, to be used by ordinary and advanced classes, and above, at the top of the building, a capital sky-lit studio provides space for drawing from the cast or models. The lecture-theatre is on the ground floor. The entrance is from the quadrangle of the college, and the new buildings are en suite with the Slade School, but also isolated from it. There are private rooms for the professors and lecturers, while on the first floor are the library and museum for building examples, models, and appliances. These are being amplified and brought up to date.

Modelling studios are to be built with funds furnished by the benefactor who provided this architectural school. The cloak-rooms and lavatories are in the basement. The staircase is very nicely designed, and the fireplaces are worked out in a tasteful way, being also quite simple and unpretentious, but, like the rest of the work, quite suitable for such a building, which is primarily a workshop for artists. The exterior, all in stone, harmonises with the other Classical buildings of the college, as well as with the part south-west of the quad built some time since in Gower-street.

HOUSE-DRAINAGE LAW.

By W. Addington Willis, LL.B.

The second Chadwick lecture was given at the Institution of Civil Engineers, Great George-street, Westminster, S.W., on Monday last, Sir Henry Trueman Wood, M.A., Chadwick trustee, in the chair.

RIGHTS AND RESPONSIBILITIES OF CITIZENS AND COUNCILS.

The lecture dealt with the rights and responsibilities of citizens and councils. It commenced by showing the manner in which obligations in respect of drainage were distributed, the power of councils to make by-laws, and the power of the London County Council to regulate the building of houses in low-lying lands.

The lecturer then started with a bare plot of land, upon which he assumed a citizen was seeking to build. He showed the statutory requirements as to drainage, the obligation of the individual to deposit plans, and the duties of the Council in considering them. In this connection it was shown that a provincial authority, passing plans for the joint drainage of several houses belonging to the same owner, could not adequately protect themselves by an agreement on the part of the builder that he and his assignees would for all time repair the joint pipes as if they were drains, and not sewers. Such an agreement was not enforceable against the assignees, even if they bought with notice of it.

The manner in which the work was to be carried out after the plans had been approved was next discussed, the by-laws being divided into those directed against the evil of damp and those regulating the construction of the drains themselves. It was shown that the authority could not compel or authorise the connection of drains in any way which involved carrying them through a stranger's land without his consent, even though the distance traversed was but a few inches. In the event of no suitable sewer being available within the statutory radius, cesspools need be made, but they must conform to all the by-laws relating to them, and a by-law which required the cesspool to be a certain distance from the house was not unreasonable, because in a particular case it was impossible to comply with it. The powers of a council to require the adequate drainage of existing houses cannot be exercised to compel an alteration of the drains rendered necessary by the introduction of, or change in, the system of sewerage, or by the discontinuance of a sewer. This was succeeded by a consideration of the rights of the citizen to connect his drains with the sewers of his district, and the obligations of the councils to provide such sewers. The maintenance of drains was the next part of the lecture, showing the powers which councils have to require defective drains to be remedied, and nuisances in them to be suppressed. After short references to the powers and duties of councils in respect of sewers, the lecture concluded with a description of the manner in which the Metropolitan Board of Works and their successors, the London County Council, have, by means of intercepting sewers, prevented the sewage of London from flowing into the Thames within the Metropolitan area. The whole lecture was supplemented by an exhibition of diagrams, plans, and pictures.

The third lecture will be given in the same place at 8.15 on Monday, December 1. The chair will be taken by Sir Wm. Collins, M.D., M.S., B.Sc., etc., and admission is free. The subject is "The Combined Drainage Problem" as it exists both in the provinces and in the Metropolis.

OBITUARY.

Sir William Henry Bailey, the well-known engineer, and one of the originators of the Manchester Ship Canal, died on Saturday morning at the Savoy Hotel, Strand, aged seventy-five. He was the eldest son of the late Mr. John Bailey, of Pendleton, was born at Salford in 1838, and was educated at the Manchester Grammar School. His father in early life was manager of the experimental department of the Atlas works of Messrs. Sharpe and Roberts, and had much to do with the mechanical inventions of Richard Roberts. He was the founder of the Salford Ironworks, which Sir William Bailey had greatly developed. By the time he was twenty-one William Bailey had brought out several successful patents. He was the inventor and patentee of a great variety of pyrometers, testers, and pumps, besides other mechanical apparatus used in blast furnaces, mines, torpedo-boats, and waterworks. He designed the testing apparatus for the concrete and cement used in the Eddystone Lighthouse, and since employed for other public works, and also recording instruments for irrigation and drainage works in India. He was one of the original promoters of the Manchester Ship Canal, and was knighted in 1894 by Queen Victoria on board the first ship which passed through the Canal, being then Mayor of Salford. Sir William Bailey was Past-President of the Library Association of Great Britain, a life Governor of Rylands Library, President of the Manchester Shakespeare Society, and Vice-President of the Manchester Literary Club. He was also President of the Manchester Association of Engineers, and a member of the Iron and Steel Institute and the Society of Mechanical Engineers. The funeral took place at Brooklands Cemetery, near Manchester, on Wednesday.

We much regret to have to announce the death of Mr. Frederick Thomas Cutbill, which took place on the 22nd inst., at his residence at Beckenham, at the age of 78. Mr. Cutbill had been a director of Claridge's Patent Asphalte Co., Ltd., for thirty-nine years, ever since its incorporation as a limited company.

Mr. Aaron William Lee, surveyor of buildings to the corporation of Birmingham, was killed in a taxicab accident in Birmingham on Friday night. He was crossing Paradise-street from Ratcliffe-place, when a taxicab knocked him down. He was at once conveyed to the General Hospital, suffering from severe internal injuries, and died soon after admittance. At the inquest, held on Monday, a verdict of "Accidental death" was returned. Mr. Lee was very well known in the city, with which he had been connected in an official capacity for many years. He was responsible for designing many of the new district police-stations — notably the Digbeth office. The deceased leaves a widow, but no family.

The Independent and Primitive Methodist chapel at Glemsford, near Sudbury, was re-opened last week, after enlargement and alterations carried out by Messrs. Graham and Brockwell of Cavendish.

COMPETITIONS.

BATH.—The Bath Education Committee finally settled the conditions of competition for the city Second Day School. A special sub-committee reported that they had had an interview with Mr. H. T. Hare, F.R.I.B.A., the assessor for the new schools. It was resolved that in the instructions to architects relating to the competition a clause should be inserted requesting that competitors, if they should consider that the whole of the work could not be completed for the sum available, should indicate on the plans what portions of the building could be erected at the price. It was further resolved, on Mr. Hare's recommendation, that no premium be allotted to the architect whose plans were selected, but that the premium of 50 guineas be awarded to the competitor whose plans were placed second on the list.

OSWALDTWISTLE.—The assessor appointed by the Oswaldtwistle Urban District Council to adjudicate on the plans submitted in competition for the proposed free library has made the awards as follows:—First premium of £30, Mr. F. G. Farmer, Stalybridge and Liverpool; and second premium of £20, Mr. Leonard G. Hannaford, Rock Ferry, Cheshire.

REIGATE.—The new infirmary, for which twelve designs have been received in the pending limited competition at Reigate will, it seems, be adjudicated upon by the guardians themselves after the assessor, nominated by the Inspector of the Local Government Board, has reported. This gentleman, who is described as an "independent architect" in the works committee's recommendation, has been instructed not to point out which is the best plan in his opinion, but to report upon the advantages and disadvantages of every several plan. The guardians are under the impression that, "having obtained that information, it would be quite easy for the committee to say which plan would suit the purpose of the board." That all depends, and we doubt the wisdom of such a reservation of the award by laymen. The assessor must either give a decided lead as to his preferences, or, regardless of his personal choice, leave the guardians in a quandary, with all the pros and cons. fairly stated. The assessor's name is not divulged.

TORONTO.—With reference to the competition of plans for a Masonic Temple at Toronto, the Imperial Trade Correspondent at that city (Mr. F. W. Field) has now forwarded a circular containing answers to various points raised by competitors. Designs will be received, up to January 20, 1914, by Mr. W. H. Best, 181, Avenue-road, Toronto, from whom further particulars may be obtained. The first prize will be the commission for designing and supervising the erection of the building. Three other prizes of 750dol., 500dol., and 250dol. respectively, will be awarded. The estimated cost of the building is to be about 250,000dol. (about £51,400).

In the case of David John Vaughan, residing at Dromore, and carrying on business at Commercial-buildings, Tredegar, builder and contractor, the order of discharge has been suspended for three years.

In connection with the widening of Fleet-street and Leadenhall-street, the City Corporation is to expend a further £2,575 on acquiring premises in Fleet-street, and about £16,000 on various interests in Leadenhall-street.

Mr. W. R. Lethaby delivered a lecture on "The Architecture of Westminster" to the members of the London branch of the Historical Association at University College on Thursday evening in last week. Henry III. concentrated his ill-gotten money on the Abbey, which was rebuilt at enormous expense. It was hardly enough realised that the Abbey was history itself. Why could they not build such great architecture now as that which characterised the Abbey? They could, for they had quite as good men as then; but the mind was a little lacking just at present. Great architecture required an enormous volume of common energy thrown into it for a long space of time. If they could have that common endeavour and appreciation they should certainly have a noble architecture again.

Currente Calamo.

The prevailing wish in many letters we have received this week, thanking us for the space we have given during the last two weeks to the discussion of the new proposals of the Council of the R.I.B.A. with regard to Registration, and which are to be considered at the meeting on Monday next, is that free and full discussion thereof will be encouraged. We hope so. Nothing could be more disastrous than any such abrupt termination thereof as occurred at the meeting of January 8, 1912. We are glad the Associates have taken early action. They held a meeting last night at the Westminster Palace Hotel, at which a proposition was submitted to form a representative committee to watch and protect their interests. The meeting ended too late for us to report it, owing to the early hour at which we have to publish on Friday mornings, but we have little doubt that the proposition was agreed to. Possibly the Licentiates will adopt a similar course. But whatever action of the kind is taken, either within the Institute or elsewhere, we trust, above all things, that the supreme interests of the whole profession will be the first consideration of all, and that defeat may await any ill-judged attempts of those who foolishly imperil them by unwise jealousy or by ignoble mischief.

In this connection it is worth noting that, as will be seen from the letter of the Secretary of the Society of Architects in another column, it has not taken long to pass a Registration Act in New Zealand. The Bill was introduced into the House there just a year ago, and read a first time. It passed the second reading last July, was referred to a Special Committee on Law, and has now become law. The architects of New Zealand knew what they wanted; there was no cleavage in their Institute; nor, apparently, any wreckers about. It is probably true that, even under the most favourable circumstances, businesslike promptitude of this sort is hardly to be expected from our legislators at St. Stephen's. But we are convinced that it only needs a little common sense, energy, and the unity of the profession here at home to pass a reasonable Registration Bill, all the assurances of faint-hearted doubters to the contrary notwithstanding.

The regulations just issued for official use as to the scope, details, and administration of Examinations in Art by the Board of Education for 1914 are substantially identical with those last published, so we presume the reforms advocated by Mr. Reginald Blomfield are considered to apply primarily to the Royal College of Art, or do not concern national producers of teachers of art throughout the country. Perhaps sufficient time has not elapsed for the consideration of the changes suggested, or possibly the authorities have decided that no material alterations are needed. The last conclusion seems warranted by the fact that the only difference contemplated in the present publication is confined to the proviso that after 1915 no account will be taken of successes obtained under the former scheme of art examinations. At present the "candidates must take the examination as a whole, and marked success in one test will be allowed to compensate for comparative want of success in another. The fact that a candidate has passed under the former scheme of art examinations in any section of a subject covered by the syllabus will not excuse him from entering for all the tests comprised in such examination; but the success then obtained will, if it be to his advantage, be specially taken into account, and the Board will not credit any candidate with a less measure of achievement in any section of a subject of the new examination covered by a previous success than that which he had reached at the time of the earlier examination." If this is the extent to which reform is intended it is certainly infinitesimal. Those not intimately conversant with regulation detail will not find it easy to discover what this change actually means.

The syllabus now printed is not modified in any important particular, and the subjects remain rightly enough, so far as that goes, in the following order: Drawings from the Antique, Drawing from Life, Drawing from Memory, Anatomy, Perspective, and Architectural Drawing. The syllabus for "Painting" is, of course, amplified into various sections, and so with examinations in "Modelling," as well as in "Pictorial Design." Then follows a list of crafts to be dealt with under the syllabus of examination in "Industrial Design"; but in this most important branch of the art of teaching no changes are indicated, neither are any developments suggested. The one subject which appears to be altered is Architectural Drawing, and we confess to some surprise at the qualification thus introduced, inasmuch as it provides that the "candidates will not be required to show any knowledge of what is ordinarily called Building Construction or of Architectural Design." We presume that when a candidate depicts a human being or any other form of animal life, he is expected so to represent his subject as to display some knowledge "of what is ordinarily called Anatomy." It seems, however, that those who are to teach architectural drawing under the Board of Education need not know much about the anatomy of a building! Surely this is fundamentally wrong, and even absurd. The requirements for examination here set down are: (A) To draw from memory to a given scale one of the Classic recognised Orders, architrave, frieze, and cornice, with a column to a given height; and (B) to set out to scale of 8ft. to the inch the plan, sections, and elevations of a building to given particulars, with numbers and positions of the openings, thickness of walls, and block sections of the roof, as supplied. Design and construction are thus eliminated; but without a true expression of what obviously constitutes in every respect the art of architecture, is it not manifest that all such architectural drawings must be devoid of any real value, because they cannot be even pictorially reliable? A teacher of the art surely has to inculcate true principles to elementary students, and should be able to guide his pupils in the initials of his art if it is to be of any true ultimate use. This mistaken system of dealing with such a practical subject costs a lot of money. Would it not be far better to give up these amateurish methods entirely, and leave the teaching of architecture and its representation to really qualified masters? Such education as this is wastes the time of pupils, and, indeed, often it sets them going on wrong lines at the crucial period of their lives, besides encouraging not a few to follow an art for which they possess no natural capacity.

To a representative gathering of artists, architects, and others at the R.I.B.A. rooms on Monday, Mr. Wynford Dewhurst, the originator of the idea of the establishment of a Ministry of Fine Art, which we first commented on at some length in our issue of July 4 last, explained fully the details of his scheme. Mr. David Murray, R.A., presided, and among others present were Sir G. Frampton, R.A.; Mr. Calton, R.A.; Sir Frank Short, R.A.; Mr. Henry T. Hare, F.R.I.B.A.; Mr. E. Guy Dawber, F.R.I.B.A.; Professor Lanteri, Mr. C. Stanley Peach, F.R.I.B.A.; and Mr. Reynolds Stephens, the chairman of the Imperial Arts League. After some two hours' discussion a small sub-committee was formed to elaborate a scheme suitable and likely to meet the exigencies of Parliamentary conditions, for further consideration by a full committee, to be elected later on. The first meeting of the sub-committee will be held on December 8. We wish the earliest and most complete success to Mr. Wynford Dewhurst's project. For years we have pointed out the evils it is destined to remedy, and which it alone can grapple with. We trust that the unanimous support Mr. Wynford Dewhurst has received from all our contemporaries will be seconded by early and judicious action of the united representatives of every phase of art, and by the adhesion of every man and woman in the realm concerned. One thing alone can endanger early success—the cleavage that splits movements of the kind into impotency, usually the result of sectional jealousies, or the attempts of interested adherents to make personal capital thereout.

We hope our first article this week will help to second the effort the R.I.B.A. is very properly making to gather together some information with regard to belfries. The Science Committee desires to investigate—(1) The construction of belfries, and (2) the effect of vibration on buildings. In view of the increasing use of heavy road traffic and machinery, and their injurious effect on buildings, the committee are desirous of collecting useful data and information, with a view to the issue of a guiding memorandum on the subject. Members and Licentiates of the Royal Institute are invited to forward any particulars or statistics—(a) As to the measured swing of brick, stone, and timber belfries, tall chimneys, or similar erections; (b) as to the amount and extent of vibration in buildings; (c) as to any precautions taken to deaden or minimise the effect of such vibrations or oscillations. Particulars, drawings, or statistics would be greatly appreciated, and should be forwarded as early as possible to the Hon. Secretary of the Science Committee, R.I.B.A., 9, Conduit-street, London, W.

Mr. John Burns always likes his little joke, and we confess we rather enjoy his latest at the Arterial Roads Conference on Tuesday. We have always doubted the Road Board from its inception, and our experience of ad hoc authorities has never been of a kind to stimulate a wish for more. We agree heartily with Sir Aston Webb that another central authority was, and is, unnecessary. Sir George Gibb, the Road Board chairman, who was present, of course pleaded poverty, as usual! He is past cure, we fear. There is seldom any hope of betterment for that phase of dementia to which the aged are liable, and which afflicts the richest with the dread of impecuniosity. If there is any chance of recovery for Sir George, we think Mr. Burns has discovered it, and that "a happy settlement would be for Sir George Gibb and

Colonel Hellard to occupy bay windows in the office of the Local Government Board. No one would be more happy than he to welcome such a result. If that did not happen, something else like it must."

One of the most useful of its kind we have ever received is the excellent and comprehensive Report to the Education Committee of the County of Southampton of their architect, Mr. A. L. Roberts, or, rather, to a special sub-committee appointed by that body to consider the possibility of reducing the cost of school buildings without impairing their efficiency. We congratulate the committee on the response. Of its value as regards the sphere of their own control they are the best judges; but they have certainly evoked a contribution to the general literature of school building, which, published in the ordinary way, takes first rank. We advise its perusal by all Mr. Roberts's colleagues throughout the country who have the opportunity. His general observations on the cost of labour, on estimates, new materials, etc., are most valuable and exhaustive. The general conclusions arrived at are that large schools cost less per head to build than small schools, and that the respective average costs have been £13 3s. 9d. and £14 0s. 11d. per head. Further, considering large and small schools together, it has been shown that if and when the future extensions which were planned to many are carried out, the average cost will drop to £12 12s. per head, all things being equal. Mr. Roberts doubts whether any saving would be made by substituting the verandah for the corridor plan; but cross-ventilation by means of windows, which is the main point claimed for the former plan, cannot be so well arranged in the latter. It is claimed for the verandah school that adequate ventilation can be secured without the introduction of extractors and other ventilating devices. It must, however, be borne in mind that the effectiveness of window ventilation depends entirely upon the teachers, who can open and close the windows at will, and stringent regulations are no guarantee that ventilation will always be obtained by them. As to the heating of a verandah school, the cost is probably about twice that of a corridor school, but it has not been possible to obtain definite figures to prove this. The increase in the cost of building since 1903 has been carefully traced, and shown to be between 15 and 20 per cent.

One wonders whether it is with their tongues in their cheeks that some of our glib politicians are promising cottages for the million, and State aid to build them, seeing that the State, where it has full powers, and where it might legitimately help to house working men homeless through no fault of their own, always shirks its duty shamelessly. The Admiralty is one of the worst of sinners in this respect. At a meeting of the Sevenoaks Rural Council last week a letter was read from the Admiralty with reference to the pressing need for housing accommodation for the workmen employed at the powder magazines and other Government works within the council's district. The Admiralty said, in reply to a suggestion which had been made by the council that their lordships should themselves erect cottages, that only in very special circumstances could they undertake the provision of housing accommodation for workmen employed in their establishments. So far as they could see, 400 men would be regularly employed at the Naval Ordnance Depots, and the Admiralty hoped that if the council could not see their way to adopt some scheme of providing cottages they would do their best to stimulate local enterprise. It was stated that the uncertainty about the continued occupation of the cottages was an insuperable obstacle to local enterprise, and it was mentioned that some years ago the Government started to build a railway within the council's district, but suddenly abandoned it, after spending £80,000 upon the project. Some of our readers will remember this well, and other flagrant instances in different parts of the country of the fashion in which Government departments "stimulate" local enterprise!

Here is another instance of apparently quite forgotten past land inquiry. A Royal Commission was appointed at the instance of Sir George Trevelyan, in 1892, to inquire what land in the counties of Argyll, Inverness, Ross and Cromarty, Sutherland, Caithness, and Orkney and Shetland, then used for sporting purposes, or for grazing, was capable of being cultivated to profit, or otherwise advantageously occupied by crofters or other small tenants. The final report was presented in 1895. The Royal Commissioners scheduled various lands which, in their opinion, might be brought under some form of cultivation, and these scheduled lands were shown on coloured maps which were issued along with the Report. In Caithness-shire no fewer than 6,100 out of 7,000 acres belonging to the Dorrery estate were coloured brown on the map, signifying that they were deer forests and sheep grazings suitable for farms. The point is that this land was then, and still is, the property of his Majesty's Commissioners of Woods and Forests, and the Government are advertising Dorrery, through their agents, as a "sporting estate." Properly grasped by the working men of Wick and South Lanark, that, no doubt, will send more "land bursters" to the House of Commons, to help tickle the ears of the groundlings!

Mr. J. Emerson, road foreman in the employ of the Stockton Rural District Council, has been appointed surveyor to the Whitby Rural District Council.

In the case of the application made on behalf of Alexander Firie Springcroft-avenue, Fortis Green-road, East Finchley, builder, the order of discharge has been suspended for three years.

A new church, dedicated to St. Luke, and estimated to cost £4,200, is being built in Corporation-road, Darlington. The contractors are Messrs. R. T. Smith and Son, of that town.

A new town-hall is about to be built at Simla, from plans by Mr. John Begg, consulting architect to the Government of India. It will replace one erected many years ago, at an expenditure of £33,000, which has of late necessitated an average outlay of £1,000 per annum in repairs. The new town-hall will cost £40,000, will be four stories in height, and will occupy an area of 200ft. by 86ft.

The town-planning committee of the Rochdale corporation have recommended that authority to apply to the Local Government Board for authority to lay out a district for town-planning on the Edenfield side of the town. The area embraces 2,000 acres. Of this 1,500 acres are in the Rochdale borough, 200 acres in the Norden district, and 300 acres in the Bury Rural District Council area.

The annual convention of the Texas State Association of Architects, held in Dallas, was closed on October 23. At the annual election of officers, H. A. Overbeck, of Dallas, was elected president; O. J. Loraine (Houston), C. D. Hill (Dallas), H. C. Frost (El Paso), M. J. Dielman (San Antonio), E. Stanley Field (Fort Worth), and Roy E. Lane (Waco) as the six vice-presidents; and D. F. Coburn (Dallas) secretary-treasurer.

Engineering Notes.

BEVERLEY. "Hull Bridge," one of the picturesque landmarks of East Yorkshire, has disappeared, and the new swing-bridge of steel, erected by the East Riding County Council, at a cost of £11,000, has been declared open by Lady Nunburnholme. The new bridge has two fixed spans of 15ft. each, and a central-opening span of 30ft., the latter being rolled back towards the Beverley side. The reconstruction has been accomplished under the resident engineer, Mr. J. Martin Clark, representing the firm of Sir John Wolff Barry, Lyster, and Partners. Messrs. Braithwaite and Kirk, of West Bromwich, were the contractors.

CHIPS.

New premises on the site of the old building are being erected for the London City and Midland Bank in Oxford-street, W., from designs by Mr. T. B. Whinney, F.R.I.B.A., Old Jewry, E.C.

Mr. Henry Young, for 50 years with the firm of Messrs. Thomas Rider and Son, builders, Union-street, Southwark, S.E., died on Thursday in last week, at 20, Rosebery-road, Clapham Park, S.W., in his 85th year.

The Parish Church of Kempley was reopened on Friday by the Lord Bishop of Gloucester, after restoration. Kempley is situated near the Herefordshire border, and the church is an edifice of stone in the Norman style, consisting of chancel, nave, south porch, and a western tower.

The corporation of Nottingham has decided to purchase properties in Exchange-row and the Poultry for the widening of these main thoroughfares. It is possible that the corporation may in the near future erect an adequate town-hall on the Exchange site, a large portion of which now belongs to the city.

An appeal for £1,200 for the restoation of the interesting Norman church of Leonard Stanley, Gloucestershire, has been issued. The chancel was restored under the direction of the late Mr. G. F. Bodley, R.A., by the late lord of the manor, Mr. Dennison Jones, and it is now proposed to restore the transepts and nave.

As a result of the protests of the Richmond Town Council at the threatened disfigurement of the riverside walk to Kew by the erection of a concrete wall along the Old Deer Park boundary, the Office of Works have officially informed the council that they have abandoned the proposal, "though they think the effect of the suggested wall upon the amenities of the district has been much misrepresented."

The Staffordshire Education Committee accepted on Saturday the offer of a site for the proposed farm institute for the county. The land, which is freehold, consists of 148½ acres, and the purchase price is £6,250. The site is on the main road from Stafford to Stone, and is near the North Staffordshire Railway. Two-thirds of the land is arable, and one-third pasture. The Board of Agriculture are making a grant of 75 per cent. towards the cost of buildings and equipment, and also a liberal allowance for annual upkeep.

On Saturday, the Bishop of Lichfield dedicated the new school which has recently been erected by the Dean and Chapter for the Cathedral choristers at Lichfield, on the site of the old school, near the precincts of The Close. The building, which is of simple design, comprises a schoolroom on the ground floor, 32ft. by 16ft.; an entrance porch, cloak, lavatory, and store-rooms. In the upper story are a recreation-room and a book store. The building, which will accommodate 40 choristers, has been erected by Messrs. Thorneloe and Sons, of Lichfield, to plans prepared by Mr. F. T. Beech, of Wolverhampton, diocesan surveyor.

Mr. F. S. Baker, of Trades' Bank-buildings, Toronto, in an open letter to the mayor, appeals for an amendment of the Ontario Architects Act to such a degree that it will insure the efficient registration of the architectural profession. This is apropos of the appointment of a new city architect—an unnecessary official, Mr. Baker maintains, if the architectural profession were properly qualified and answerable to the public for the safety of their structures. At present, Mr. Baker says, the city architect's staff, which is a very large one, is employed in checking plans and specifications prepared by architects who are presumably qualified. This he considers an expensive and unnecessary duplication.

Building Intelligence.

BOURNEMOUTH. The foundation-stone of a new church in the Alumhurst road, in the Westbourne district, was laid on the 25th inst. It is to be faced with Purbeck stone and will be covered with green slates. Its lofty spire, when completed, will be a conspicuous object both from land and sea, standing as it will on the West Cliff. The contract has been taken at £6,340, by Messrs. G. and W. Hayward, of Bournemouth, and the plans have been prepared by Mr. E. H. Lingen Barker, of 4, Moscow-court, London.

CHIRK.—The Primitive Methodist Church Hall, which has been erected at Chirk, is the first portion of a scheme which, when completed, will include church, school, and manse. The hall, the foundation-stone of which was laid on May 26 by Mr. E. T. John, M.P., was opened on the 20th inst., and will serve for the time being as a school chapel. The style is Gothic, and has been carried out in Ruabon facings, with sand-faced terracotta dressings, the internal woodwork being in pitch-pine and mahogany. The cost of the building is upwards of £1,000, and has been carried out from the design, and under the superintendence of, Mr. Geo. M. Tune, architect, Trevor, Llangollen, the general contractor being Mr. D. W. Ellis, builder, Gobowen.

DEVONPORT. — The new church of St. Clement at Warleigh-avenue, Keyham Barton, Devonport, was opened by the Bishop of Exeter on Saturday. The architect was Mr. C. Cheverton, and the builder Mr. Stanbury, Devonport. There will be seating accommodation in the full church, which is a plain edifice of brick with sparingly-used stone dressings, for about 400 persons. Provision is made, however, whereby a portion of the church can be screened off, and, this being done, the seating accommodation will be 120. Two schools are attached—one for infants, on the ground floor, and the other for senior children, on the second floor. All the interior fittings are of oak. The total cost, including the site, has been over £4,000.

DUBLIN. A committee of the whole house of the City Council of Dublin was held this week to consider the plans and specifications for the new Municipal Offices to be erected on a site in Lord Edward-street and Castle-street. It will be recollected that as far back as April last Mr. Albert E. Murray, president of the Royal Institute of Architects of Ireland, selected from the nineteen designs submitted by architects practising in Ireland the one submitted by Messrs. McDonnell and Reid, of 20, Ely-place, Dublin. Now, after seven and a half months' delay, this selection has been confirmed, and Messrs. McDonnell and Reid have been appointed architects for the building, the cost of which is estimated at £55,000. As we explained in our review of the competitive designs, in our issue of April 11, p. 499, the chief problem before the architects was whether to retain or demolish Newcomen's Bank, in which the city architect's and rating departments are now housed—a lofty Portland-stone building erected by Thomas Irving in 1781. In the design now adopted the bank building is left untouched, the ground floor being utilised as a labour bureau. The new premises, to the west of this block, will be treated in an Ionic manner, with a clock-tower 128ft. high.

LONDON.—The Mary Curzon Hostel for Women, erected from the designs of Messrs. Lovegrove and Papworth, 374-8, Old-street, E.C., as a model common lodging-house for women, by the Duchess of Marlborough and Earl Curzon of Kedleston, in memory of the late Lady Curzon, was opened by Queen Alexandra on Saturday last. The building is in King's Cross-road, close to King's Cross, and consists of three upper floors of bedrooms and cubicles, apartments for the matron, storerooms, and linen cupboards. The entrance-floor, raised slightly above pavement level, contains the office, the large general kitchen and dining-room, the general scullery, the "day-room," which serves as a sitting-room, and lavatories and water closets. In the basement are bathrooms, steel-locker room, laundry, changing, and drying rooms, the heating chamber, and the bundle room. A feature of the lavatory accommodation is the provision of a number of enclosed "cabinets," containing a foot bath and lavatory basin. The building is constructed of fire-resisting materials throughout, all the floors are covered with jointless flooring, and the walls up to the first-floor level are lined with glazed bricks or tiles, above with plaster painted with a dull stippled finish. The general contractors were Messrs. John Grover and Son, Wilton Works, New North-road. The sanitary goods were supplied by Messrs. Nicholls and Clarke.

MAIDSTONE.—The members of the Kent County Council met for the first time in the new council chamber at Maidstone on Wednesday in last week. The County Offices are now practically completed with the exception of fitting up the analyst's laboratory. The whole of the fittings in the council chamber and throughout the building have been carried out by the general contractors, Messrs. Wallis and Sons, Ltd., of Maidstone, from the designs and under the supervision of Mr. Ruck, the county architect. The Portland stone used was specially selected at the quarries and worked by the contractors at their own yard. The corridor floors are in Terrazzo marble mosaic, and the entrance halls and corridors to council chamber in marble mosaic, the whole being carried out by Messrs. Carter and Co., of London. Messrs. Engert and Rolfe laid the asphalte roofs and floors. Mr. C. H. Mullis has acted as clerk of works, and Mr. C. Standing as general foreman for the contractors.

CHIPS.

The projecting block of plain red brick buildings on the South side of Piccadilly, between the Green Park and St. James's-street, is about to be demolished by the London County Council as part of the widening operations in that thoroughfare.

At the annual meeting of the San Francisco Chapter of the American Institute of Architects the following officers were elected for the ensuing year: President W. B. Faville; vice-president, E. A. Mathews; secretary-treasurer, Sylvain Schnaittacher; trustees, Henry A. Schulze and George B. McDougall.

Mr. J. H. Marshall, civil engineer, Fochabers, has been appointed chief architect to the Duke of Richmond and Gordon, in succession to the late Mr. Thomson. It is intended to discontinue the Keith office, and to manage the whole of the architectural work from the Fochabers office, under Mr. Marshall, with a staff of assistants.

Acting upon a representation by Dr. Cooper Pattin, their medical officer of health, the city council of Norwich are about to deal with Ravner's-yard, near St. Martin's Church, as an unhealthy area. The district has an area of 6,900 square yards, and the estimated net cost of clearing it and providing new working-class dwellings is £9,000.

The London County Council have agreed to contribute one-half, not exceeding £77,500, of the net cost of the widening of St. Martin's-le-Grand and Gresham-street and of Cheapside, at Sweeting's Corner, which the Corporation are about to undertake. The improvement is consequent upon the demolition of the old General Post Office, and the width of the road when it has been carried out will be 80ft.

The Oxford University Press is about to publish an important work in two quarto volumes by Mr. Francis Bond, author of "Gothic Architecture in England," under the title of "An Introduction to English Church Architecture." The work deals in particular with the history of the parish church in villages and towns, and contains 1,400 illustrations, mostly to large scale.

The controversy over the proposed extension of the Massachusetts State House, at Boston, a building designed by Bulfinch, has at last reached a settlement. The State House Commission has voted to employ Mr. Robert D. Andrews, Mr. R. Clipstone Sturgis, and Mr. William Chapman, as joint architects of the new lateral wings. The plans prepared by the architects have been approved by the Boston Art Commission and the Boston Society of Architects.

Correspondence.

CHARTERED ARCHITECTS OR STATUTORY REGISTRATION.

To the Editor of the BUILDING NEWS

SIR,—For nearly thirty years the Society of Architects have promulgated and pioneered a movement for the Statutory Registration of Architects, and have from time to time promoted a Bill in Parliament, on lines which provide for the protection of all present vested interests, for the attainment of that object. For the past two years or so the Society have temporarily suspended their activities in this direction, for reasons which I think have been generally appreciated; but in view of recent developments, they have decided to take immediate further action.

The Society's draft Registration Bill, which has been in the meantime revised and brought up to date, has been placed in the hands of an eminent counsel for completion, and all arrangements made for again introducing the Bill into Parliament at the first opportunity. The Society invite the support of all architects who favour the principle of Statutory Registration. I am, etc.

G. E. BOND,
Chairman of the Registration Committee of the Society of Architects.

28, Bedford-square, London, W.C.

REGISTRATION OF ARCHITECTS IN NEW ZEALAND.

SIR,—With further reference to my letter of September 1, 1913, last Monday morning I received a cable from the New Zealand Institute of Architects to the effect that the Registration Bill has passed.

The brief history of its Parliamentary progress is that just a year ago it was introduced into the House by the Honourable Mr. Herdman, the Attorney-General, and was read a first time. It passed the second reading in July, and was referred to a Special Committee of the House, and it has now become law.—I am, etc.,

C. MCARTHUR BUTLER, Secretary.

The Society of Architects, 28 Bedford-square, London, W.C.

CHEAP COTTAGES AND FLAT ROOFS.

SIR,—In your issue of the 31st ult. Mr. Thomas Potter remarks that the Government Departmental Committee for the investigation of the building of cheap cottages say "a layer of bituminous material between the floor-boards and concrete is necessary." I quite agree with Mr. Potter, that unless the subsoil is damp, this is not necessary. From what I remember of the report, I think it was more of a suggetion than an actual rule which they laid down.

Mr. Potter says that flat roofs are liable to crack, owing to the change of temperature, unless there is some means of controlling the change of temperature. In my book I recommend joints to be laid in large cement roofs, the work to be done in sections, the joints to be filled with hot bitumen; but the Swansea Corporation had a range of Pudloed flat roofs done over five years ago, and these have not leaked up to the present time, and there is no expansion joint. Five years is a fairly long test.

I can point to many dozens of flat roofs which have been done with Pudloed cement, all of which are perfectly watertight. There is another advantage which Pudloed cement has in varying temperatures, and that is the repelling action against frost. I have sent out to Winnipeg forty-four tons this year for the new reservoir there, and Professor Brydone-Jack, of the Manitoba University, was chosen to test my powder, along with about a dozen other methods of waterproofing reservoirs, and he came to the conclusion that Pudlo was best, because it stood every climatic condition which occurs in Canada better than any other method. The first indication I had was the order that was cabled to me for the material, so this is a very unbiassed opinion.

Some of my customers have tried Pudloed cement for pointing in the winter, during heavy frosts, and speak well of it. They say that whereas non-Pudloed cement has dropped out of the joints, the Pudloed cement has always remained intact. If I had reason to fear the cracking of a roof, I should advise coke-breeze or shingle on the top of the cement flat. Coke-breeze is very light, and a very coarse mixture of breeze, cement, and sand would make a porous but binding concrete and a very good floor. I have known this to be done in hot climates with very good results.

Mr. Potter was the first man in England to seriously adopt concrete as a constructional material. That was before I was born, so that he is now an old man. Since the publication of his well-known book on "Concrete" he has been termed "the father of concrete."—I am, etc.,

J. H. KERNER-GREENWOOD.

ARCHITECTS AND BUILDERS AS CO-ASSESSORS.

SIR,—In your leader of the 21st inst. you mention the Judicature Act, with reference to an architect or a builder sitting with a Judge in building actions. You go on to say, "We once tried this plan, and found it eminently satisfactory; but have not heard of others working in the same direction."

I have rather a large experience in building actions, and am strongly of opinion that a Judge with an assessor is the best court, and, further, that the case is better tried without a jury.

I sat as assessor here in the High Court, and sat with the late Mr. Justice Wright in rather a heavy case. The case was "Hill v. County Councils," and was tried in April, 1906, and, so far as I could judge, both Court and litigants were satisfied, and the time occupied was much shorter than being tried with a jury and without an assessor. I am sure it would be an advantage if assessors in building cases were more recognised and appointed, as they are in the Admiralty Court.

I have made some inquiries, and from what I can learn, the Courts have no objection to assessors; but the Judges cannot appoint them without an application to them to do so. The Judicature Act (England) of 1873 was adopted in Ireland in 1877, and procedure is laid down under Order 36, Rule 38 (Rules, 1905).

I am under the impression that in Italy the Courts have a list of architects who thus approve, and ask them to report, selecting the man most suitable to the job.—I am, etc.,

ALBERT E. MURRAY, R.H.A., F.R.I.B.A.

37, Dawson-street, Dublin.

[A very practical letter. Why should not the R.I.B.A. take this matter up, and apply to the Courts, asking that assessors should always sit? We feel sure the judges would often be glad of such help.—ED. "B.N."]

Conference on a new educational scheme for architectural students in Dublin is in progress between the Royal Institute of Architects of Ireland and the Architectural Association of Ireland.

New Primitive Methodist Sunday-schools in Gilkes-street, Middlesbrough, have been formally opened. The architect was Mr. T. W. T. Richardson of Stockton-on-Tees, and the contractors were Messrs. W. A. King and Sons, Ltd., of North Ormesby. The cost has been about £1,850.

The Widnes transporter bridge, which connects Widnes with Runcorn, was reopened on Friday after having been closed for two months for important alterations. The alterations were designed by Mr. Basil Mott, C.E., of London, and the work was executed by Sir William Arrol and Son, Glasgow.

The parish church of Creswell, Notts, has been reopened after the widening from 3ft. 6in. to 12ft. each of the north and south arches. Additional seating accommodation has been provided for 200 adults at a cost of £1,100. The architect is Mr. Louis Ambler, F.R.I.B.A., of Temple-avenue, E.C., from whose designs it is proposed to add to the church a morning chapel, an extension of the nave one bay westwards, and a low square tower on the north side of the new bay.

Our Illustrations.

DUNDEE UNIVERSITY COLLEGE: NEW ENGINEERING DEPARTMENT.

The new buildings for this department at the above college have been recently completed in accordance with plans prepared by the architects, Messrs. Sir Rowand Anderson, LL.D., and Paul. It has been designed with a view to its forming part of a quadrangle of University buildings. The main block of the new Engineering Department forms the north side of the quadrangle. It is of two stories in height, broadly treated in a Domestic form of Classical design, with a steeply-pitched roof of grey slate. It contains the lecture-rooms, drawing offices, library, private rooms, and hydraulic laboratory, with two rooms set apart for possible future Architectural Department. An architectural feature is provided by the central tower, some 80ft. high, which accommodates the fan and machinery for the forced ventilation of the building, and also contains a storage-tank of 10,000 gallons capacity, from which the mains in the hydraulic laboratory are supplied. The lower story of the principal elevation to the quadrangle is built of a cream-coloured stone and the upper story of red Dumfriesshire stone, the whole being designed to harmonise with the recently erected Physics building, which forms the west side of the quadrangle. The east wing of the building contains the heat engine, laboratory, and boiler-house, the strength of material laboratory, the cement testing-room, and workshop. We give two plans, as well as the view of the quad.

A PRIZE DESIGN FOR NEW SHOP FRONT, CCX. PICCADILLY, W.

A prize of £50 was offered by Messrs. Martin for a design to be carried out at 210, Piccadilly, for their new shop-front, and Mr. Henry Tanner, F.R.I.B.A., acted as assessor in the competition. There were some two hundred designs sent in, and it was decided to divide up the premium into five, so that £10 was given to that number of competitors. The present illustration gives one of these prize designs, the author being M. F. H. Heppel, A.R.I.B.A., of Winthorpe-road, Putney, S.W. The scheme embodies the idea of emphasising a decided vertical treatment, it being desirable, in the author's opinion, to scale with the adjoining premises, where a Classic order is employed. To do this a pilaster arrangement was decided on, including the ground and mezzanine floor, the height of the piers being approximately the same as the order used for the adjacent frontage. The whole of this shop-front, with the exception of the window, was to be executed in oak, encasing the steel supports, the windows being in bronze. The maximum amount of window-space is obtained, given structural lines to afford evident support to the superstructure.

ROYAL COLLEGE OF ART SKETCH CLUB.—"THE CLUB PRIZE" SET OF SKETCHES IN BLACK AND WHITE.

Mr. W. M. Keesey, A.R.C.A., of Bedford Park, won "the Club Prize" for a set of pencil sketches, of which these four are our selection to-day. The subjects are all well-known ones from Cambridge—viz., Clare College Gate, "The Backs"; St. Sepulchre's Church (the famous round nave), and two views of Clare Bridge. We shall give others from the same series shortly, including some foreign subjects sketched by Mr. Keesey.

NEW GIRLS' HIGH SCHOOL, TAMWORTH.

This new school occupies an excellent site on high ground, in the direction of Wigginton, close to the town, commanding a fine view of Hopwas Wood and the neighbouring country. The main building, which provides accommodation for 121 pupils, consists of a single story, and is laid out in the form of the letter E, the assembly-hall occupying the centre. In order to secure the maximum of sunlight, and to insure efficient ventilation in the various apartments, the premises have been designed with rooms on one side only of the corridors. The latter face north and east, and so form a screen against the cold winds, and leave the warm aspects and best views for the windows lighting the principal apartments of the building. Moreover, wherever practicable, specially-designed windows have been placed on opposite sides of rooms, opening on the one hand directly outside, and on the other into a corridor, by which means ample through ventilation is secured. In the case of the assembly-hall, laboratory, and cookery-room, both ranges of windows are in external walls. The central assembly-hall (40ft. by 25ft.), whilst providing an area for collective gatherings, has been fitted with apparatus, in order that it may also serve the purpose of a gymnasium. The remainder of the premises consists of five classrooms, a laboratory for teaching chemistry and physics, a combined cookery- and dining-room, a large cloakroom and lavatory for pupils, also private rooms and lavatories for the staff. Suitable premises for a caretaker have been provided adjoining the rear of the north wing, and the offices are placed in such a position as to be easy of access, either from the school or the playing field, and are connected to the former by means of a covered verandah. The slope of the ground is utilised to obtain a basement partly out of the ground, which contains the heating apparatus, boiler, a cycle-house, and a large general store. The buildings are in a plain Renaissance style, consisting of brick-work relieved by stone dressings, and the roof is tiled. The grounds have been planted and laid out with walks, flower-beds, and playing yard. The front of the building opens upon a broad terrace: a grass tennis-court has been formed on one side, and the remainder of the space is to be used as a hockey-field. The interior finish is plain but substantial. Walls are plastered and provided with dadoes of wood or patent composition, floors are of wood block or some form of hard paving. A low-pressure hot-water heating apparatus, consisting of pipes and radiators, designed on the most approved principles, and of ample capacity, has been provided, and lighting by incandescent gas has been installed throughout. The school was designed by, and carried out under the superintendence of, Mr. J. Hutchings, A.R.I.B.A., architect to the Staffordshire County Education Committee. Mr. Ernest Dent, of Tamworth, was the principal contractor, his tender being £6,143.

Mr. Charles Henry Dancey, a well-known local antiquarian, died at his residence in Midland-road, Gloucester, on Saturday, aged 75.

The western ward of Summerfield Hospital at Aberdeen is about to be extended, at a cost of £1,400, from plans by Messrs. Jenkins and Marr, of Aberdeen.

Invitations for tenders for the new buildings for the University College, Dublin, contain the following provision:—"Sealed tenders should be left at the offices of the Secretary of University College on or before a date to be announced on the termination of the present labour dispute in Dublin."

An agreement was entered into on Friday night by the Rochester Council and the Chatham Town Council for the carrying out of a joint scheme of main drainage for the two towns at a cost of £300,000. The work will extend over seven or eight years. The sewage-disposal works will be at Motley Hill, on the banks of the Medway, five miles from Chatham, and pumping-stations will be provided in each town. Mr. W. H. Radford, of Nottingham, is the engineer.

The works of restoration at Euston Station, which are being carried out by Messrs. Perry and Co., of Bow, at a cost of £40,000, will probably be completed by next summer. A new wall is being built across the entrance court-yard of the terminus about 30ft. in front of the existing wall, and in the space thus enclosed new central booking-offices will be built. The design adopted for the exterior of the new front to the station is Portland stone with Shap granite bases, while the interior will be of Ancaster stone, with oak panelling and arched roof. This work has just been put in hand. From the new front of the station a flat pitch roof in four bays, carried on two main girders, has been extended to cover an additional 70ft. of the courtyard.

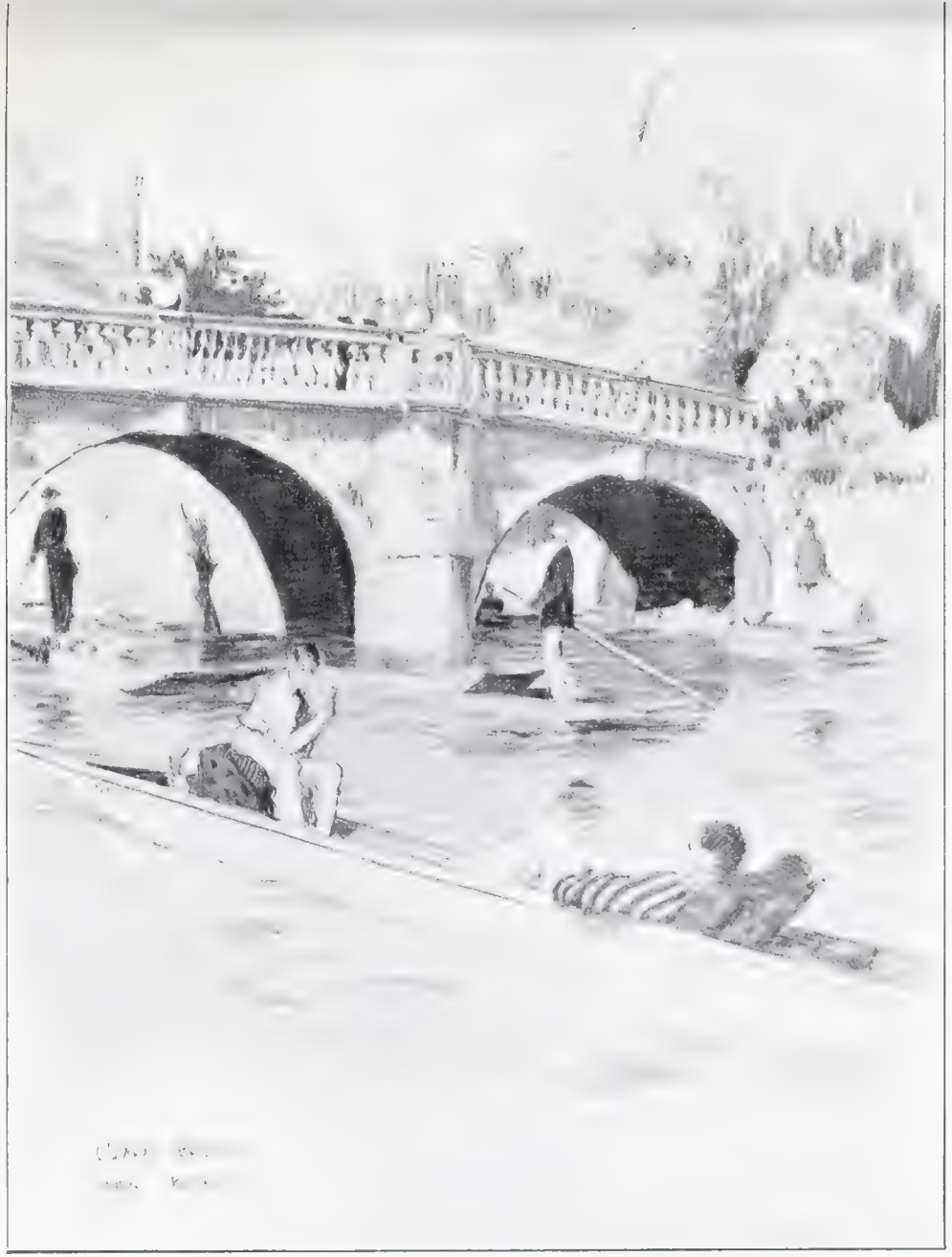
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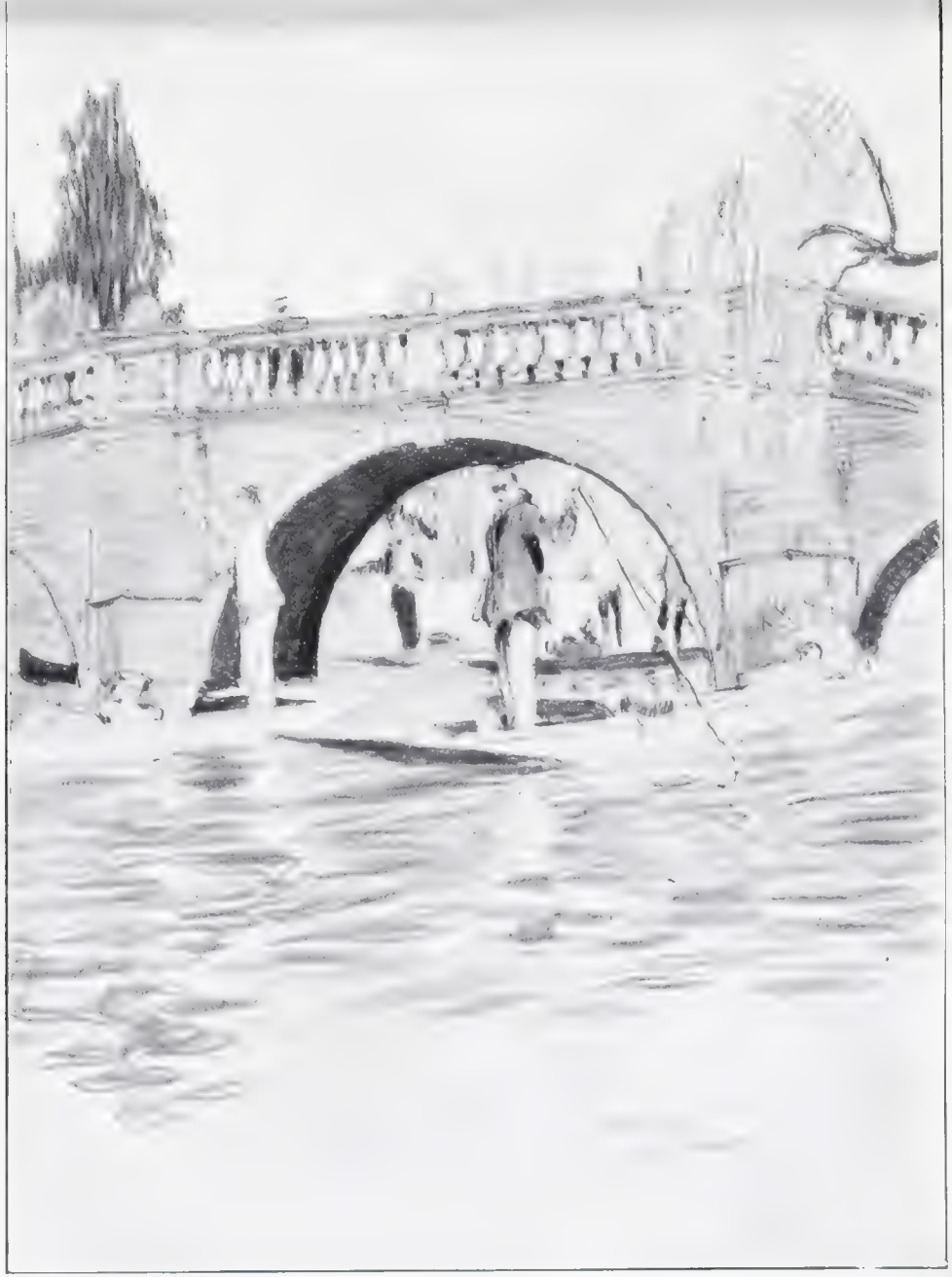


CLARE SAME
TO BACKS



INTERIOR OF
ST SEPULCHRE
"THE ROUND CHURCH"





CLARE GATE, TO BACKS.
CLARE BRIDGE, OVER BACKS.

CAMBRIDGE.

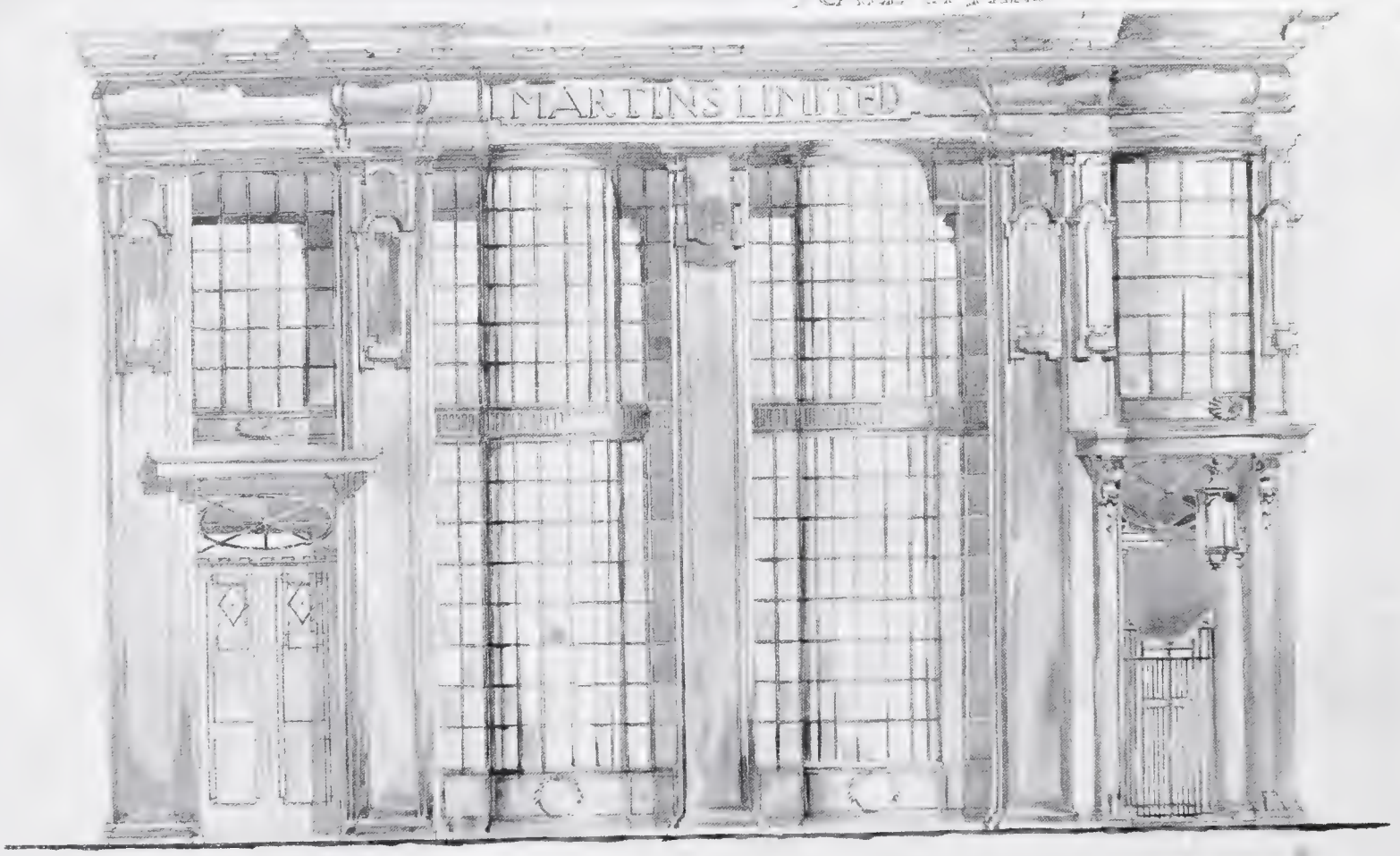
ST. SEPULCHRE—THE ROUND CHURCH.
THE BACKS, CLARE BRIDGE.

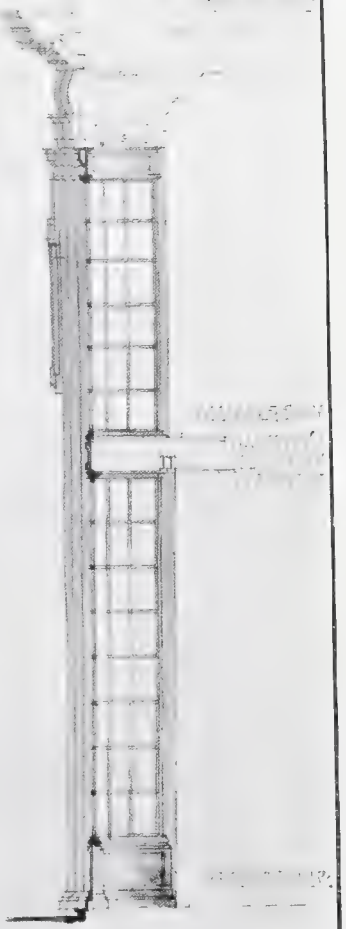
THE "CLUB PRIZE" SET OF SKETCHES IN BLACK-AND-WHITE.—By Mr. W. M. KEESEY, A.R.C.A.

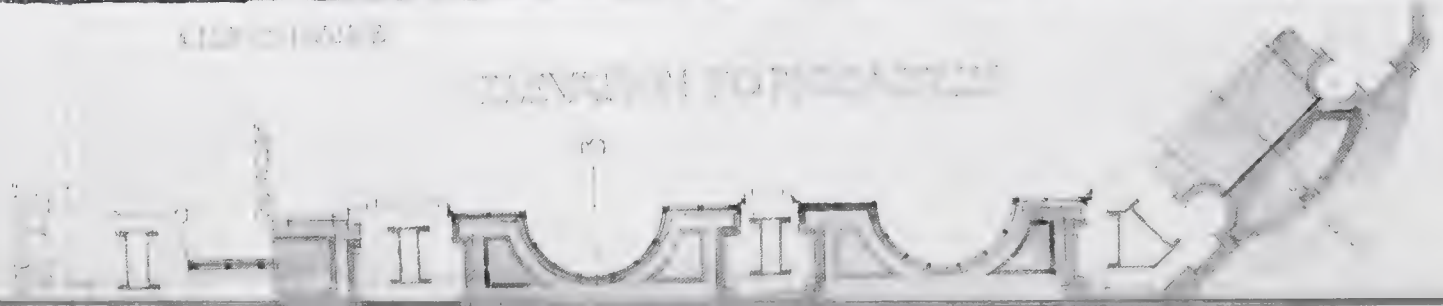
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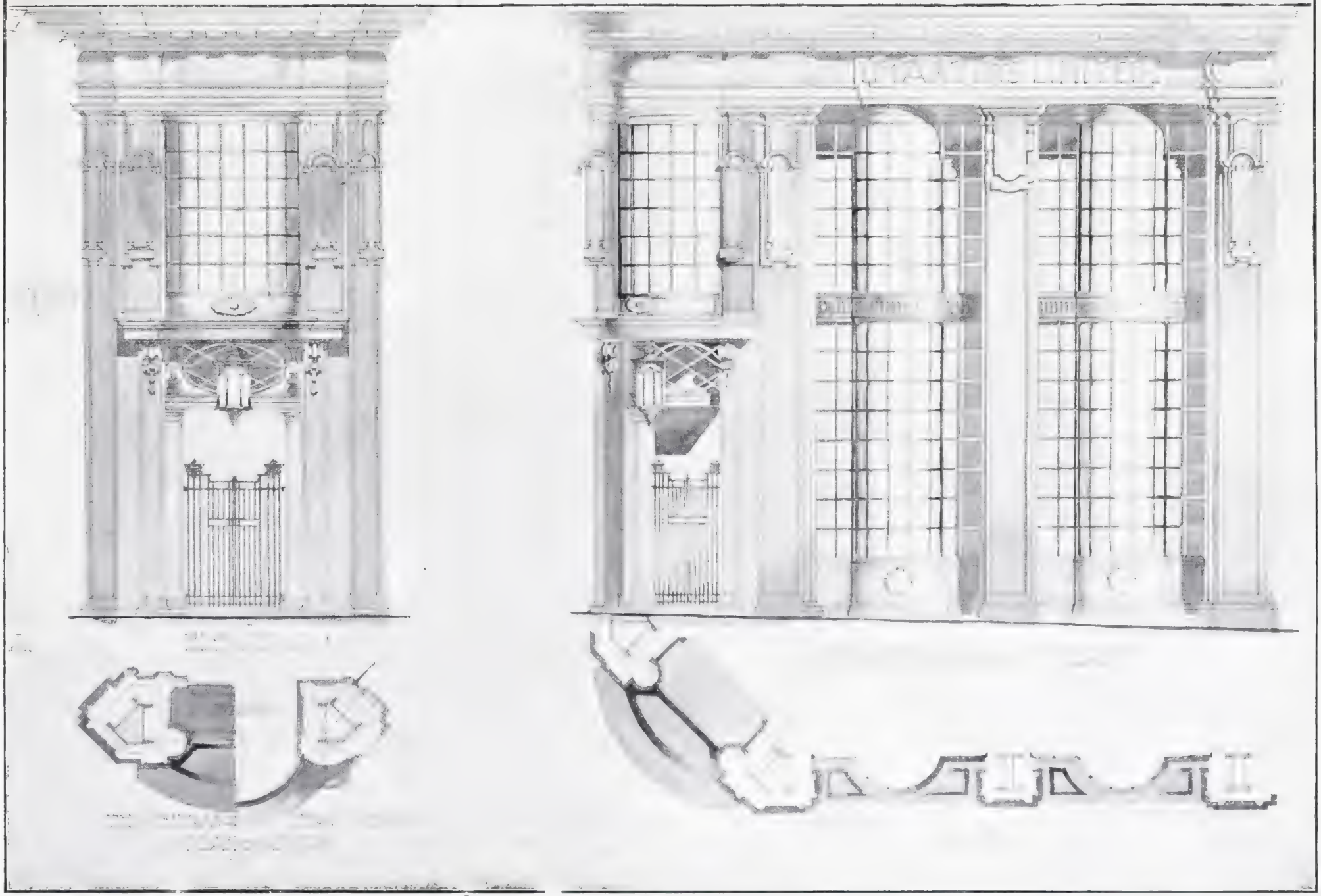
SHOP FRONT IN PICCADILLY

SCALE OF FEET









A PRIZE DESIGN FOR NEW SHOP FRONT, CCX. PICCADILLY, W.—By Mr. F. H. Heppel, A.R.I.B.A., Architect.

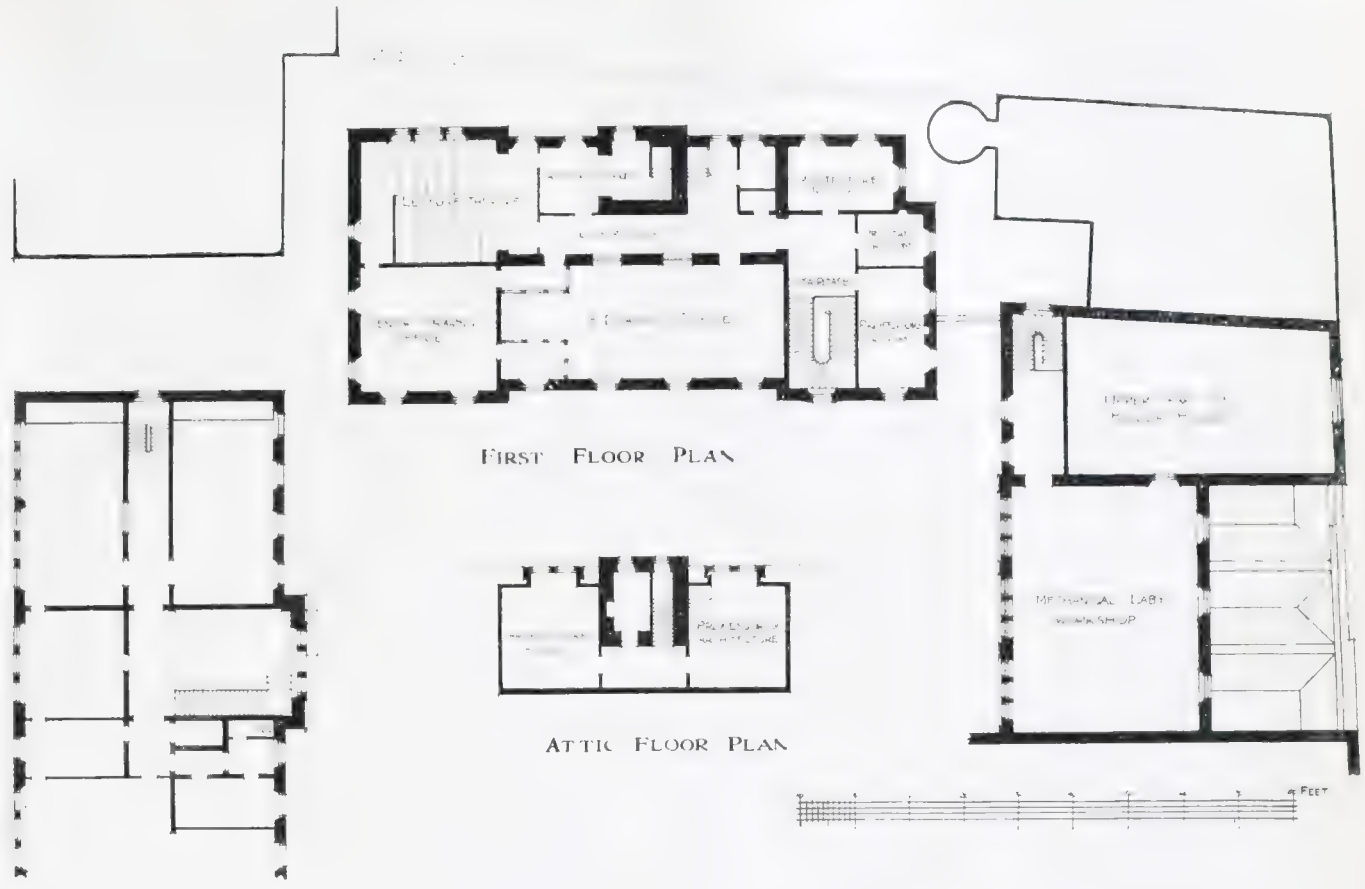
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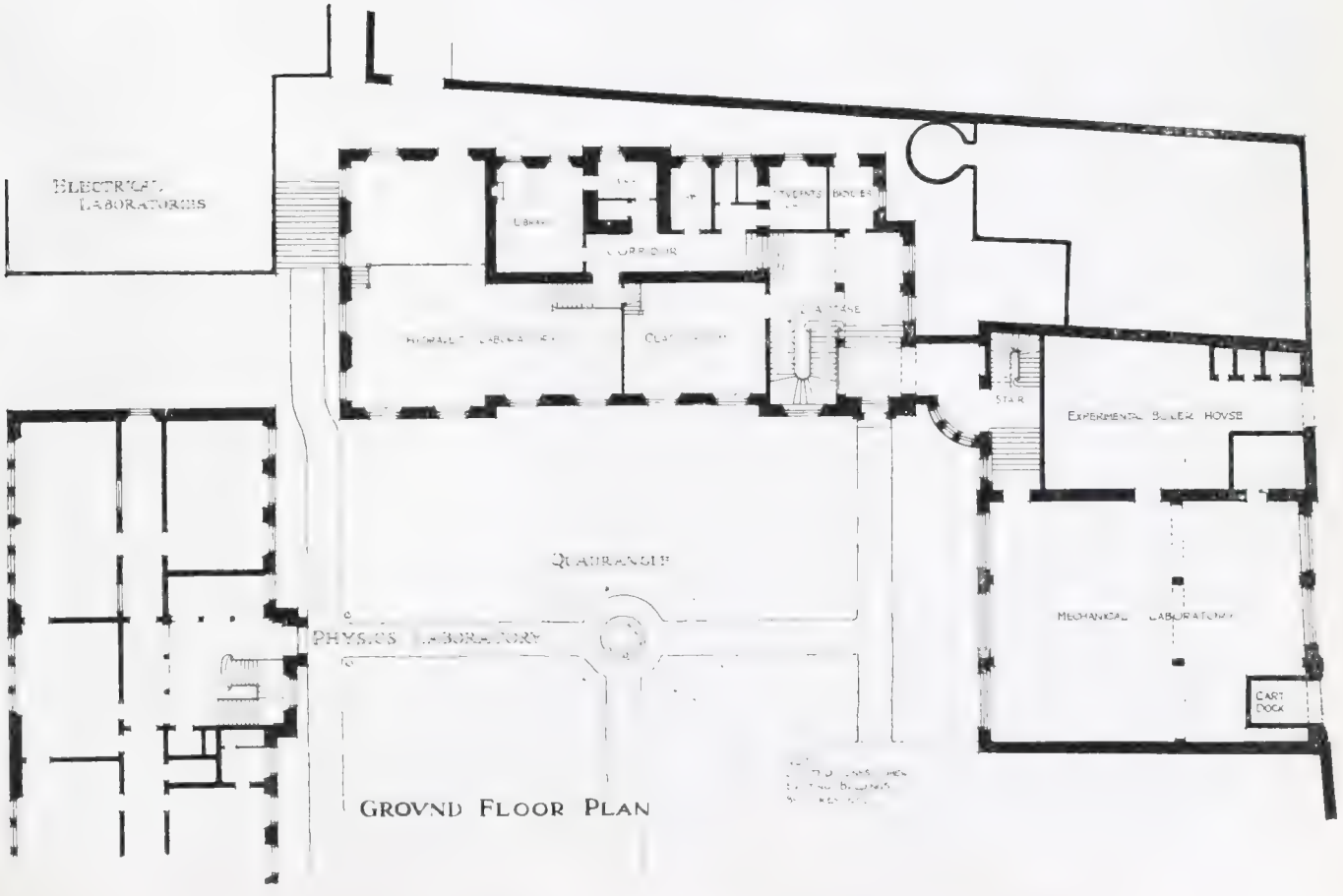


DUNDEE UNIVERSITY COLLEGE: THE ENGINEERING DEPAI



ENT.—Messrs. Sir ROWAND ANDERSON, LL.D., F.R.S.E., and PAUL, Architects.

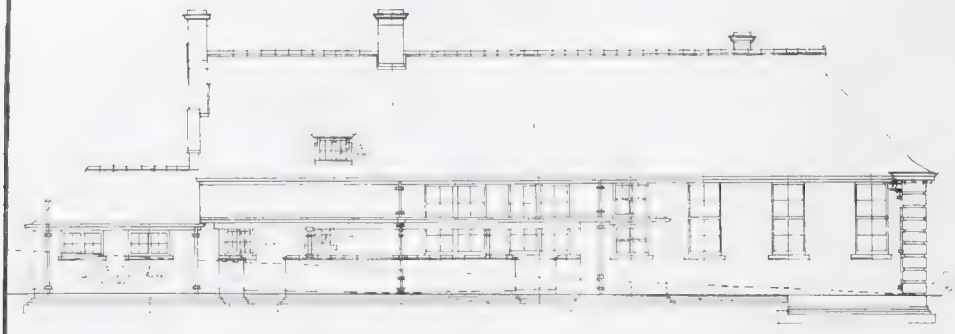




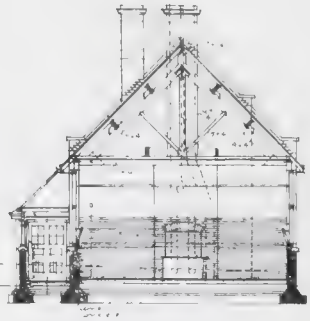
DUNDEE UNIVERSITY COLLEGE: THE ENGINEERING DEPARTMENT.

Messrs. Sir ROWAND ANDERSON and PAUL, Architects.

NEW GIRLS HIGH SCHOOL · TAMWORTH



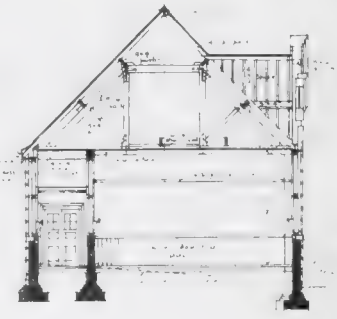
· NORTH ELEVATION ·



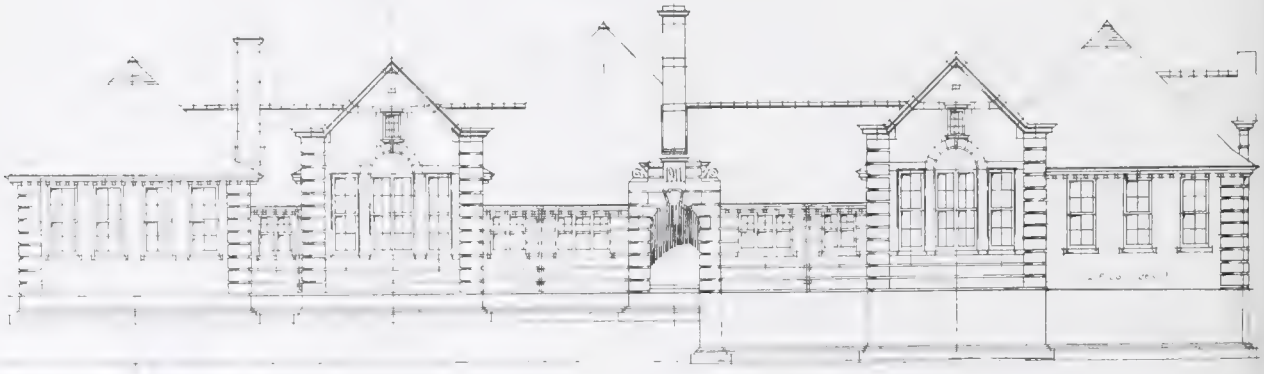
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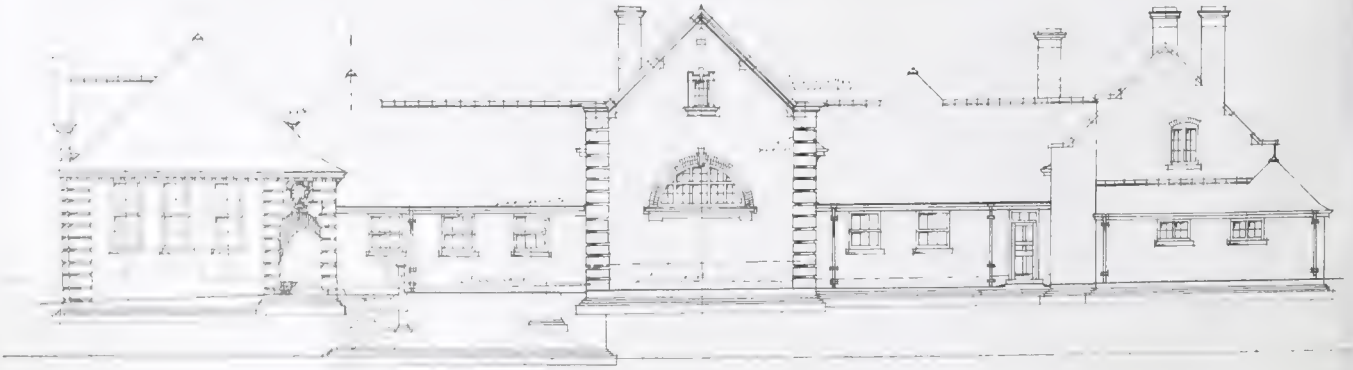
· SOUTH ELEVATION ·



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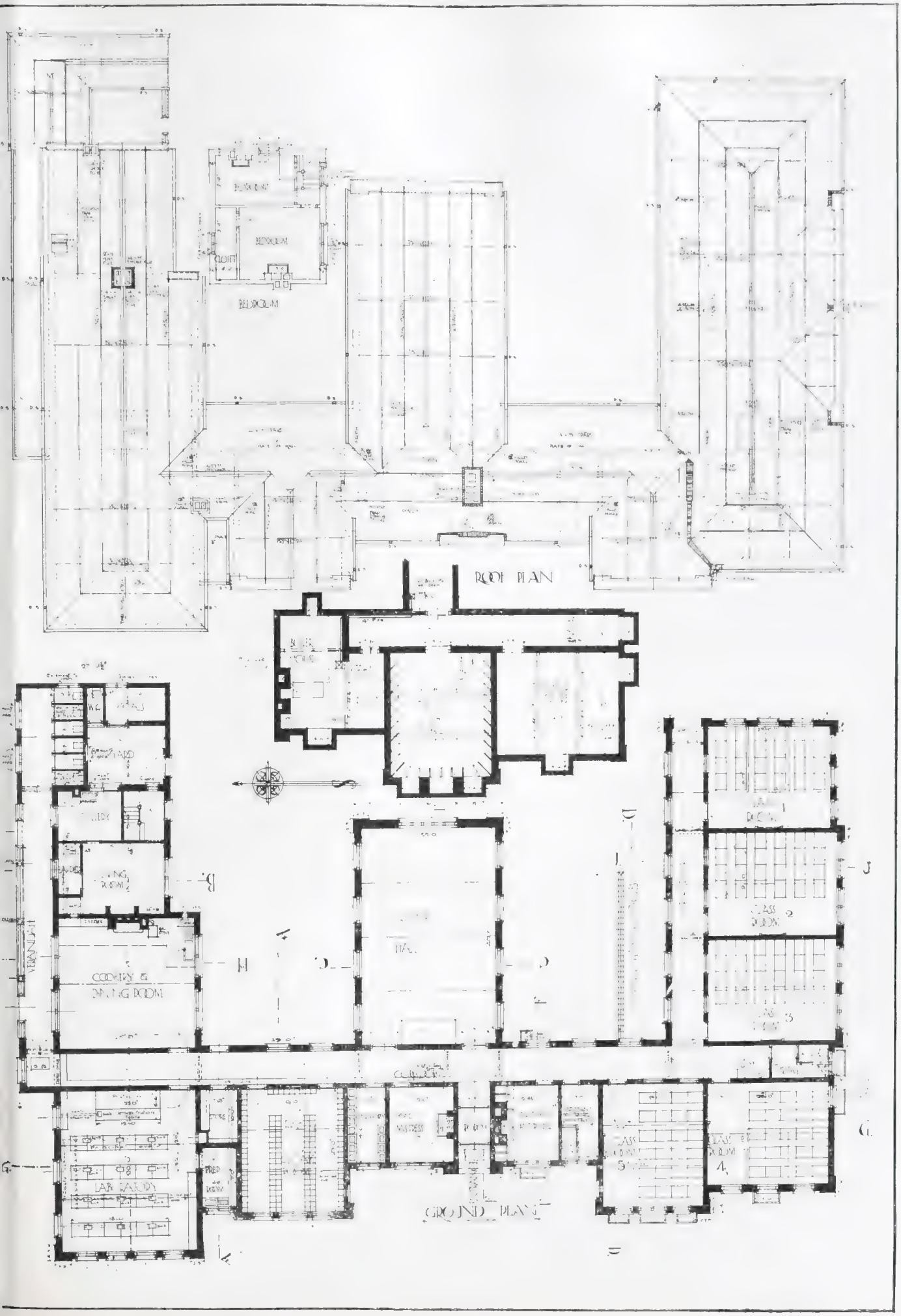


· WEST ELEVATION ·



· EAST ELEVATION ·

Mr. J. Hutchings, A.R.I.B.A., Archi



t. Mr. Ernest Dent. Builder.

PROFESSIONAL AND TRADE SOCIETIES.

ARCHITECTURAL ASSOCIATION OF IRELAND. An ordinary meeting of the Architectural Association of Ireland was held on November 20 at the Rooms, South Frederick-lane, Professor W. A. Scott presiding. The following were admitted members of the Association:—Messrs. Arthur Hill, F.R.I.B.A. (Cork), Noel E. Scott, Wm. N. Spence, F. A. Stuart King, James Bruce, Harold Britton, L. H. Deane (architect L.G.B.), James J. O'Donnell, and J. D. Foley. Mr. W. Kaye-Parry, B.E., delivered a lecture on Sanatoria, and he illustrated it by a number of photographs projected on a screen. Starting with the selection of the site which should be always on high ground sloping to the south, with, if possible, porous subsoil, and sheltered from cold winds and driving rain—Mr. Kaye-Parry went into details of the plans, from the central administration buildings to the pavilions, the size and aspect of the sleeping-apartments for the various classes of patients, accommodation for the staff, water supply, drainage, isolation wards for observation of fresh cases, operating-theatre and sterilising-room, dispensary, open-air schools, chapels, lighting, etc. No detail of a well-equipped modern sanatorium was omitted. The lecture was followed by considerable discussion.

ASSOCIATION OF BUILDERS' FOREMEN AND CLERKS OF WORKS.—The nineteenth annual dinner of this association (until quite recently known as the Builders' Foremen's Association) was held on Saturday evening at the King's Hall, Holborn Restaurant. The chair was occupied by Mr. William Nicholson, of Messrs. W. Nicholson and Sons, Ltd., of Cannon street, E.C., who was supported by Messrs. Percy B. Tubbs, F.R.I.B.A., President of the Society of Architects; W. Coupland, E. J. Dixon, W. T. Farthing, F. Fox, H. Vaughan Lanchester, H. W. Wills, and other architects; B. Carter, Walpole Collins, W. Etteridge, H. Jenks, L. Lindley, W. E. Ollis, F. Purtin, C. P. Roberts, T. Evans (president), A. Field (vice-president), Benton Rees (secretary), etc. Every seat in the large hall was occupied by members and guests. The after dinner speeches were interspersed with an excellent selection of songs, including two by the secretary of the association, who efficiently carried out the duties of musical director. In proposing the toast of the evening, "Success and Prosperity to the Association of Builders' Foremen and Clerks of Works," the chairman referred to the change in the name of the association which had been considered desirable by the committee, as many members changed their occupation from foremen to clerks of works, and those already established as clerks of works sought to join their ranks. The association, to whom he was personally indebted for having sent him two rattling good foremen, was in a prosperous condition, and now numbered over 160 members, and what was perhaps more important, had about £2,000 in hand. Established in 1894, its sphere of usefulness was greatly extended in 1905 by the establishment of a pension fund for the benefit of old members who were in failing health or had fallen upon evil days, also for their widows, and already it had done a great work in alleviating the anxieties of many worthy members of these classes. All connected with the building trades had much cause for grumbling during recent years; but, taking a long look ahead, he could see signs of returning prosperity, or, at any rate, of improvement. He should like to emphasise the necessity that existed for a return to the apprenticeship system in the building trades. There ought to be in every house a sufficient number of apprentices, for the man who learned his trade as an apprentice was worth far more than the one who had had what was known as technical education, which should be regarded as the coping-stone, not the foundation, of a builder's training. He himself started as a joiner's apprentice, and had never regretted the training. Indeed, the youth who began in this practical way acquired something that nothing but ill-health or death could rob him of. He was himself a trade-unionist, and believed that one apprentice to one foreman would be the proper number of apprentices for any shop. The master builder was in an unfortunate position; every other professional man and tradesman expected to get a profit out of what he supplied except the builder, who was not sure of a profit when he tendered for a job. The cost of building operations was steadily increasing, largely owing to recent legislation. A few years' insurance against accidents cost 4s. 10d. per workman per annum; the Workmen's Compensation Act at once raised this to 15s.; but this sum proved quite inadequate to meet claims, and to-day the rate was not less than 47s. 6d. Then the National Insurance Act and the high price of labour had recently greatly augmented the outlay on all building works. Reverting to the topic of the association, the chairman concluded with an urgent appeal for liberal support, remarking that it not only provided the pensions for aged members and their widows, but gave legal assistance in cases connected with trade, assisted those who were seeking employment to obtain fresh berths, and made a funeral allowance for members who had passed away. Mr. T. Evans, the president, in responding, asked members to use their influence to get the younger foremen and clerks of works to join, and so strengthen the association financially. Too many did not come forward for membership until nearing the limit of age for admission—forty-four. The position of the builder's foreman was very insecure, owing to fluctuations in trade, and at the average age at which men rose to be foremen it was impossible to provide an adequate pension paid out of members' subscriptions, so that he felt no hesitation in appealing to builders and builders' merchants for support by donations or subscriptions for this purpose. The remaining toasts were "The Building Trade," proposed with much dry humour, by Mr. H. V. Lanchester, and acknowledged by Mr. C. P. Roberts; "The Architects and Surveyors," given by Mr. H. Jenks, of Messrs. Higgs and Hill, Ltd., and responded to by Mr. Percy B. Tubbs; "The Visitors," proposed by Mr. J. W. Sawyer, and replied to by Mr. T. Bogun; and "The Chairman," given by Mr. B. Carter, of Messrs. Stephens and Carter, and received with musical honours. The chairman's list of subscriptions and donations amounted to £105.

ATAVISM IN ARCHITECTURE.—At the Birmingham and Midland Institute on Monday evening Mr. Reginald Blomfield, A.R.A., President of the Royal Institute of British Architects, lectured on "Atavism in Architecture." He said he was convinced that the whole explanation of any great movement in art, such as the rise of Gothic on the one hand, and the Neo-Classic on the other, was not to be found in technical developments. That materials and climate, social, political, and local conditions, and manners and customs had had a profound influence in the shaping of architecture one admitted at once. It was comparatively easy to trace the technical development of Western architecture. Yet, however ably this was done, the final mystery remained where it was. Explanations would not tell them what was at the bottom of it all, what spirit inspired and expressed itself in Gothic on the one hand, in Neo-Classic on the other. As in all art, the last word rested with temperament, and that was where the immense difficulty came in.

CORROSION OF WATER MAINS.—A meeting of the Midland branch of the Institution of Municipal and County Engineers was held at the Council House, Birmingham, on Friday, Mr. A. T. Davis presiding. Mr. William Ransom (assistant city engineer, Worcester), read a paper, entitled "Some Notes on the Corrosion of Water Mains." The subject was one of great importance to waterworks engineers, who naturally desired to obtain as long a life as possible for their water mains, and also were anxious to use such materials as would not impart any impurity or deleterious property to the water in the course of its distribution. The need for investigation and conference on the subject could be realised, and its practical importance better understood, when he mentioned the recent case of a South African town where a new steel water main had become so pitted with rust that it was necessary partly to replace it with a cast-iron main. It was found that the damage was due to the sulphuric acid in the soil, resulting from the oxidation of pyrites in the soil. Mr. Ransom had his attention drawn to the subject in connection with some investigations he made with regard to a town water supply, which not only corroded the mains, but deposited a brown precipitant upon exposure, and caused an objectionable discolouration of domestic utensils, while at times an unpleasant smell was noticed when the water was drawn from the mains. Mr. Ransom went on to discuss the causes of rust, and remarked that its production, especially in water-service pipes, was often much accelerated by electrical action. It was hydrogen, liberated in the process of chemical action, which gave an unpleasant smell to the water.

EARLY MONUMENTS OF YORKSHIRE.—At the last meeting of the Yorkshire Architectural and York Archæological societies, in the Tempest Anderson Lecture-Hall of the Yorkshire Philosophical Society, York, Mr. W. G. Collingwood, F.S.A., contributed a paper on "Early Sculptured Monuments of Yorkshire." The Rev. A. A. R. Gill, M.A., vicar of Market Weighton, occupied the chair. Mr. Collingwood explained that between 500 and 600 different monuments exist, chiefly in fragments, in Yorkshire alone. They form a great mass of material which has waited long for treatment. He hoped to lay before his hearers the result of ten or twelve years' study, in the course of which he had seen, studied, and drawn nearly all the stones. He had come to the conclusion that stone-carving was first practised in England soon after the middle of the 7th century, and chiefly in the busy monasteries, perhaps rather to the North, in Northumberland and Durham County, then running down the great Roman road. They had in Yorkshire crosses, which he felt able to date older than about 700, whilst some of those to the north of the Tees might be older. In the 8th century we see curious reflexes of Italian design in Anglian work. English artists had always gone to Italy and France for their inspiration. But the application of this art to grave crosses was chiefly an English discovery. At least, we did not find such crosses elsewhere until in a rather later period the Irish and other Celts took up the style and elaborated it.

HAMPSHIRE AND ISLE OF WIGHT ARCHITECTS' ASSOCIATION. — Presiding at a meeting of this association at Winchester, the president, Sir Wm. Portal, Bart., referring to the progress of the association, mentioned that its membership was now seventy-four. Sir Willam referred to the completion of the work at the Cathedral, and heartily congratulated their friend, Thomas G. Jackson, R.A., on the well-deserved honour which his Majesty bestowed upon him last year by creating him a baronet, and Sir William hoped that he would long be spared to adorn the great profession to which they belonged. Speaking of the students' competition, Sir William Portal stated that five competitors entered, four of whom submitted work in accordance with the rules, and the fifth one failed to do so by misdirecting his drawings. Mr. Norman C. H. Nisbett and Mr. H. L. Hill judged the drawings, and awarded the first prize of £3 3s. to Mr. S. G. S. Harris, of Bournemouth, for drawings of the porch of Christchurch Priory; the second prize of £2 2s. to Mr. A. Frohook, of Southampton, for drawings of the Undercroft at Southampton; and the third prize of £1 1s. to Mr. L. G. Worth, of Bournemouth, for drawings of St. Stephen's Church, Bournemouth. Sir William concluded by stating that it was proposed to print the year-book in a still more ornate form, and also to illustrate it. The members having previously inspected the minor repairs which are being carried out at Winchester Cathedral, Mr. Nisbett exhibited several plans and drawings illustrating them, and said that what had

been done had been the re-covering with lead of some of the roofs (postponed owing to the larger work of the cathedral preparation), the necessary strengthening of the old roof timbers where these were found to be decayed or insecure, the releading of old glass in the windows, and the repair of the decayed stonework on the east gable. Mr. R. F. Chisholm, F.S.A., remarked, with regard to the underpinning at the cathedral, there was one point that might be looked on with satisfaction he noticed a button dated the tenth month of 1906. He examined the spot with a microscope, and could see no sign of even a hair's crack. Mr. R. M. Lucas (hon. secretary and treasurer) informed the meeting that Sir William Portal had kindly promised £3 3s. to be awarded as a special prize in some way next year.

LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY.—At the opening general meeting and smoking concert, held at the Queen's Hotel on Thursday, November 20, the president, Mr. A. E. Kirk, occupied the chair. Prizes were presented to the successful students in the society's competitions as follows:—President's prize of £5 5s. and silver medal for measured drawings awarded Mr. Norman A. Blackburn for drawings of Oakwell Hall, Yorks. A second prize of £2 2s. was awarded Mr. R. L. Palmer for drawings of Sherbourne Church, Yorks. In the design competition Mr. L. Foster was awarded the first prize of £3 3s., and Mr. Harold Beard second prize of £1 1s. For sketching, Mr. L. A. Elsworth was awarded the society's prize of £3 3s., and also the Sketching Club prizes of £2 2s. for black-and-white sketches and detail studies. Mr. Eric Ramsden secured the Halden prize, value £4 4s., for the best set of testimonies of study required by the R.I.B.A. for the Intermediate Examination. Mr. C. B. Chadwick was awarded the prize of £3 3s. for the best set of notes and sketches prepared in the study of architectural history for the R.I.B.A. Intermediate Examinations. The President in his address referred at some length to Registration as follows:—"Registration, I regret to say, has not made such progress during the year. The special committee appointed by the R.I.B.A. has at last issued a report, the sum and substance of which is that the time is not opportune to promote a Bill, on account of the enormous amount of work before Parliament at the present time. Since then the R.I.B.A. have issued a further report on the subject, and have called a meeting of members for December 1 to consider same. Although most of the replies from the allied societies are in favour of proceeding with the Bill of Registration, the Council are strongly impressed by the reluctance of others to take such a course. In other words, when will the profession be unanimous? The latest move is not to promote a Bill, but to ask the Privy Council to grant a new Charter, so that all members of the Institute shall have the distinctive title of 'chartered architect.' The scheme suggested wants very careful consideration; but I think you will agree that if new powers are granted, it will be a means of safeguarding the public and ourselves to a certain extent. If we cannot get the whole loaf, half is better than none. Your Council will give it their serious attention. Until they have discussed it, I will not offer a definite opinion." Mr. T. Butler Wilson concluded a most pleasant evening with one of his very cheerful speeches, and proposed a vote of thanks to the artistes, to which Mr. Bowman responded.

LONDON MASTER BUILDERS' ASSOCIATION.—The ordinary meeting of the council was held on Thursday, November 20, at Koh-i-Noor House, Kingsway, W.C., when Mr. Walter Lawrence, jun., president, occupied the chair, and there was a large attendance of members. An important discussion took place upon the prevalence of strikes against the employment of non-union labour, and a resolution was carried dealing with the point, and instructions issued in accordance therewith, details of which will be shortly placed in the hands of all members. A uniform plan of dealing with a standard rate of charges for day-work was carefully considered, and referred to a special practice committee to report thereon. The question as to painters' rules was again discussed, and the suggestion put forward by the Society of Operative House and Ship Painters, that the rules agreed between it and the London Association of Master Decorators be adopted, was unanimously rejected. Reports of the Special Rules Committee, Law and Parliamentary Committee, and Conciliation Boards were received and adopted. Several new members were elected, and nominations for membership received.

MANCHESTER SOCIETY OF ARCHITECTS.—At a students' meeting, held on November 21, at the society's room, a paper was read by Mr. J. W. Herford on "American Architecture." The lecturer pointed out America's disadvantages in having no traditions, as indicated by the inferiority of the domestic, ecclesiastic, and college buildings, and then passed on to public and municipal work, where America meets other countries on more equal footings. The rise of modern American architecture was traced in the work and study of such men as Hunt and Richardson. Mr. Herford then dealt in detail with the work of Messrs. McKim, Mead, and White, emphasising the broad Classical lines followed. The paper was followed by an animated discussion as to the suitability of scale of some of the buildings.

MEDICAL OFFICERS AND SURVEYORS' DUTIES.—At a meeting of the Northern District of the Institution of Muncipal Engineers, held at the town-hall, Newcastle-on-Tyne on Monday night, Mr. William Finch, county surveyor, Carlisle, was elected chairman for the ensuing year, in succession to Mr. John W. Moncur, of Sunderland, who retired on account of pressure of work. After a long discussion, in the course of which it was complained that medical officers in several districts were taking over duties that properly belonged to surveyors, the following resolution was passed: "That this district considers that the whole of the duties in the construction, maintaining, and cleansing of roads and sewers, together with the removal of house refuse, are solely the duties of the surveyor of the district, and in support of such opinion it refers to the Local Government Board Order of July 25, 1903, where reference is made to administration by direct labour." It was agreed that the resolution should be sent to headquarters and that the central body should ask the President of the Local Government Board to receive a deputation on the subject.

THE ORIGIN OF GREEK ARCHITECTURE.—Mr. Banister F. Fletcher, F.R.I.B.A., considered in his second lecture on Greek Architecture at the British Museum, delivered on Thursday in last week, the Greek invention of the Orders of architecture and the origin and evolution of the Doric Order on the mainland and in the colonies in Italy, Sicily, and the Ægean Islands. In all Greek colonies there were temples for the gods and theatres for men. At least seven centuries before the birth of Christ the artistic, beauty-loving Greeks adjusted the proportion of the column and entablature, which make up the Orders so delicately that they could no more be seriously violated without loss of harmony than could the proportions of the human figure. The Orders had successfully challenged competition through the centuries; they had invaded all countries, and had just been unveiled on the front of Buckingham Palace. Mr. Fletcher balanced the probabilities as to the origin of the Doric Order, which was grave, severe, and sturdy, akin to the character of the colonising Dorians. Had it a lithic or a wooden origin? Was its prototype to be traced to the Egyptian rock-cut tombs of Beni-Hasan or to the prodomos of the wooden hut? So far, there was none that answered; but the older the column the stouter, stumpier, and sturdier it was, as was suitable for granular stone, while the sloping mutules above, with their peg-like guttæ, suggested the use of fibrous wood. Mr. Fletcher therefore concluded that the columns might conceivably be of stone origin, while the roof-part might be explained by the wooden theory of origin.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.—The Board of Architectural Education of the Royal Institute of British Architects announce that the designs submitted by the following students, who are qualifying for the Final Examination, have been approved:—Subject XI. (a).—Design for a County Club: Messrs. C. W. Craske, W. R. Davison, V. Dyson, H. N. Jepson, P. J. Adams, H. Andrew, W. Alison, J. S. Fyfe, A. Nisbet, J. M. Brown, J. A. Clarke, S. W. Ackroyd, G. A. Rose, H. T. Cooksey, and H. M. Whitehead. Subject XI. (b).—Design for a Clock-tower: Messrs. A. E. Maxwell, G. W. Callender, A. S. Burnett, N. S. Robinson, A. Silcock, T. T. Jenkins, C. C. Cheek, A. W. Robertson, jun., A. R. Shibley, G. M. Eaton, A. J. Wood, E. B. Musmann, W. E. W. Terrell, W. B. Binnie, A. F. Hooper, R. S. Wallace, R. H. Philp, F. Jenkins, F. A. Addev, A. A. Foote, A. P. Stoner, E. B. Norris, H. S. Triscott, F. H. Glazebrook, and E. R. F. Cole.

THE ROYAL TECHNICAL COLLEGE ARCHITECTURAL CRAFTSMEN'S SOCIETY, GLASGOW.—At a meeting of the above, held on Friday, the 21st inst., Mr. T. G. Gilmour, A.R.I.B.A., presiding, Mr. W. T. Peddie gave a lecture, entitled "Electrical Installation for Domestic Purposes." He said the cost per unit had been very considerably reduced in recent years, and electricity was now largely taking the place of gas. The points to be considered were cost of installations, cost of supply, suitability, fire risk, and health. In regard to installation there is very little difference compared with gas. Where cost of supply is a matter of consideration, as is generally the case in tenements of the cheaper class, the favour would be to gas, as the gas bill would be about a half less than for electricity; but where gas is used the cost of upkeep for interior decoration and cleaning would be much greater. In point of suitability, electricity has great advantages over gas, as any desired effect may be obtained by electric light. Electric light is also better from a health point of view. Mr. Peddie described in detail the nature and fitting up of tubing, wires, and other fittings, and also the precautions to be taken. In a country house an engine and dynamo might be required, and also provision for storing the electricity. Electricity may be used for domestic purposes other than lighting, such as heating, ventilating, cooking, working washing-machine, knife-cleaner, vacuum-cleaner, coffee-grinder, boot-cleaner, and many other labour-saving devices.

The new town-hall at Chaddeston, Lancs, has been formally opened Messrs Taylor and Simister, of Queen-street, Oldham, were the architects, and the outlay has been about £8,000.

The Bishop of Mashonaland has issued an appeal for funds to enable the building committee to proceed with the first part of the new cathedral. The cost of erecting in local granite the eastern portion of the cathedral, with a memorial chapel of St. George and vestries, will be £13,000. £7,500 of this sum has been raised, mainly by local effort.

After negotiations extending over three years between the Portsmouth Corporation and the War Office as to the repair and maintenance of the sea protective works at Southsea, the Secretary of State, at an interview with the Mayor of Portsmouth, has agreed that, irrespective of legal liability in the matter, all necessary works to prevent further damage or risk should be put in hand at once, and instructions have been given accordingly.

New headquarters have been provided at The Friars, Stafford, for the accommodation of the Staffordshire Yeomanry and the 6th Staffordshire Battery of the Royal Field Artillery. They were formally opened the other day by Earl Dartmouth. The new drill hall has cost £3,000. The building is constructed of brick, with stone dressings, and is provided with orderly-rooms, store-rooms, harness-room, gun-room, and drill-hall. The rooms for officers and non-commissioned officers are on the first floor, together with a recreation-room.

Intercommunication.

GUINEAS FOR BEST REPLIES.

We offer a prize of one guinea every week for what we deem the best reply to any query appearing in this column, which we deem worth insertion.

Replies must be sent in over real name and address. No others can receive a prize. The Editor's judgment is final.

This competition is restricted to buyers of the paper, and with each reply a coupon cut from our front page must be enclosed.

Any number of replies can be sent, but a coupon of this date must accompany each.

All else being equal, brief replies will stand the best chance. We emphasise this, as some correspondents ignore the fact that querists want terse facts, not long essays. Any necessary illustrations must be in line only—no tints or washes—and about twice the size they are meant to be reproduced. We are unable to avail ourselves of replies that contain illustrations unless we receive them by first post on Tuesdays.

The right to withhold the prize in the event of no reply being received worthy of it is reserved by the Editor, who also claims the right to publish any other replies he may deem useful.

We award the guinea to Mr. R. Graham Keevill.

REPLIES

13138. FERRO-CONCRETE LINTELS. If this lintel was reinforced for tension only, the depth would have to be 8in. for working stresses in the steel of 16,000lb. per square inch, and in the concrete 600lb. per square inch. For the size of beam given it must be reinforced for tension and compression in addition to shear. The most economical way is, therefore, to put in sufficient steel to take all compression stresses. Working stresses: Steel, 16,000lb. per square inch. t for tension and compression, 12,000lb. per square inch = f_c for shear, R = moment of resistance, B = bending moment at centre of span for supported beam, A = area of steel, a = lever arm, S = max. shear, p = distance from mid-span to support, l = span, A_v = area of steel for shear. Loads:

Super load = 30cwt. = 3,360lb.

Wt. of beam = $7' \times 7.5 \times .33 \times 150$lb. = 260lb.

$$W = 3{,}620\text{lb.}$$

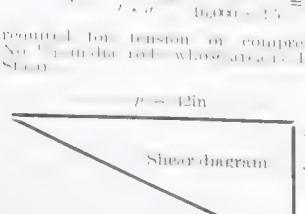
$$B = \frac{W \times l}{8} = \frac{3{,}620 \times 7 \times 12}{8} = 38{,}010\text{in.lb.}$$

$$R = B = A \times t \times a$$

Therefore

$$A = \frac{B}{t \times a} = \frac{38{,}010}{16{,}000 \times .75} = 3.01\text{sq.in.}$$

required for tension or compression, say two No. 1 round rods whose areas is slightly in excess. Steel



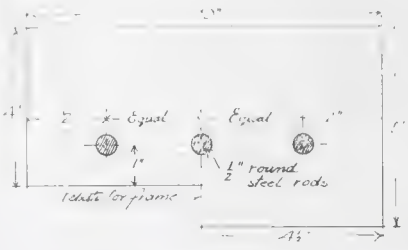
$$A_v = \frac{S \times p}{f_c \times a} = \frac{1{,}810 \times 12}{12{,}000 \times .75} = .03\text{sq.in.}$$

required to take all the shear. There are four area in each pair of stirrups, and insert six pairs. Area of stirrup required

$$= \frac{2.53}{1 \times 6} = .105\text{sq.in. required.}$$

Say flat-hooped steel 1in. × ⅞in. The spacing of the stirrups obtained from the shear diagram is as shown. The neutral axis for this reinforcement will be practically through the middle of the beam section. This lintel should be increased in depth to at least 5in., in order to comply with the usual rule that the effective depth should not be less than one-twentieth the span, and this depth would give better "cover" to the steel, which, in this case, is very bare.—R. Graham Keevill, A.M.I.M.E., M.C.I., 7, Palewell Park, East Sheen.

[13138.]—FERRO-CONCRETE LINTELS.—In reply to "T. H. W.," a typical section for lintels such as he requires would be as sketch herewith. The reinforcement should be kept at least 1in. from bottom and sides, as a protection against fire. Sufficient strength would be obtained for carrying the load specified over a 7ft. span by using three ½in. round steel rods spaced as shown. For cottage work generally, however, I make my lintels as follows:—Size, 6in. thick, and of width of wall; concrete mixed one part Portland cement, one part sand, and five parts of clean broken brick, to pass a ⅜in. mesh, and sufficient fine boiler-ashes added to fill interstices. Reinforcement for openings up to 3ft. span lengths of galvanised strand wire (seven



strands), No. 2 size, one length for each half-brick of thickness of wall. For spans over 3ft., and up to 5ft., I use ⅜in. round steel rods, and for spans from 5ft. to 7ft., ½in. round steel rods, spaced as sketch. Sometimes I use barbed wire in place of the strand wire; it affords a better grip with the concrete. I have just finished a job in which I used some old ¼in. galvanised-iron water-tubes as reinforcement to the lintels of 5ft. span, and they are standing all right.—Frank H. Heaven, A.R.I.B.A., P.A.S.I., 39, Coronation-street, Aberkenfig.

[13138.]—FERRO-CONCRETE LINTELS.—The depth proposed by "F. H. W." is far too small for economical concrete construction, and would require two 3½in. by 1½in. rolled steel joists. The simplest method suitable for single reinforcement, utilising the full allowable stresses in steel and concrete, is obtained from the following formula:

$$d = \sqrt{\frac{WL}{95b \times 8}}$$

$$A_t = bd \times 0.00675.$$

In the case given, and assuming the weight of lintel to be 1cwt.

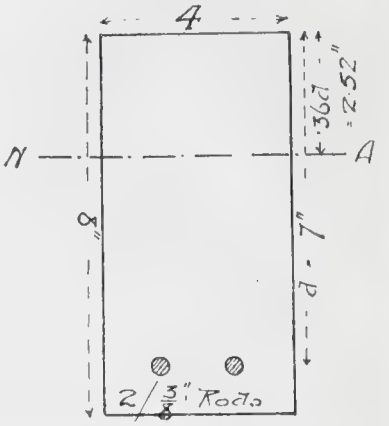
$$d = \sqrt{\frac{3{,}808\text{lb.} \times 84\text{in.}}{9 \times 9 \times 8}} = \text{say } 7\text{in.}$$

$$A_t = 9 \times 7 \times 0.00675 = 0.424\text{sq.in.} = 4 - \tfrac{3}{4}\text{in. rods.}$$

$$\text{The shear} = \frac{W}{2bd \times 0.88} = \frac{3{,}808}{2 \times 9 \times 7 \times 0.88}$$

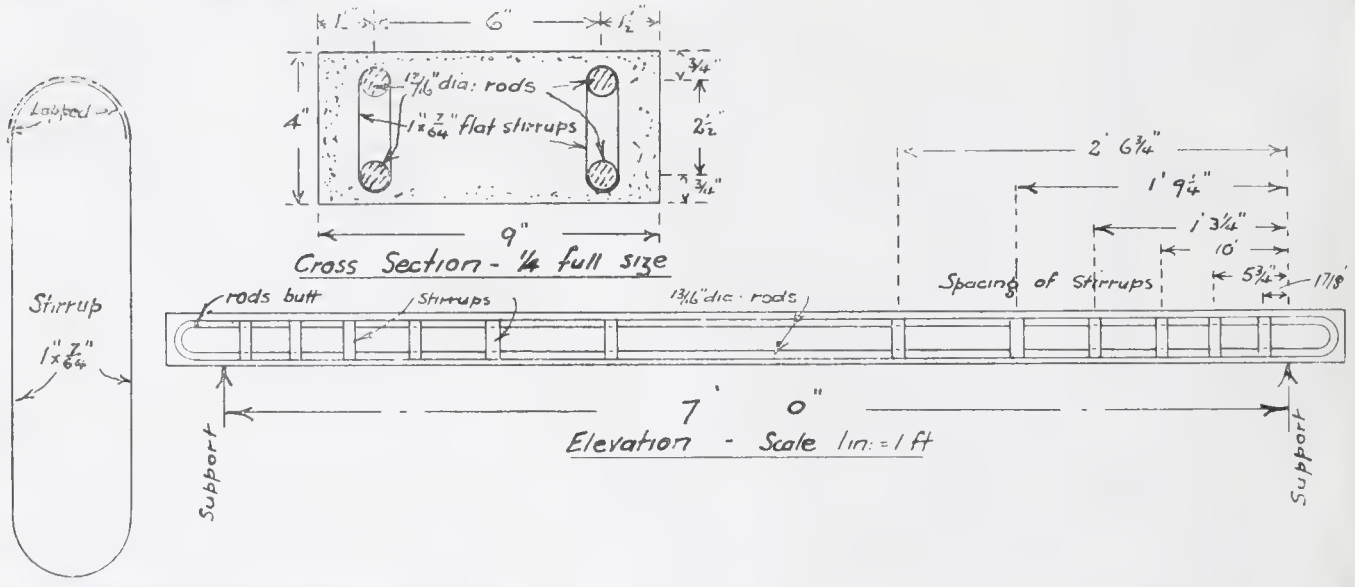
$$= 35\text{lb. per sq.in.}$$

This is well within the safe limit on concrete, and the rods need not be cranked. With this formula the N. axis is $.3d$ from the top. For convenience in casting, handling, and forming a reveal, it would be better formed as two lintels, each with two rods. If a number are required, the mould should be formed with a loose side to act as a support until

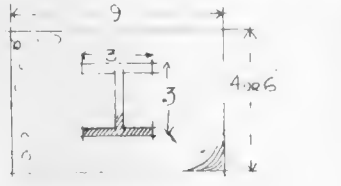


well set. Wet the mould, and render the seen faces with about ¼in. cement and ochre for stone colour, and back up with a 4 : 2 : 1 mixture just wet enough to adhere together, placing the steel in the position shown, well punning and marking top. Turn the mould on to its loose side, and the other portion may be removed and used for the next casting. The concrete should be well watered regularly through a rose for two or three days, and not allowed to dry.—Frederick Dyer, P.A.S.I., 70, Lindley-street, York.

[13138.]—FERRO-CONCRETE LINTELS.—A depth of 4in. would be insufficient for a lintel to a 7ft. span. A depth of 7in., or about two courses, would be better; but as some of the lintels will probably have to carry portions of the floor, a depth of 9in., or about three courses, would be best. The reinforcement may consist of three ⅜in. diameter steel



missible stress in the concrete will be 1,000 lb. per square inch, instead of 10,000lb. a square inch. Thus a great waste of steel would result because the excess bending moment over-reinforcement to be taken by such double reinforcement is so excessive. Further diagonal tension, or shear stress to the amount of nearly 60lb. at the abutments, would have to be taken by inserting shear stirrups. It will thus be seen that the 9in. by 6in. lintel in question is very clearly one of those cases where reinforced concrete, as properly under-



stood, would be most unpractical. I would advise querist to use a 3in. by 3in. by 8lb. H section, embedded in the concrete, as shown by sketch. A further advantage would be to increase the size of lintel to 9in. by 6in., thus giving a better cover to the embedded steel, and also giving a dimension which will work to brickwork.—Henry G. Warren, A.R.I.B.A., Claremont, Otterv St. Mary.

LIAS. FERRO-CONCRETE LINTELS. Total length of lintel will be 7ft. 9in., and taking weight of reinforced concrete as 150lb. per sq.ft., weight of lintel is 1in. × 9in. × 7ft. 9in. × 150lb. = 2911b., therefore it must support 30cwt. or 3,360lb. + 2911b. = 3,651lb. A similar lintel, 12in. wide, would have to carry 3,651 × 12/9 = 4,868lb., and bending moment

$$= \frac{WL}{8} = \frac{4,868 \times 7\frac{1}{2} \times 12}{8} = 56,500$$

Therefore—

$$\sqrt{\text{bending moment}} = 238 \text{ approx.}$$

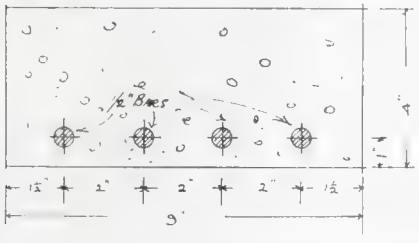
Now the area tensile reinforcement or A_r

$$= .002261 \sqrt{B.M.}$$

Therefore $A_r = .002261 \times 238 = .538148$

or for lintel 9in. in width is $\frac{9}{7} \times .538148 = .653589$

The reinforcement must have a total area of



.653589 square inches. The bars should not have a large section, as lintel is so shallow. We find that four rods, each ¾in. in diameter, fulfil above conditions, and should be spaced as shown in sketch, with their centres 1in. above bottom of lintel.—H. J. Wilson, A.R.I.B.A., Cumbergate, Peterborough.

LEGAL INTELLIGENCE.

CLAIM BY A PAINTER. An action brought in the Bow County-court on Friday last, the 21st inst., by a member of the Society of Operative House and Ship Painters and Decorators against a member of the L.M.B.A., to establish a claim for an extra ½d. per hour beyond the rate recognised by the L.M.B.A.—i.e., 9d. per hour was decided against the claimant, with costs.

WATER SUPPLY AND SANITARY MATTERS.

LISS. A Local Government Board inquiry was held at Liss on Tuesday, the 18th inst., by Mr. W. M. Cross, M.Inst.C.E., into an application of the Petersfield Rural District Council for a loan of £7,750 for a new scheme of sewerage and sewage-disposal, the latter being on bacterial lines—for Liss. There was a numerous attendance of ratepayers at the inquiry, the plans meeting with very general approval. Messrs. Chambers Smith and Adams, 53, Victoria-street, Westminster, S.W., are the engineers for the scheme.

A new gasholder and tank, with a capacity of 252,000cu.ft., was inaugurated at Harwich last week. It has been built at the works at Bathside, the contractors being Messrs. S. Cutler and Sons.

Additions to the Radcliffe Infirmary at Oxford, carried out at a cost of over £25,000, were formally opened on Wednesday by Earl Curzon of Kedleston, Chancellor of the University.

Our Office Table.

At the forthcoming meeting of the Grand Lodge of Freemasons a resolution will be submitted that the Masonic memorial to his late Majesty King Edward VII., M.W. Grand Master from 1875 to 1901, take the form of an extension and improvement of Freemasons' Hall, to be named "The King Edward VII. Memorial." The resolution further instructs the board of general purposes to have plans prepared for the purpose and to proceed with the work.

Another step was taken on Wednesday towards the settlement of the problem of a new site for London University. The offer of four plots of land, intersected by roads, on the Duke of Bedford's estate at the rear of the British Museum having been rejected, five other sites were considered by a sub-committee of the Senate of the University, those of the Imperial Institute, the Foundling Hospital, two on the south bank of the Thames, and Somerset House. At the meeting on Wednesday of the London Education Committee the Higher Education Sub-committee recommended that the London County Council should approve generally of the site of Somerset House as the most suitable for the University buildings, and should join with the Senate of the University in asking the Government to receive a joint deputation on the question. This was, after much discussion, adopted by 24 votes to 3. The site has an area of between five and six acres, and is eminently accessible. Sir William Chambers's masterpiece has great architectural merits, but would require much internal reconstruction to adapt it for its new uses, and even then we have grave doubts of its suitability for the purpose, and its appearance is certainly not suggestive of a Metropolitan University. The latest scheme savours of makeshift parochialism. Surely a specially-designed edifice on an isolated site should be the ideal aimed at by the Education Committee.

Under the terms of the Mall Approach Improvement Bill, to be introduced by the London County Council next session, the following street widenings are specified: "A widening of Spring-gardens on the northern side thereof, between the centre line of the existing Mall Approach and a point one and a half chains, or thereabouts, westward thereof. A widening of the Mall Approach on the north-western side thereof, between Spring-gardens and Charing Cross. A widening of Charing Cross on the southern side thereof, between the centre line of the existing Mall Approach and a point one and a half chains, or thereabouts, westward thereof."

At the last meeting of the Devon Education Committee, held in the Castle, Exeter, a special report was presented re the architect's staff and office by a sub-committee, who recommended that the staff be strengthened, and that certain additions be made to the salaries of existing officers, the whole involving an additional annual charge upon the rates of £531. Sir Henry Hepburn, in moving the adoption of the report, said that since 1910 certain work had been done outside the department, at a cost of about £100 a year, relieving to some extent the pressure in the office. But, in spite of this, the arrears in the office had been increasing continuously during the past three years. As to the staff, there were at present two grades of draughtsmen, and the recommendation was that three grades of draughtsmen should be established. Another proposal was that there should be an additional clerk of works, making three in all. Increases of salary were proposed to be given to men who had been employed for more than three years, many of them a great deal longer. As to Mr. Morris, the architect, in the report he drew up he did not say a word about himself, and he had explained that he would far rather not ask for any increase for himself if that endangered the carrying out of the rest of the scheme. The buildings sub-committee, however recommended that Mr. Morris, who had been the architect for ten years, be granted an additional £50 a year, making his salary £500 a year. An amendment was proposed directing that all work to secondary schools be entrusted to outside architects; but this was rejected, and the report was eventually adopted.

The first annual report of the Durham County surveyor, dealing with the year ended March 31, 1913, has just been issued. It mentions that the main and subsidised roads under the direct control of the various authorities (68.71 miles of which are repaired by urban district councils, including 33.68 miles under contract; 222.96 miles by rural district councils; and 61.80 miles by the county staff) have, with very few exceptions, been maintained to a fair standard. The expenditure on "special works," such as tar treatment and foundation works on the whole of the main roads was, for the year ended March, 1912, £3,462; and for 1913, £6,036. The amount sanctioned in respect to applications for similar work for the current year is £9,535; but there will be, in addition, a considerable amount of such work carried out in the improvement of the Great North Road, under the Road Board scheme. It has been observed that tar spraying, if repeated annually on a good macadam surface, has been very beneficial and has withstood the increased motor and other traffic during the summer, in addition to abating the dust nuisance. It is proposed to extend the amount of tar-spraying to be done next year. In September of last year a scheme for various improvements was submitted to and approved by the Road Board, to the amount of £86,000; grants were offered amounting to £35,333, with loans for five years amounting to £15,000, and the county council accepted the offer and gave instructions for the work to be proceeded with. In construction of Lumley Bridge, over the River Wear near Chester-le-Street, at a cost of £10,000, good progress has been made. Sketch plans and estimates for new police courthouse at Seaham Harbour police-station, and alternative schemes for either rebuilding Jarrow police-station on an extended site, at a cost of £10,000, or a new police-station and courthouse on an entirely new site, at a cost of £14,000, have also been prepared.

Under a general scheme for research work in forestry, the Board of Agriculture has offered a grant of £500 a year for a period of two years to the University of Cambridge to enable investigations to be undertaken on questions relating to the structure of timber, etc. The main points of the scheme are as follows:—(1) A comparative study of home-grown pine and spruce and of foreign timber of the same classes, with the object of ascertaining to what extent the former, when grown under proper conditions, might be substituted for the latter; (2) an inquiry as to the capabilities of home-grown timber for use as pit-props, railway sleepers, paving blocks, etc.; (3) a special study of certain trees, as elm, poplar, chestnut, which are of importance in the Eastern counties; and (4) a survey of wood-using industries in the Eastern counties. Under the grant of £500 a year from the Board of Agriculture for advisory work, the committee have appointed Mr. Charles Hankins as adviser. There has already been a large demand for advice on the management of woodlands, from land owners in the Eastern counties. A total area of about 1,600 acres has already been reported on on 12 different estates. The whole of the necessary £5,500 has now been subscribed for buildings, and a beginning was made with the new building in the spring. The building will probably be finished by the beginning of the next Easter term.

On October 25, Congress Hall, in historic Independence-square, in Philadelphia, the building where the Senate and the House of Representatives of the United States sat from 1790 to 1800, was rededicated with patriotic exercises, in the presence of President Wilson and the French Ambassador to the United States. The occasion marked the completion of the restoration of the Hall to almost its original appearance, a work carried out by a committee of architects without remunera-

tion, as a labour of love. The Philadelphia Chapter of the American Institute of Architects, through its president, Mr. Milton B. Medary, is now arranging with the city for the restoration of the old City Hall, the building in the Independence Hall group at the end opposite to Congress Hall. The remodelling of Independence-square is in progress under the supervision of Mr. Horace Wells R. Sellers.

MEETINGS FOR THE ENSUING WEEK.

MONDAY.—Royal Institute of British Architects. Special Meeting to Consider the Report and Recommendations of the Council in regard to the Statutory Registration of Architects. 8.15 p.m.

Society of Engineers. "Corosion and Rusting of Iron," by Eric. K. Rideal. 7.30 p.m.

Royal Society of Arts. "Measurement of Stresses in Materials and Structures," Cantor Lecture No. 1, by E. G. Coker, M.A., D.Sc. 8 p.m.

TUESDAY. Institution of Civil Engineers. "The Transandine Railway," by Brodie H. Henderson, M.I.C.E. 8 p.m.

WEDNESDAY.—Royal Society of Arts. "Perfumery," by J. C. Umney. 8 p.m.

Institute of Sanitary Engineers. "Reminiscences of a Sanitary Engineer," by H. Percy Boulnois, President. 8 p.m.

THURSDAY.—Concrete Institute. "The Differential and Integral Calculus of Structural Engineers," by W. A. Green. 7.30 p.m.

A.A. Camera, Sketch, and Debate Club. "Some Notes on Egypt," by W. J. Palmer-Jones. 8 p.m.

Victoria and Albert Museum. "Wood-Engraving," by Edward F. Strange. 8.30 p.m.

FRIDAY (DEC. 5).—Edinburgh Architectural Association, "Gardens," by Lawrence Weaver. 8 p.m.

Institution of Civil Engineers. Students' Meeting. "The Liverpool-street Extension of the Central London Railway," by H. V. Hutt, B.Sc. 8 p.m.

Glasgow Architectural Craftsmen's Society. "The Great Church of Santa Sophia at Constantinople," by Professor C. Gourlay, B.Sc., A.R.I.B.A. 8 p.m.

A stained-glass window has been placed in All Saints' Church, Wolverhampton, in memory of Miss Oldacre. The window represents St. Cecilia.

Sir F. Carruthers Gould will open the Arts and Handicrafts Exhibition to be held by the Hampstead Tenants' Social Council in the Hampstead Garden Suburb early in December.

The Chairman of the L.C.C. Fire Brigade Committee (Mr. Fred H. Carter) opened on Wednesday night a gymnasium at the Northcote-road Fire Station, Battersea, which has been provided at a cost of £1,500. The gymnasium is the first of its kind to be provided in connection with a district fire-station.

Mr. F. H. Tulloch has held a public inquiry at Featherstone into the application of the Featherstone Urban District Council to the Local Government Board for sanction to borrow £5,806 for private street improvements in the North Stone-lane district. There was no opposition.

At a meeting of the town-planning committee of the Birmingham City Council, on Friday, Mr. F. O. C. Nash, chief engineering and town-planning assistant to the borough of Newcastle-on-Tyne, was appointed chief town-planning assistant in Birmingham, at a salary of £300 per annum.

Messrs. Swan, Hunter, and Richardson are lengthening their graving dock at Wallsend from 550ft. to 575ft., and adjoining it are constructing a second graving dock, 490ft. long, 87ft. wide inside 70ft. wide at entrance, and 24ft. 6in. deep over the sill. Both contracts are being executed by Messrs. Robert McAlpine and Sons, of Glasgow. The new dock walls will consist of 5 to 1 concrete, with granite quoins, cills, steps, and altars of granite chips.

The Delegacy of London University have appointed in succession to Dr. T. F. Sibly, appointed Professor of Geology at the University of South Wales, Cardiff, Mr. W. T. Gordon, M.A., D.Sc., F.R.S.E., as Lecturer and Head of the Geological Department. Mr. Gordon has been Lecturer in Palæontology and Assistant in Geology at the University of Edinburgh since 1910, and has made extensive researches in Palæobotany and some investigations in Stratigraphical Geology.

LATEST PRICES.

IRON.

Steel Joists, Belgian and German (ex steamer, London)	per ton	£6	2	6	to	£6	5	0
Steel Joists, English		7	10	0	,,	7	12	6
Wrought-Iron Girder Plates		7	0	0	,,	7	5	0
Steel Girder Plates		7	2	6	,,	8	2	6
Bar Iron, good Staffs		6	5	0	,,	8	10	0
Do., Lowmoor, Flat, Round, or Square		20	0	0	,,	0	0	0
Do., Welsh		5	15	0	,,	5	17	0
Boiler Plates, Iron—								
South Staffs		8	0	0	,,	8	15	0
Best Snedshill		9	0	0	,,	9	10	0

Angles 10s., Tees 20s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £8 15s to £9.
Ditto galvanised, £14 to £15 10s. per ton.

Galvanised Corrugated Sheet Iron—

	No. 18 to 20.	No. 22 to 24
6ft. to 8ft. long, inclusive	Per ton.	Per ton.
gauge	£13 0 0	£13 10 0
Best ditto	13 0 0	14 0 0

Wire Nails (Points de Paris)—

3 to 7	8	9	10	11	12	13	14	15	B.W.G
8/3	8 9	9/3	9/9	10/3	11/-	11/9	12/6	13/6	per cwt

	Per ton.				Per ton.		
Cast-Iron Columns	£7	10	0	to	£9	0	0
Cast-Iron Stanchions	7	10	0	,,	9	0	0
Rolled-Iron Fencing Wire	8	5	0	,,	8	10	0
Rolled-Steel Fencing Wire	7	5	0	,,	7	10	0
,, ,, ,, Galvanised	8	15	0	,,	9	5	0
Cast-Iron Sash Weights	5	0	0	,,	5	5	0
Cut Floor Brads	9	15	0	,,		—	
Corrugated Iron, 24 gauge	16	0	0	,,		—	
Galvanised Wire Strand, 7 ply, 14 B.W.G.	14	5	0	,,		—	

B.B. Drawn Telegraph Wire, Galvanised—

0 to 8	9	10	11	12	B.W.G.
£10 10s.	£10 15s.	£11 0s.	£11 5s.	£11 15s.	per ton.

Cast-Iron Socket Pipes—							
3in. diameter	£6	2	6	to	£6	7	0
4in. to 6in.	6	0	0	,,	6	5	0
7in. to 24in. (all sizes)	5	7	6	,,	6	0	0

[Coated with composition, 5s. 0d. per ton extra, turned and bored joints, 5s. 0d. per ton extra.]

Pig Iron—	Per ton.						
Cold Blast, Lilleshall	110s.	0d.	to	117s.	6d.		
Hot Blast, ditto	70s.	0d.	,,	75s.	0d.		

Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—

Gas-Tubes	75 p.c.
Water-Tubes	72½ ,,
Steam-Tubes	67½ ,,
Galvanised Gas-Tubes	65 ,,
Galvanised Water-Tubes	62½ ,,
Galvanised Steam-Tubes	57½ ,,

OTHER METALS.

Spelter, Silesian	Per ton	£20	12	6	to	£20	17	6
Lead Water Pipe, Town		23	0	0	,,		—	
,, ,, ,, Country		23	15	0	,,		—	
Lead Barrel Pipe, Town		24	0	0	,,		—	
,, ,, ,, Country		24	15	0	,,		—	
Lead Pipe, Tinned inside, Town		25	0	0	,,		—	
,, ,, ,, ,, Country		25	15	0	,,		—	
Lead Pipe, Tinned inside and outside ..... Town		27	10	0	,,		—	
,, ,, ,, ,, Country		28	5	0	,,		—	
Composition Gas-Pipe, Town		26	0	0	,,		—	
,, ,, Country		26	15	0	,,		—	
Lead Soil-pipe (up to 4½in.) Town		26	0	0	,,		—	
,, ,, ,, Country		26	15	0	,,		—	
[Over 4½in. £1 per ton extra.]								
Lead Shot, in 28lb. bags		24	15	0	,,		—	
Copper Sheets, sheathing & rods		86	0	0	,,	86	10	0
Copper, British Cake and Ingot		78	10	0	,,	79	0	0
Tin, English Ingots		183	0	0	,,	183	10	0
Do., Bars		184	0	0	,,	184	10	0
Pig Lead, in 1cwt. pigs (Town)		20	0	0	,,		—	
Sheet Lead, Town		22	10	0	,,		—	
,, ,, Country		23	5	0	,,		—	
Genuine White Lead		30	15	0	,,		—	
Refined Red Lead		25	0	0	,,		—	
Sheet Zinc		29	0	0	,,		—	
Old Lead, against account		17	10	0	,,		—	
Tin	per cwt.	10	5	0	,,		—	
Cut nails (per cwt. basis, ordinary brand		0	11	3	,,		—	

TIMBER.

CONSTRUCTIONAL.

Yellow Pine Deals, Quebec, per standard:—	1st quality	£38	0	0	to	£45	0	0
,, ,, ,,	2nd ,,	26	0	0	,,	32	0	0
,, ,, ,,	3rd ,,	16	0	0	,,	18	10	0
Spruce Deals: St. Johns		10	0	0	,,	11	10	0
,, ,, Miramichi		9	10	0	,,	10	10	0
,, Boards: Swag		11	0	0	,,	12	0	0
Red Deals: rchangel 1st quality		21	0	0	,,	24	0	0
,, ,, ,, 2nd ,,		16	0	0	,,	19	0	0
,, ,, ,, 3rd ,,		12	0	0	,,	14	0	0
,, ,, St. Petersburg—								
,, ,, ,, 1st quality		16	10	0	,,	18	0	0
,, ,, ,, 2nd ,,		14	10	0	,,	15	10	0
,, ,, Wyburg & Ulcaborg		12	10	0	,,	15	0	0
Gefle, Gothenburg, and Stockholm		12	10	0	,,	17	0	0
White Deals: Crown		14	0	0	,,	15	10	0
,, ,, Seconds		11	10	0	,,	13	0	0
Flooring: White and Planed—								
1st and 2nd quality mixed		10	15	0	,,	11	15	0
1st, 2nd, & 3rd quality mixed		10	5	0	,,	11	0	0
Red Planed, 1st quality		14	10	0	,,	17	0	0
Pitch Pine: Prime Deals and Boards		18	0	0	,,	23	0	0
Lignum Vitæ	Per ton	7	0	0	,,	14	0	0
	Per cubic foot.							
Yellow Pine Logs (waney board)		0	5	0	,,	0	5	6
Pitch Pine Logs		0	2	0	,,	0	2	6
Birch: Quebec Logs		0	2	3	,,	0	2	9
Oak: Austrian Wainscot		0	7	0	,,	0	8	0
Mahogany: Gaboon		0	2	0	,,	0	2	3

FURNITURE AND HARDWOODS.

Teak: Burmese, per load, 50ft.	£20	0	0	to	£25	0	0
Teak: Java, per load, 50ft.	16	0	0	,,	21	0	0
	Per cubic foot						
Oak Planks: U.S.A., imported	0	1	9	to	0	2	6
,, Boards ,, ,, Prm.	0	3	0	,,	0	3	6
,, ,, ,, ,, Mdm.	0	2	6	,,	0	2	9
Sequoia (Californian Redwood)	0	2	4	,,	0	3	6
Birch: Quebec logs	0	2	3	,,	0	2	9
,, ,, sawn planks	0	1	3	,,	0	2	0
Oak: Austrian Wainscot	0	7	0	,,	0	8	0
Walnut: Prime boards and planks	0	6	0	,,	0	6	6
Walnut: Mdm. ,, ,,	0	3	6	,,	0	4	6
Greenheart: Hewn logs	0	3	3	,,	0	4	0
Cedar: Cigar box	0	4	9	,,	0	5	6
Satin Walnut: Imp. sawn boards, prime	0	2	4	,,	0	2	9
Orham: Imp. sawn boards, prime	0	2	0	,,	0	2	3
Mahogany: St. Domingo, Cuba, and Honduras	0	6	0	,,	0	9	0
,, African, Assinee, &c.	0	5	0	,,	0	6	6
,, Lagos and Benin	0	4	6	,,	0	6	0
,, Sekondi and Cape Lopez	0	3	0	,,	0	4	0
,, Gaboon	0	2	0	,,	0	2	0
Satinwood: West Indian	0	10	0	,,	0	14	0
Rosewood	Per ton	8	0	0	,,	12	0	3
Lignum Vitæ	,,	7	0	0	,,	14	0	0

STONE.*

Red Mansfield, in blocks	per foot cube	£0	2	4
Darley Dale, ditto	,,	0	2	3
Red Corsehill, ditto	,,	0	2	9
Closeburn Red Freestone, ditto	,,	0	2	0
Ancaster, ditto	,,	0	1	10
Greenshill, ditto	,,	0	1	10
Chilmark, ditto (in truck at Nine Elms)	,,	0	1	10½
Hard York, ditto	,,	0	2	0
Ditto ditto 6in. sawn both sides, landings, random sizes	per foot sup.	0	2	8
Ditto ditto 3in. slab sawn two sides, random sizes	,,		1	3

* All F.O.R. London.

Bath Stone, delivered on road waggons, Paddington Depot	per foot cube	0	1	7½
Ditto, ditto, Nine Elms Depot	,,	0	1	9½
Beer Stone, delivered on rail at Seaton Station	,,	0	1	0
Ditto, delivered at Nine Elms Station	,,	0	1	6

Portland Stone, in random blocks of 20ft. average:—

	Brown Bed.	White Bed.	Base Bed
	Per foot cube.		
Delivered on road waggons at Paddington Depot, Nine Elms Depot, or Pimlico Wharf	£0 2 3	£0 2	4½

SLATES.

	in. in.	£	s.	d.	per 1,000 of
Blue Portmadoc	20×10	12	12	6	1,200 at r.stn.
,, ,,	16× 8	6	12	6	,, ,,
Blue Bangor	20×10	13	2	6	,, ,,
,, ,,	20×12	13	17	6	,, ,,
First quality	20×10	13	0	0	,, ,,
,, ,,	20×12	13	15	0	,, ,,
,, ,,	16× 8	7	5	0	,, ,,
Eureka unfading green	20×10	15	17	6	,, ,,
,, ,,	20×12	18	7	6	,, ,,
,, ,,	18×10	13	5	0	,, ,,
,, ,,	16× 8	10	5	0	,, ,,
Permanent green	20×10	11	12	6	,, ,,
,, ,,	18×10	9	12	6	,, ,,
,, ,,	16× 8	6	12	6	,, ,,

BRICKS.

(All prices net.)

First Hard Stocks	£1	15	0	per 1,000 alongside, in	
Second Hard Stocks	1	11	0	,,	,, (river.
Mild Stocks	1	9	0	,,	,, ,,
Picked Stocks for Facings	2	5	0	,,	delivered at rly. stn.
Flettons	1	10	0	,,	,, ,,
Pressed Wire Cuts	1	18	0	,,	,, ,,
Red Wire Cuts	1	14	0	,,	,, ,,
Best Fareham Red	3	12	0		,, ,,
Best Red Pressed Ruabon Facing	5	0	0	,,	,, ,,
Best Blue Pressed Staffordshire	3	15	0	,,	,, ,,
Ditto Bullnose	4	0	0		,, ,,
Best Stourbridge Firebricks	3	14	0	,,	,, ,,
2½in. Best Red Accrington Plastic Facing Bricks	4	10	6	,,	Net, delivered in full truck loads in London.
" Accrington Best Red Plastic Facing Bricks				per 1,000	£3 10 0
3½" ditto Second Best Plastic ditto					2 2 6
Ditto Ordinary Second Bricks					1 11 3
Ditto Plastic Engineering Bricks					1 17 6
Sewer Arch Brick not more than 3½" in thickest part					2 0 0
3½" Chimney Bricks fit for outside work					2 6 0
3½" ditto ditto through and through					2 0 0
3½" Beaded, Ovolo and Bevel Jambs; Octagons; 2½" and 3" radius Bullnoses; Stock patterns					3 7 6
Accrington Air Bricks, 9"×2 course deep, each					0 0 6
Ditto ditto 9"×1 course				,,	0 0 3

Accrington Camber Arches:—

3 course deep, 4½" soffit, per foot opening						0	1 3
4	ditto	4½"	ditto	ditto	ditto	0	1 8
5	ditto	4½"	ditto	ditto	ditto	0	2 1
6	ditto	4½"	ditto	ditto	ditto	0	2 6
3	ditto	9"	ditto	ditto	ditto	0	2 1
4	ditto	9"	ditto	ditto	ditto	0	2 11
5	ditto	9"	ditto	ditto	ditto	0	3 9
6	ditto	9"	ditto	ditto	ditto	0	4 6

Net free on rail or free on boat at works.

GLAZED BRICKS.

HARD GLAZES, (PER 1,000.)

	White, Ivory, and Salt Glazed. Best.	Seconds.	Buff, Cream, & Bronze. Other Colours.		Second Colours.
Stretchers—	£13 7 6	£10 17 6	£13 17 6	£17 17 6	£12 7 6
Headers—	11 17 6	10 7 6	13 7 6	17 7 6	11 17 6
Quoins, Bullnose, and 4½in. Flats—	15 17 6	14 17 6	17 17 6	21 7 6	15 17 6
Double Stretchers—	17 17 6	16 7 6	20 17 6	24 7 6	17 17 6
Double Headers—	14 17 6	13 7 6	17 17 6	21 7 6	14 17 6
One side and two ends, square—	18 17 6	17 7 6	21 17 6	26 7 6	18 17 6
Two sides and one end, square—	19 17 6	18 7 6	22 17 6	26 17 6	19 17 6
Splays and Squints—	17 7 6	15 17 6	21 17 6	24 17 6	17 7 6
Plinth and Hollow Bricks.	5d. each	4d. each	6d. each	6d. each	5d. each
Stretchers and Headers—					
Double Bullnose, Round Ends, Bullnose Stops—	5d. each	4d. each	6d. each	6d. each	5d. each
Rounded Internal Angles—	4d. each	3d. each	5d. each	5d. each	4d. each

MOULDED BRICKS.

Stretchers and Headers—	8d. each	8d. each	8d. each	8d. each
Internal and External Angles—	1/2 each	1/2 each	1/2 each	1/2 each
Cill Bullnose, Stretchers and Headers—	5d. each	4d. each	6d. each	6d. each
Majolica or Soft Glazed Stretchers and Headers				Per 1,000 £22 17 6
" Quoins and Bullnose				27 17 6
Compass bricks, circular and arch bricks of single radius £6 per 1,000 over above list for their respective kinds and colours				Not exceeding 9in.
Camber arch bricks, any kind or colour, 1s. 2d. each				by 4½in. by 2½in.

Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.

* These prices are carriage paid in full truck loads to London Stations.

	s.	d.		
Thames Sand	7	6	per yard,	delivered
Pit Sand	7	0	"	"
Thames Ballast	6	0	"	"

	s.	d.		s.	d.	
Best Portland Cement	36	0	to	41	0	per ton, delivered
Ground Blue Lias Lime	21	0	per ton delivered.			

Exclusive of charge for sacks.

	s.	d.		s.	d.	
Grey Stone Lime	13	6	to	14	0	per yard, delivered
Stourbridge Fireclay in sacks	27s. 0d. per ton at railway station.					

TILES.

	s.	d.		Dlvrd. at
Plain red roofing tiles	42	0	per 1000	ry. stn.
Hip and Valley tiles	3	7	per doz.	" "
Broseley tiles	50	0	per 1000	" "
Ornamental tiles	52	6	"	" "
Hip and Valley tiles	4	0	per doz.	" "
Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000	" "
Ornamental do.	60	0	"	" "
Hip tiles	4	0	per doz.	" "
Valley tiles	3	0	"	" "
Selected "Perfecta" roofing tiles:—Plain tiles (Peake's)	46	0	per 1000	" "
Ornamental do.	48	6	"	" "
Hip tiles	3	10½	per doz.	" "
Valley tiles	3	4½	"	" "
"Rosemary" brand plain tiles	48	0	per 1000	" "
Ornamental tiles	50	0	"	" "
Hip tiles	4	0	per doz.	" "
Valley tiles	3	8	"	" "
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000	" "
Hand-made sand-faced	45	0	"	" "
Hip tiles	4	0	per doz.	" "
Valley tiles	3	6	"	" "
Hartshill" brand plain tiles, sand-faced	50	0	per 1000	" "
Pressed	47	6	"	" "
Ornamental do.	50	0	"	" "
Hip tiles	4	0	per doz.	" "
alley tiles	3	6		" "

OILS.

Rapeseed, English pale,	per tun	£28	15	0 to	£29	5 0
Do., brown	"	26	15	0 "	27	5 0
Cottonseed, refined	"	29	0	0 "	30	0 0
Olive, Spanish	"	39	10	0 "	40	0 0
Seal, pale	"	21	0	0 "	21	10 0
Cocoanut, Cochin	"	46	0	0 "	46	10 0
Do., Ceylon	"	42	10	0 "	43	0 0
Do., Mauritius	"	42	10	0 "	43	0 0
Palm, Lagos	"	32	5	0 "	33	5 0
Do. Nut Kernel	"	35	0	0 "	35	10 0
Oleine	"	17	5	0 "	19	5 0
Sperm	"	30	0	0 "	31	0 0
Lubricating U.S.	per gal,	0	7	0 "	0	8 0
Petroleum refined	"	0	0	6½ "	0	0 6½
Tar, Stockholm	per barrel	1	6	0 "	1	10 0
Do., Archangel	"	0	19	6 "	1	0 0
Linseed Oil	per gal.	0	2	3½ "		—
Baltic Oil	"	0	2	6 "		—
Turpentine	"	0	2	9½ "		—
Putty (Genuine Linseed Oil)	per cwt.	0	9	0 "		—
Pure Linseed Oil "Stority" Brand	"	0	10	0 "		—

GLASS (IN CRATES).

	15oz.	21oz.	26oz.	32oz.
English Sheet Glass:				
Fourths	2d.	3d.	3½d.	4½d.
Thirds	2½d.	3½d.	4½d.	5½d.
Fluted Sheet	2½d.	3½d.	6½d.	7d.
Hartley's English Rolled Plate:	¼in.	3/16in.	⅜in.	½in.
	2½d.	2½d.	3d.	3d.

Figured Rolled and Repoussine White. 3½d. Tinted 5d.

VARNISHES, &c.

	Per gallon.
Fine Pale Oak Varnish	£0 8 0
Pale Copal Oak	0 10 0
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of churches	0 14 0
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flatting Varnish	0 18 9
White Copal Enamel	1 4 0
Extra Pale Paper	0 12 9
Best Japan Gold Size	0 10 9
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 0

TRADE NOTES.

The "Boyle" system of Ventilation (naturall, embracing Boyle's latest patent "air-pump" ventilators and air-inlets, has been applied to the Picture Theatre, Kirkby-in-Ashfield.

The Meiod National Schools are being supplied with Shorland's warm-air ventilating patent: Manchester stoves by Messrs. E. H. Shorland and Brother, Ltd., of Failsworth, Manchester.

The architect for the extensions to the Epileptic Hospital for Manchester and District at Whalley, near Accrington, has specified the powder "Pudlo" to be used with the cement on the roughcast walls of the institution.

Mr. George A. Lansdown, F.R.I.B.A., architect, 9, Regent-street, Waterloo-place, has admitted into partnership Mr. Wm. E. A. Brown, A.R.I.B.A., M.C.I., who has been with him for the past 21 years, and the practice will in future be carried on under the title of George Lansdown and Brown, at the same address.

A memorial tablet to the late Admiral Sir Harry Rawson has been placed in the crypt of St. Paul's Cathedral, and will shortly be unveiled.

Aberdeen Town Council will include in the Provisional Order to be applied for next session, powers to widen St. Nicholas-street, and also to borrow £20,000 for the purpose of defraying the cost of repaving or recausewaying streets within the city.

The town council of Nairn are applying for a provisional order to reconstruct the east pier, and to build a sea-wall at the harbour, at an estimated cost of £23,000. Of this sum, the Development Commissioners will give £7,000, and lend another £9,000.

During blasting operations for the foundation of a new barracks for the fire-brigade at Meneghetti, Monaco, a cavity, probably an ancient tomb, was unearthed, in which fragments of an amphora, a bronze vase, an earthenware lamp, and the débris of glass ampullæ, probably used for holding perfumes, together with other small articles, and a marble slab bearing an inscription in Latin, were found.

A meeting of the Hexham Urban District Council was held on Monday night, for the purpose of appointing a surveyor, sanitary inspector, and superintendent of the cemetery, in place of Mr. George L. Murray, who has resigned on receiving an appointment at Somerset Strand, near to Capetown. Out of 98 applicants for the post, the council had selected six to appear personally before them. They were all present, and, after being interrogated, the appointment was given to Mr. C. F. Moorhouse, at present surveyor of Rothwell, near Leeds.

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TENDERS.

*** Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

ASHCHURCH.—For laying water-mains extension at Ashchurch, for the Tewkesbury Rural District Council:—

Hemming Bros., Swansea	£2,778 10 0
Saunders and Son, Cirencester	2,370 0 0
Jukes and Co., Tipton	2,292 4 7
Walker and Sons, Tewkesbury	2,223 0 0
Riley, Cheltenham	2,198 19 1
Armstead, Chorlton	1,952 8 7
Emery and Co., Aston	1,888 1 0
Kearsley & Son, Leigh (accepted)	1,701 11 9

BALHAM, S.W. — For the erection of an elementary school for 996 children in Balham High-road, for the London County Council:—

Thomas and Edge, Woolwich	£23,890 0 0
Garrett, J., and Son, Balham Hill	23,790 0 0
Bowyer, J. and C., Ltd., Upper Norwood	22,966 0 0
Downs, W., Walworth	22,497 0 0
Wallis, G. E., & Sons, Ltd., Panton-street, Haymarket*	22,268 0 0

Architect's estimate, £22,971.
* Recommended for acceptance.

BASFORD.—For making-up two streets, for the rural district council. Mr. G. W. Hawley, surveyor:—

Smart, T.	£1,230 0 0
Sykes, A.	1,199 0 0
Lewin, J., Netherfield	1,066 0 0
Greenwood, J., Mansfield	981 0 0
Somerfield, E.	954 0 0
Belshaw, G.	933 0 0
Raynor, A. and C. (accepted)	906 0 0

(Rest of Nottingham.)

BEDHAMPTON.—For erection of a detached house, and for laying about 1,500ft. of subsoil drainage at Bedhampton, Havant. Messrs. Wakeford and Ross, A.I.S.E., Cosham, Hants, architects and surveyors:—

Lown, L., and Co., Holloway, N.	£1,215 0 0
Gregory, J., & Son, Southbourne	1,153 0 0
Croad, J., Portsmouth	1,152 10 0
Scadjell and Son, Emsworth	1,097 14 10
Draper, T., Fareham	1,080 0 0
Sandell, F., and Sons, Worthing	1,064 10 0
Edwards, J., & Son, Waterlooville	970 0 0
Hobbs, Bros., Havant	943 0 0
Munday, H., Havant	896 15 0
Clear, A. H., Purbrook (accepted)	814 10 0

BRACKLEY.—For alterations to heating apparatus at the workhouse, for the guardians:—

Maule and Son, Banbury	£293 15 0

(Accepted.)

BROMLEY.—For construction of a wash-house at the able-bodied test house, for the board of guardians:—

Pearce Bros.	£250 0 0
Graty, W., East-street	231 0 0
Lown and Co., Holloway	211 0 0
Peddle, E., West Norwood	206 0 0
Podger and Sons	206 0 0
Woodhams and Sons (accepted)	189 0 0

Rest of Bromley.

BROMLEY.—For provision of fittings at the general store, for the board of guardians:—

Pearce Bros.	£361 0 0
Peddle, E., West Norwood	298 0 0
Podger and Sons	298 0 0
Graty, W.	293 0 0
Woodhams and Sons	279 0 0
Lown and Co., Holloway*	260 0 0

(Rest of Bromley.)
* Accepted.

CROMWELL, NEAR NEWARK.—For the restoration of the tower, also new vestry at Cromwell Church, near Newark. Messrs. Sheppard and Lockton, Bargate, Newark, architects:—

Shelborne, H., Newark	£353 7 0
Moss and Sons, Loughborough	345 5 10
Brown and Sons, Newark	333 10 0
Smith, W., Newark (accepted)	297 0 0

Architect's estimate, £350.

ELTHAM.—For the supply of bureaux to the new hostel at Avery Hill Training College, for the London County Council:—

Simpson & Sons, Ltd. (accepted)	£442 0 0

(Eight tenders received.)

LETCHWORTH.—For erecting Wesleyan Church, &c. Messrs. George Baines and Son, 5, Clements Inn, Strand, W.C., architects:—

Roome, E. A., and Co.	£6,600 0 0
Newton, F.	6,199 0 0
Collins, A.	6,127 0 0
Beckley and Turpie	6,125 0 0
Willmott, J., and Sons	6,355 0 0
Battley Sons and Holness	5,951 0 0
Dorey, J., and Co., Ltd.	5,926 0 0
Hurst, H.	5,896 0 0
Goddard and Sons	5,890 0 0
Openshaw and Co.	5,850 0 0
Souster, W., and Son	5,750 0 0
Brightman and Sons, Ltd.*	5,687 0 0

* Accepted with modifications.

LONDON. — For the supply of 12 tons of standard flanged tread plate, for the London County Council:—

Billingham, J., Cradley Heath	£198 18 0

(Accepted.)

LONDON. — For the erection of conveniences and a shelter at Northbrook Park, for the London County Council:—

Bickerton, W., Catford, S.E.	£628 0 0
Pollock, W. Eltham	470 0 0
Bailey, W., East Greenwich, S.E.*	456 0 0

Architect's estimate, £484.
* Recommended for acceptance.

(*Continued on page XII.*)

LIST OF COMPETITIONS OPEN.

Nov.	29—Band Pavilion, West Cliff, Folkestone (limit of cost £20,000). (Edwin T. Hall, F.R.I.B.A., 34, Bedford-square, W.C., Assessor)	.....	A. F. Kidson, Town Clerk, Folkestone.
Dec.	1—Water Supply, Beverloo Limburg	.....	Commandant du Genie, Camp de Beverloo, Limburg, Belgium.
,,	29—New Offices for Board of Trade, Whitehall Gardens, S.W. [R. Blomfield, M.A. (Oxon), A.R.A., P.R.I.B.A. J. Belcher, R.A., and Sir Aston Webb, C.V.O., C.B., R.A., Assessors] Sketch Designs, ten will be Selected,		
1914.	with £300 Honorarium each	.....	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
Jan.	2—Manchester Royal Exchange. Additional New Buildings and Alterations. Open to all architects in U.K. Not more than 12 architects of repute have been specially invited; each of whom will receive one hundred guineas. The three selected architects will receive one hundred guineas each. Author of design placed first will be appointed. (J. S. Gibson, F.R.I.B.A., Assessor)	.....	Rich. J. Allen, Master, Royal Exchange, Manchester.
,,	20—Masonic Temple, Toronto (Estimated cost, about £51,400)	Five unsuccessful competitors to receive 750dol., 500dol., and 250dol. respectively	W. H. Best, 181, Avenue-road, Toronto.
Feb.	1—Municipal Technical Institute, Pool Meadow, Coventry	.....	G. Sutton, Clerk, Education Office, 44, Bayley-lane, Coventry.
,,	15—Savings Bank, Verona (Five Assessors)	£1,200, £600	The Savings Bank, 1, Via Garibaldi, Verona.
Mar.	20—Public Museum and Art Gallery, Belfast (John J. Burnet, A.R.S.A., LL.D., Assessor)	Selected Architect to carry out work; second, £100; third, £75; fourth, £50	R. Meyer, Town Clerk, City Hall, Belfast.
April	2—Departmental and Courts Buildings, Ottawa (T. E. Collcutt, J. H. G. Russell, and J. O. Marchand, Assessors). Double Competition, five unsuccessful competitors in second to receive 3,000dol. each	.....	R. C. Desrochers, Department of Public Works, Ottawa, Ont.
No date.	—New Secondary School, City of Bath (Henry T. Hare, F.R.I.B.A., Assessor)	.....	F. D. Wardle, Town Clerk, Guildhall, Bath.
do.	—Defective Children's School, Glake Hall, near Durham	.....	The Clerk, County Education Committee, Shire Hall, Durham.
do.	—Clock Tower, Queen's Park, Cost (including Clock), £1,000	.....	H. Talbot, Clerk, Town Hall, Brighton.

LIST OF TENDERS OPEN.

BUILDINGS.

Nov.	28—Drill Hall, Wavertree, Liverpool	West Lancs Terr. Force Assoc.	J. C. Walker, Archt., Westminster Chambers, Liverpool.
,,	28—No. 89, Eccles Old-rd., Structural Repairs to, Pendleton	Guardians	F. Townson, Clerk, Eccles New-road, Salford.
,,	28—School (120 places), Messing, Essex	Lexden and Winstree Sub-Com.	F. Whitmore, County Archt., 73, Duke-street, Chelmsford.
,,	28—School, Alterations to, West Fountainbridge, Edinburgh	School Board	J. Stewart, S.S.C., Clerk, School Board Offices, Edinburgh.
,,	28—Drill-hall, Wellington-road, Wavertree, Liverpool	West Lancs Terr. Force Assoc.	J. C. Walker, Westminster Chambers, Liverpool.
,,	28—Lunatic Asylum, Woensel, Holland	.....	The Clerk, Prov. Authorities of Noordbrabant, Hertogenbosch.
,,	28—Presbytery, Balgerhoeke-Eecloo	.....	M. Geirnaert, Archt., 26, Ottogracht, Ghent.
,,	29—Sarum-hill School, Alterations to, Basingstoke	Hampshire County Council	A. L. Roberts, Archt., The Castle, Winchester.
,,	29—Workhouse, Repairs to, Towcester	Guardians	Jackson, Stops, and Co., Towcester.
,,	29—School, Extensions to, Aberdour, Fife	School Board	C. Scott Gullen, Archt., Aberdour, Fife.
,,	29—Bungalow, Aberporth	J. T. Davies, Barry	T. J. Williams, Archt., Napier-street, Cardigan.
,,	30—Central Post Depot, Malines, Brussels	.....	Hotel des Postes, Place de la Monnaie, Malines, Brussels.
Dec.	1—Houses and Farm Buildings, Ridley Estate, Nantwich	.....	W. H. Lancaster, Land Agent, 49, Northgate-street, Chester.
,,	1—School, Trefelin, near Aberavon	Glamorgan County Council	The Architect, County Hall, Cardiff.
,,	1—Liberal Club, Additions to, Spondon	.....	F. S. Antliff and Son, Draycott, near Derby.
,,	1—Garrick Inn, Additions at, High-street, Stratford-on-Avon	Town Council	R. Dixon, Boro' Sur., Municipal Offices, Stratford-on-Avon.
,,	1—Cemetery Chapel, Burnley	.....	G. H. Pickles, M.I.C.E., Boro' Eng., Town Hall, Burnley.
,,	1—Electricity Sub-station, Queensgate, Burnley	.....	G. H. Pickles, M.I.C.E., Boro' Eng., Town Hall, Burnley.
,,	1—School, Repairs to, Brithdir	Glamorgan County Council	The Architect, County Hall, Cardiff.
,,	1—Isolation Hospital, Additions to, Billericay	Rural District Council	H. R. Bird, St. Thomas's Gate, Brentwood.
,,	1—School, Manual Instruction Centre at, Blaenllynfi	Glamorgan County Council	The Architect, County Hall, Cardiff.
,,	1—School Buildings, Repairs to (Two Years), Nottingham	Education Committee	A. Dale, City Architect, Guildhall, Nottingham.
,,	1—Properties, Minor Repairs (Two Years), Nottingham	Estates Committee	W. Smith, Estates Sur., Guildhall, Nottingham.
,,	1—Pavilion and Laying Out Belle Vue Garden, Penarth	Urban District Council	E. I. Evans, A.M.I.C.E., Sur., Council Offices, Penarth.
,,	1—Langside Library, Glasgow	Corporation	J. Lindsay, Town Clerk, City Chambers, Glasgow.
,,	1—Rectory, Newtownbutler	.....	J. Potts, C.E., Greenbank, Clones, Newtownbutler.
,,	1—Schools, Various Towns, Hayti	.....	Departement de l'Instruction Publique, Port-au-Prnce, Hayti.
,,	1—Cottage, Veal Down, Bridestowe	.....	Barclay Perkins, Archt., 33, Emma-place, Stonehouse, Plymouth.
,,	1—Workhouse, Additions to, Kingston-on-Thames	Guardians	C. W. Dash, Clerk, Coombe-road, Kingston-on-Thames.
,,	1—Residence, Heaton, Bradford	.....	A. G. Adkin, Archt., Bank-street, Bradford.
,,	1—Infants' School, Heating Chamber at, Bargoed	Glamorgan County Council	The Architect, County Hall, Cardiff.
,,	2—Nurses' Home, Workhouse, Pontefract	Guardians	Garside and Pennington, Archts., Pontefract.
,,	2—Workhouse, Additions to, West Didsbury, Manchester	Guardians	F. H. Overmann, F.M.S.A., 49, King-street, Manchester.
,,	2—Fire Station, Additions to, King-street, Wakefield	Corporation	A. C. Allibone, Town Clerk, Town Hall, Wakefield.
,,	2—Working-class Cottages, Combs, Old Newton, & Wetherden	East Stow Rural District Council	H. H. Simon, Stowmarket.
,,	2—Hospital, Extending Admin. Block at, South Ealing	Town Council	W. R. Hicks, A.M.I.C.E., Boro' Eng., Town Hall, Ealing, W.
,,	2—Lecture Hall, Staff College, Camberley	Secretary of State for War	The Director of Army Contracts, War Office, S.W.
,,	2—Workhouse Hospital, Alterations to, Ashton-under-Lyne	Guardians	J. Eaton, Sons, and Cantrell, Archts., Ashton-under-Lyne.
,,	2—Two Shelter Seats upon Parade, Hastings	Corporation	P. H. Palmer, M.I.C.E., Boro' Eng., Town Hall, Hastings.
,,	2—Quarters for Officials, Ixelles, Brussels	.....	The Secretariat des Hospices, Brussels.
,,	2—Workhouse Infirmary Roof, Reslating, Aylsham	Guardians	H. J. Gidney, Clerk, Aylsham.
,,	3—School, Wiggenhall St. Mary Magdalen	Norfolk Education Committee	J. E. Burton, Archt., Victoria Chambers, Bank Plain, Norwich.
,,	3—Hospital, Covered Ways at, Conway	Joint Hospital Board	T. B. Farrington and Son, Archts., Trinity-square, Llandudno.
,,	3—Workhouse, Buildings at, Pleck-road, Walsall	Guardians	H. E. Lavender and Son, Archts., Bridge-street, Walsall.
,,	4—Swimming Bath, Western Esplanade, Southend-on-Sea	Corporation	E. J. Elford, M.I.C.E., Clarence-road, Southend-on-Sea.
,,	4—Two Shops and One House, St. Thomas's-rd., Huddersfield	Corporation	K. F. Campbell, M.I.C.E., Boro' Eng., 1, Peel-st., Huddersfield.
,,	4—Star Rooms, Alterations to, Springfield-rd., Southborough	Kent Education Committee	W. H. Robinson, Archt., Sessions House, Maidstone.
,,	5—Independent Chapel, Alterations to, Bryn	.....	D. J. Jones, M.S.A., Talbot-road, Port Talbot.
,,	5—Special Subjects Building, Edenbridge	Kent Education Committee	M. H. Robinson, M.S.A., Archt., Sessions, House, Maidstone.
,,	5—Farm Buildings, Additions to, Bushton, Cliff Pypard	Wilts County Council	J. George Powell, County Sur., Trowbridge.
,,	5—Bowling Green Shelter, Walker-rd., Newcastle-on-Tyne	Town Moor Committee	The City Engineer, Town Hall, Newcastle-on-Tyne.
,,	5—Corner House, Alterations to, Dowlais	Giles and Harrap	C. M. Davies, M.S.A., 112, High-street, Merthyr.
,,	5—Boiler House at Schools, Evelyn-street, Warrington	Education Committee	The Borough Surveyor, Town Hall, Warrington.
,,	5—Outbuildings, Westwood, near Trowbridge	Wilts County Council	J. G. Powell, County Sur., Trowbridge.
,,	5—Independent Chapel, Alterations to, Llanelly	.....	D. J. Jones, M.S.A., Talbot-road, Port Talbot.
,,	5—School, Rue de la Paille, Brussels	.....	College des Bourgmestre et Echevins, Ville de Bruxelles.
,,	6—Two Cottages, Withycombe, Tedburn St. Mary	.....	J. B. Mann Withycombe.
,,	6—Ebenezer Chapel, Rebuilding, Cefn-Coed	.....	C. M. Davies, M.S.A., 112, High-street, Merthyr Tydfil.
,,	6—School Extension, Camborne	Cornwall Education Committee	S. Hill, Archt., Green-lane, Redruth.
,,	6—Debt Control Offices, Casablanca, Morocco	.....	President de la Commission, Dar En Niaba, Tangier.
,,	8—Primitive Methodist Church, Oakdale Village, Blackwood	.....	A. F. Webb, M.S.A., Blackwood, Mon.
,,	8—Buildings for Slab-Making Plant, Mortlake	Barnes Urban District Council	G. B. Tomes, A.M.I.C.E., Sur., High-street, Mortlake, S.W.
,,	8—Pairs of Cottages for Enginemen, Bath	Corporation	W. H. Radford, C.E., Albion Chambers, King-st., Nottingham.
,,	8—Artisans' Dwellings (16), Chobham	Chertsey Rural District Council	H. E. Paine, Clerk, 80, Guildford-street, Chertsey.
,,	8—Repairs to Buildings (Three Years), Greenock	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
,,	8—Eastover Council School, Various Works, Bridgwater	Borough Education Authority	F. Parr, A.M.I.C.E., Boro' Sur., Mun. Bldgs., Bridgwater.
,,	8—Repairs to Buildings (Three Years), Edinburgh	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
,,	8—Repairs to Buildings (Three Years), Glasgow	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
,,	8—Farm Buildings, Mainey Estate, Heysby	.....	W. H. Lancaster, Land Agent, 19, Northgate-street, Chester.
,,	8—Repairs to Buildings (Three Years), Aberdeen	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
,,	8—Repairs to Buildings (Three Years), Stirling	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
,,	9—Tuberculosis Pavilion, Chester	Corporation	J. H. Dickson, Town Clerk, Town Hall, Chester.
,,	9—Infants School (150 places), East Hetton	Durham County Education Dept.	W. Rushworth, Archt., Shire Hall, Durham.
,,	9—Goods Offices, Birmingham	Great Western Railway Co.	The Resident Engineer, Snow Hill, Birmingham.
,,	9—Adapting Labour Exchange, Doncaster	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
,,	9—Bandstand, Park-lane, Wembley	Urban District Council	C. R. W. Chapman, Eng., Public Offices, Wembley.
,,	12—Semi-Detached Houses (200), Blaenrhondda	Fernhill Garden Village, Ltd.	W. B. Rees, Archt., 3, Dumfries-place, Cardiff.
,,	13—Two Cottages, Ironmonger-road, Tenterden	Town Council	W. L. C. Turner, Boro' Sur., Town Hall, Tenterden.
,,	13—Council School, Alterations and Additions to, Headcorn	Kent Education Committee	W. H. Robinson, Archt., Sessions House, Maidstone.

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THE BUILDING NEWS

AND ENGINEERING JOURNAL.

Effingham House, Strand, W.C.

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University College, University of London (Architectural School), Gower-street Buildings. View and plans. Professor F. M. Simpson, F.R.I.B.A., Architect.

Central Fire-Station, Barrow-in-Furness. Views, elevations, and plans. Mr. Arthur Rice, Borough Engineer, Architect.

King's College Entrance and Fountain Court, Trinity College, Cambridge. Royal College of Art Sketch Club "Club Prize" Set of Sketches in Black and White by Mr. W. M. Keesey, A.R.C.A.

Pembroke Buildings, Cambrian Place, Swansea. Mr. H. C. Portsmouth, M.S.A., Architect.

PALLADIO.

The star of Palladio loomed on our horizon over a decade ago, and as it is still in the Ascendant, we may, before its Declination sets in, as it surely will, speculate on its appearance in our latitude, and endeavour in some way to account for its rapid motion across the sky. Palladio was a star in our firmament before; that is, when Classic architecture was introduced by Jones and Wren; but he was eclipsed by them at the time, and there were no institutes, associations, or professors to clear away the shadows which obscured his presence, as there are at present. When art and construction were inseparable, as in the Middle Ages, called also the "dark ages," though apparently there was light enough to build well, ancient art-forms were not selected and applied to ecclesiastical or other buildings indiscriminately, so that these Mediæval workers were not reckoned as "stars" in their profession, nor did they recognise as stars any of their fellow-workers who were masons and carpenters, and nothing more. The age of star architects set in with the decay of Freemasonry and the advent of the Renaissance, and not one of the authors of that art-revival were architects; they were either stonemasons, like Palladio, or sculptors like Bruneleschi. As soon as the success of this movement was assured, the differentiation of the architect, as distinguished from the chief workman, was complete, the mason becoming a tradesman, and those who made designs for him being architects. The work on which Palladio was engaged brought no inspiration with it, the feeling for art-forms to be imposed by him on the material in which he worked was dead, his soul yearned after patterns to guide him, so he sought in Roman work that inspiration which was denied him at home. Like others who went before him on the same path, he soon found that the best examples Rome could afford were hopelessly obsolete, and of no value except as archæological curiosities, until they had undergone such a radical change as would bring them in line with the advanced civilisation of his time. He therefore copied Roman buildings with the greatest accuracy, and he adapted forms which were reminiscent of the Cæsars for his clients' buildings, and for the gratification of his own fancy. No art progress is possible when men take up architectural forms knowing little, and caring less, about the relations of such forms to constructive use, and perhaps knowing nothing at all of construction itself; or who, if they do know it, deliberately set its principles aside, that it may not hamper them in giving "abandon" to their work.

Really, there are no principles to be traced in much of our modern work. In some cases, for instance, the proper covering for a door or window opening is a brick arch with voussoirs regularly struck from a centre, or it may be a stone lintel spanning the opening from jamb to jamb; but what excuse is there for taking a lintel, cutting it into bits, and keying it, or for making skewbacks of a few pieces of stone cut specially to look like bricks, that these may, in their turn, carry sections of the lintel which has been cut up for the purpose? A striving after an originality consisting solely in adopting and altering architectural forms which did duty in buildings centuries old is one of the weaknesses of the present day. Classic men assure us that to the sacred architecture of the Greeks, as exhibited in their temples, whether at Athens or at Pæstum, we are indebted for the purest and best canons of architecture that the world has ever seen, and that when the Romans copied the Greeks they invariably misrepresented them. Roman buildings were considered, by architects who studied Greek work, to be as frivolously rich in ornament as they were poor in imitation, and one of the best Roman examples, that of the Temple of Concord at Rome, was declared to be an expensive barbarism. What Palladio's work would be like after inspiring draughts from such a fountain may be easily guessed, and that he came to adopt what were, for his time, unmeaning forms, and combine others which had meaning in other time and at other places, but were incongruous with him, is very evident from his work. The Greeks never placed one order over another. Where, as in the temple of Poseidon at Pæstum, there are two ranges of columns internally one over the other, both are Doric. The Romans would not have been content with such an arrangement; they would have the upper row Ionic. The desire to select some style of architecture and build in it was a feeling wholly unknown to the masons of the Middle Ages; they were the architects of the time, and until Bernini, Bruneleschi, Palladio, and others sketched existing buildings and originated the habit of basing designs on their sketches, such a system of architecture was never thought of, much less practised. The Romans were more akin to civil engineers than to the old architects; they were as great admirers of vastness as many of our fellow-craftsmen across the Atlantic: hence they left great monuments which were quarries for the Popes who aimed at making Papal Rome the mistress of the whole Christian Church, as its prototype, Pagan Rome, had been of almost the whole of the known world. Palladio was born early in the sixteenth century, and that fifteen hundred years should have elapsed since the architectural forms he studied were instinct with life, but were dead in his time, and that the ideas they embodied were those of a nation long passed away, never occurred to him when he set about his revival; but it, like others that we know of, had, and will have, their day. To revive any style is an impossibility. When we attempt it, we indulge in arbitrary and eccentric designs for work in which there is no principle of growth, and which soon becomes a thing of the past—to imitate any building, or buildings, in their shape or detail, is not to revive a style, though we may have thought so. A revival or Renaissance of any style amounts simply to this: It enables the living architect to design, by means of his brethren long since deceased. For more than half our modern work is nothing more than what was designed by Italians long since gone over to the great majority. The architecture of Palladio's tutors, that of the Romans, was strongly influenced by that of the Etruscans, who, unfortunately, built a great part of their temples in wood, so that none of them have survived to our time; and we know of them only through Classical writers. Etruscan vaulting was effected by the gradual gathering in of horizontal courses; and this is strange, because the gateways of Perugia and Volterra show that their people knew how to build an arch with stones wedge-shaped, and radiating from a centre. In fact, competent authorities assert that it was the Etruscans who invented the arch, and thus a magnificent development of architecture was made possible. Though Greek forms swept away all trace of Etruscan influence at Rome, Roman architects never lost sight of the arch, which they developed until they arrived at the vault, and, finally, the dome. They also popularised building in bricks—which were for ages only sun-dried. Euryalus is supposed to have invented them; but, as he is a mythical personage, as well as his partner Hyperbius, we need not give credit to the statement. It is probable, however, that they were first made at Athens, and that they were used solely in private buildings.

The Romans were the first to burn bricks, and they carried the art into every country they invaded, including our own, as may be seen at St. Albans and various other places. They also made bull-nosed bricks,

flat roofing tiles and others, semi cylindrical or semi-conical, to cover the joints of the flat tiles. At Bridgewater, to-day, tiles are made which, from imitating these, are known as Roman tiles. The Greeks had only three Orders of Architecture, and the Romans extended that to five; apart from Decoration, the chief difference between them is in the proportion that the entablature bears to the column in each case. The Tuscan order is supposed to be severe; the Doric, simple; the Ionic, elegant; the Corinthian, light; the Composite, gay; and all beautiful in their proportions from their expression of fitness for the support of the imposed weight. The Tuscan order is a degenerate form of Doric. It may be seen at its best on the west side of Covent Garden Market, where Inigo Jones spanned the pavement with a portico of that order: and the Composite capital is only Corinthian with the Ionic set on it under the abacus. From what we have said, it is obvious that what Palladio studied at Rome was really Greek and Etruscan work, as interpreted and developed by Roman engineers, and he is candid enough to acknowledge that he took Vitruvius for his guide and instructor, he being the only writer whose works have been preserved to us on that subject. The ruins of Rome he found "amusing," and worthy of attention, so he measured them with the utmost accuracy and application. Palladio, like our Brandon, was possessed by a dæmon or genius of enthusiasm, and he entered on the study of Christian churches with as much vigour, as much energy, and as much resolution as the others took up that of Pagan temples. We might name another great enthusiast who shot through the weft of his architecture with the warp of his archæology; but, if we did, we would find ourselves face to face with a difficulty which we will explain. He held that no work of high art, he meant Gothic art—could be produced by anyone not within the pale of the Roman Catholic church. Now, if this is true, it follows that no work of high Classic art can be produced by anyone who does not worship Jupiter, Diana, Mars, and other deities to which the Roman temples were dedicated; and we think it would be difficult to find such a one at present. The public religion of the Romans was the sole property of the Patricians in early times, and the lower orders were only allowed to worship the gods in private, so that, according to this theory, our architect, to be fully quaified to deal with "the Five Orders," should be a noble, and a Pagan priest; but we do not think that any of our professional brethren who are so skilful in the rearrangement of columns, entablatures, and pediments, would care to admit, even in private, that they were one or the other. Palladio studied Vitruvius, and he declared him to be an excellent writer on buildings. A more recent authority, the late J. P. Seddon, also studied Vitruvius, and he has given us his opinion of that master. He declared him to be an old gentleman who, by a stroke of ill-luck, came to write a dogmatic treatise on architecture at the time when Augustus strangled the Roman Republic. He enlightens us as to the contents of this treatise. It was written, he said, mainly to guide his pupils and professional brethren by a code of laws which he formulated, and a canon of taste which he invented to regulate architecture; for he had the sense to see that they were not to be trusted to think for themselves. Seddon did not believe in the exhumation and deification of the bones of Roman art, for he believed it to be the veritable Gorgon's head which paralysed true and living art. According to the same authority, under Jones, Wren, Hawksmoor, and Chambers, and the rest of that "forlorn hope," sham reigned triumphant from palace to terrace in plan, construction, and decoration alike; architecture became a parody of the work of other days, and nothing else was attempted. It seems strange that at present this "sham," which reigned triumphant everywhere, should, according to another authority, not only have in its methods a freedom, a vitality, and a power of adaptation to modern requirements, but also a characteristic wealth of stableness and grandeur fitting for all high and noble purpose. If this is so, we can have no difficulty in believing that Renaissance architecture is that of the New Jerusalem.

It is fortunate all architects do not think with Palladio that it is a duty they owe their "fellow-creatures" to publish designs of buildings erected by them, together with such observations and precepts as occasion required. Such works, if not wholly unknown at present, are very scarce, though they were common enough in the beginning of the last century, when the "Vitruvius Britannicus" was produced, and numerous quarto works on villas in every conceivable style. The disappearance of these books may be accounted for by the fact that our illustrated professional journals have since afforded architects a ready and inexpensive way of bringing their designs before the public, while the illustrations have the advantage of being reproductions of the actual handiwork of the architects or their assistants. We were pleased to find that Palladio drew attention to the fact that it was a common practice with him to make notes, systematically, of everything worth observing on his buildings, for we urged our readers to the same course in a recent number of this journal, though we were not aware at the time that Palladio adopted so desirable a way of rendering his experience of value to others as well as to himself. Men often pursue the same line of conduct actuated by different motives, and though we approve of his method, we are not altogether in harmony with his aims, for he says they were to induce men to lay aside the extravagant abuses, the barbaric inventions, and the needless expense so common to building at the time.

With Palladio and his friends the study of architecture was a favourite, as well as a fashionable amusement, and he was sanguine that the art would be carried to a pitch of perfection, as it was patronised by gentlemen of high birth and extraordinary talent. Amongst the eminent amateurs were Aretino the painter, Sansovino the sculptor, and Barberino, "a curious inquirer" into the several branches of architecture; in fact, according to the custom of the time, an architect who was not a painter, a sculptor, or a writer of heroic verse was unknown. It is singular how art methods, as well as others, repeat themselves after long intervals; for, in the fifth century B.C., in the golden days of art in Greece, architects were also sculptors, founders, or potters. There is much in Palladian architecture that is pleasing: repetition of shapely forms, regularity, and ornament following well-known lines, all contribute to make an agreeable picture, though it need not be overburdened with much original art feeling. It was no doubt at one time handled with more freedom than good taste in this country, for even Charles Kingsley, who was not an art critic, made one of his buildings, Stow House, "a huge Palladian pile, bedizened with every monstrosity of bad taste."

Mr. Thomas Herbert Norton, of Down-street, Piccadilly, and of Little College-street, Westminster, surveyor, who died on November 1, left £38,622.

BURLINGTON FINE ARTS CLUB.

EARLY ENGLISH EARTHENWARE.

We heartily congratulate the committee, consisting of Sir Arthur Church, F.R.S., F.S.A.; Mr. Edward Dillon, F.S.A.; Dr. J. W. Glaisher, F.R.S.; Mr. R. L. Hobson, Lieut.-Col. Lyons, F.S.A.; and Sir Hercules Read, P.S.A., F.B.A., on the delightful selection of Old English pottery they have secured for this exhibition, and on the valuably informative introductions Mr. R. L. Hobson and Dr. Glaisher have contributed to the catalogue, which so eminently add to its interest.

Purely native, for the most part, and racy of the soil, the Mediæval ware was meant to supply the needs of the common folk. Quaint and untrammelled by the rules of art, and not without evidences of the influences of foreign ideas, especially in the Delft and finer stonewares, and in the productions of Dwight and Elers, we find even these types anglicised in the process of reproduction, and none of them have left a lasting impress on the pottery of this country. Scattered up and down the country as the early potters were, the influences due to local conditions were slight, but still noticeable. Generally the characteristics of the Mediæval work were a body of rough texture, of red, buff, or grey tint, sometimes unglazed, but usually partially coated with a transparent lead glaze, naturally of a yellowish tone, but often coloured green with copper oxide, and occasionally stained purplish black with manganese. The ornament is usually a simple pattern incised or traced with liquid clay, or "slip"; applied clay in crinkled slips, studs, leaf-shaped pieces, or animal forms, and moulded or stamped masks and figures. Exceptionally fine, doubtless, are the specimens in Case A, notably the two rare aquamanile from Scarborough (17 and 30); but there is much else to show that the average of the Mediæval potters was a high one.

The Mediæval tiles belong, of course, rather to Gothic architecture, and are replete with its spirit. They reached their highest perfection as early as 1270, as the few fragments secured of the splendid pavements laid down at Chertsey and Halesowen bear witness. A good specimen of later work is afforded by the section of the pavement from Canynge's house at Bristol, large enough to indicate adequately the arrangement and general effect of a Mediæval tiled floor. The art died out with the dissolution of the monasteries, and the inlaid tile gradually gave place to the Flemish and tin-glazed tiles, painted in bright colours.

Of Elizabethan pottery, besides the ordinary green glazed work, we find a few finer wares of doubtful descent, closely allied to the German stone tiles of the period. One instance occurs in the candle-sconce (Case A, 74), with the arms of Queen Elizabeth thereon. Another type is the mug (Case D, 22). It has been suggested that these were the work of Flemish potters of the period, of whom there are records at Norwich, Sandwich, Maidstone, and Canterbury. The "Cistercian" ware, the link between Mediæval and 17th-century pottery, so called because specimens have been found on the sites of Cistercian abbeys in Yorkshire and elsewhere, was certainly English. It was a hard red ware, with a brown-black glaze of lustrous metallic appearance (see Case B, 73), sometimes decorated with white slip ornaments, like those in Case B (65), attributed to the Ticknall potteries in Derbyshire.

The two patents of John Dwight of Fulham, taken out in 1671 and 1684, mark his claim to the discovery of the secret of German stoneware and the mystery of Persian ware and porcelain. The few specimens of Dwight's work shown are enhanced in value by the valuable notes of his important researches contributed by Sir Arthur Church, who is the acknowledged doyen among collectors, and whose loss sustained by the disastrous fire at the Alexandra Palace in 1873 is still deplored by all. From the particulars given of Dwight's various actions it is evident that while many of his contemporary potters were making in stoneware a variety of vessels during the last quarter of the 17th century, besides Dwight

himself, only the brothers Elers were producing the fine red stoneware illustrated in Case H (42 to 46), described in the patent of 1671 as "opaccous red and dark coloured porcelaine," generally, but wrongly, known as "Elers ware." The Fulham potteries were carried on by the descendants of the Dwight family till 1746, and by William White, who married one of the family, and his descendants till 1862. In Staffordshire, in spite of all injunctions, David Elers and his brother Philip seem to have gone on making red ware at Bradwell Wood, in Staffordshire, and no doubt contributed largely to the development of the production of the Staffordshire salt glaze stoneware of the early decades of the 18th century. This was at first of a greenish grey or drab colour; but about 1720, Astbury and his fellow-worker Twyford, by the introduction of white Devonshire clay, first as a wash and then as an ingredient of the body, and of ground flint, converted it into a fine white ware. Astbury and Twyford are said to have learned by stealth the secrets of Elers' processes. John Astbury's son Thomas is credited with the first successful attempt at Lane Delph in 1725 in making the cream coloured ware which was perfected forty years later by Josiah Wedgwood. Two interesting specimens of this early painted cream-ware will be seen in Case H (49 and 52). It is difficult to identify the work of individual potters in the various varieties, but it is certain that Twyford, Ralph Shaw, Dr. Thomas Wedgwood, the Baddeleys, and the Daniels were responsible for many of the finer specimens.

Of Slip Ware and Delft many very fine specimens will be seen, mostly made in Staffordshire, Derbyshire, Wrotham in Kent, and in or near London. Of the Delft ware the best English pieces, with a few rare exceptions, fall far short of the best Continental examples. The most interesting are those attributed to Lambeth, and several pieces in the exhibition afford good examples of the highest point to which painting on Delft reached in this country.

Some good pieces of old furniture and eighty-two remarkably good specimens of stamp-work and petit-point embroideries, mostly of the 17th century, add in no small degree to the interest of this excellent exhibition.

THE NEW ENGLISH ART CLUB.

The fiftieth exhibition of the New English Art Club—soon, apparently, to be rivalled by another new society—is certainly a comprehensive one. There are 282 works hung, and there are three times as many by outside exhibitors as by members. Several usual supporters, moreover, are absentees, and about the great majority of the exhibits there is little to say.

About the best things on the walls are Mr. Ambrose McEvoy's four works, and we like his water-colour, "On a Balcony" (243), best of all. Mr. Augustus Johns is to the fore with eight subjects, the largest being a rubbed charcoal cartoon, "The Flute of Pan" (1), in which there is certainly plenty for the money. Of the rest the best, though slightly sketched, is the boy "Robin" (19). Mr. Wilson Steer's rather fiery "Sunset" (18) we like less than "The Breakwater" (31). Mr. Orpen's truly remarkable exhibit, "Sowing the Seed" (28), is presumably a skit on Irish agricultural technical education. The title that suggests itself is "The Magpie and Stump"! Mr. C. J. Holmes's best picture is "Under the Viaduct, Dentdale" (65).

Among the rank and file the lady artists score well. Miss Ursula Tyrwhitt's flower pieces (163, 223, and 256) are good. Miss Margaret Gere's "Vision of St. Peter on the Housetop" (67), and "Miss Blackwell in Church" (72), well deserve mention. Miss Fanner's yachting scene (4), Miss Atwood's "Still Life" (111), and Mrs. Sargant Florence's cartoons for wall decorations (178, 183, 188, and 195) are all creditable works.

Of the rest, perhaps the best things are by Mr. David Muirhead, Mr. Ian Strang, Mr. Lucien Pissaro, Mr. Innis, Mr. A. Rothenstein, Mr. Bernard Sickert, Mr. C. M. Gere, Mr. Mark Fisher, Mr. F. H. S. Shepherd, Mr. D. S. McColl, and Mr. Gertler.

ORNAMENTAL TILE-WORK.—VII.

CORNICE AND FRIEZE WORK.

The slight use of the tile as an aid in fining down the somewhat harsh appearance of plain oversailing brickwork, is really most valuable. It is, nevertheless, a position where it is very seldom used, although it might be readily introduced in a comparatively inexpensive manner on a great deal of constructive work of a plain

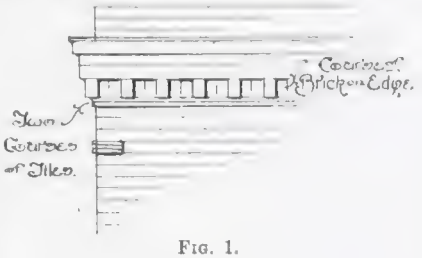


Fig. 1.

character. Merely two or three courses of tile, so used, with one forming the corona, in quite a plain brick cornice, introduces a far greater degree of pleasing finish, such as illustrated by Fig. 1. Utilised in a similar manner, as fillets, but on a more extensive scale, with splayed brick and ovolo courses, quite an elaborate cornice can be simply constructed, after the nature illustrated by Fig. 2. The use of the tile fillet in the construction of heavier cornices still is shown by the succeeding illustration, Fig. 3. So utilised, in conjunction with brick relief of the simplest character, quite a large amount

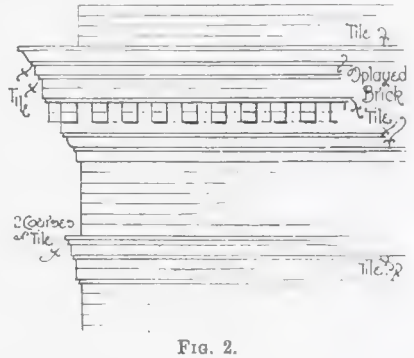


Fig. 2.

of decorative effect can be imparted to many structures, as seen by this figure. The simple and inexpensive nature of the main materials would thus often admit the introduction of either a little carved brickwork, as shown, or coloured cement plaster modelling. The circular windows are simply constructed in plain brick rings, the outer one being slightly projected, with tile key-blocks. Slight, concentrated work of this character, massed at the top of a building, with a little more disposed in a somewhat similar manner on an entrance, usually has a far better appearance, even with plain, broad pilasters, to the main portion of a building, than many of the

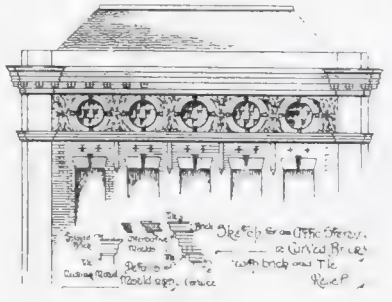


Fig. 3.

customary systems of architectural decoration generally used. The detail notes on this figure show one or two alternative methods of varying the corona course with simple moulds of brick, such as in practically universal use for many purposes. A plainer class of work, constructed mainly in tile, is illustrated by Fig. 4. It consists of a projecting cornice composed wholly of a few courses of tile, with a low blocking course of brick or roughcast cement, capped by a row or two of tiles. Simple work of this character could usually be introduced on most plain work. The chevron pattern tile frieze, either with or without the pointed bricks shown, in conjunction with the broken necking course, gives quite a picturesque finish to a wall for many positions. Of a somewhat similar type, but slightly more elaborated, is the design shown by the succeeding figure, No. 5; a course or two of plain bricks being used in the necking and cornice. The arcaded tile pattern to the frieze, although simple, affords a very pleasing finish. The two latter examples are such that might be readily introduced with concrete-block construction, involving, really, a very slight amount of work, considering the variation obtained. Of a much more advanced type, constructed mainly in tile, with a course or two of plain and chamfered bricks, is that illustrated by Fig. 6. The

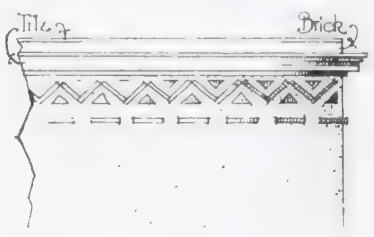


Fig. 4.

frieze angles are treated with a tile triglyph, the tiles being laid horizontally between vertical ones. The running-frieze pattern itself is more adapted to the concrete-block construction. When in brick, with a roughcast surface, it would then naturally require various patterns, mainly of a lining character, as they would have to largely follow the brick coursing. The alternative tile design for this class of work illustrates the greater variations which can be introduced with the pantile. The Lute, or Lyre, simply formed in this manner, with a few tiles, represents merely one of the many patterns which can be so designed to introduce some distinctive symbolism on any particular type of building. For instance, the one illustrated would be applicable to music-

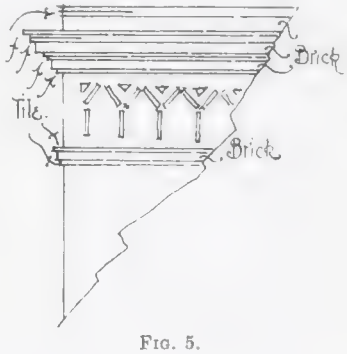


Fig. 5.

halls, pavilions, or bandstands. The latter class of structure particularly is one needing considerable improvement. They might well enough be treated in a sound architectural manner. It would form a great improvement also to their general and customary surroundings. The usual types of cast iron—a species of glorified birdcage—which are mainly in use for these purposes are far from satisfactory in general appearance. More often they are uncomfortable-looking, incongruous, spindly structures, invariably out of keeping with their surroundings, and they look it, all over. Something of the open garden pavilion type, if not in stone, could, at any rate, be erected simply in concrete, roughcast, and tile-work. This could be so designed to present a really good architectural appearance, something more substantial, yet at the same expenditure involved by the former type of work.

Another class of patterned frieze and cornice is illustrated by Fig. 7. The use of the tile as a fillet to dentil blocks formed of a projecting headed brick, shown in detail in this figure, although simple, gives a larger degree of finish to a cornice. Other types of pantile patterns for frieze-work are illustrated by Fig. 8. The designs which could be formed of this character, adaptable to such positions, all presenting a good and exceedingly original appearance, are practically innumerable. As shown by the last example, placed in long or short panels, formed by the fluted tile triglyphs, many variations can be formed from that of the continuous frieze pattern. A different type of pattern which can be adapted to many positions is again illustrated by Fig. 9. The same style also looks well for many kinds of interior work, such as fireplaces, for instance. In the latter case tiles on the flat can be substituted for the two pointed bricks in the centres, either in colour or patterns. Also, instead of roughcast around, broken colour tiles, set as a mosaic in cement, have an excellent appearance. A

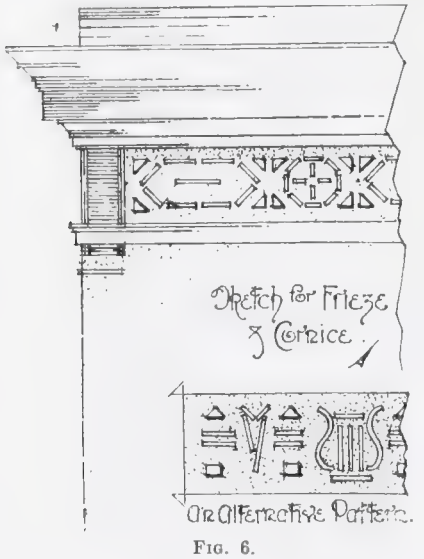


Fig. 6.

little mosaic work, such as this, merely in the frieze portion itself, does not entail much expense, either. At the same time, it forms a most effective and somewhat novel form of decoration for such positions. Fig. 10 illustrates a sketch design somewhat similar in general character, but with a different arrangement and pattern. The irregular setting of the pointed bricks, as shown here, has a far more picturesque appearance. It is less monotonous in effect than the more stiff and regular patterns, of the nature illustrated by the preceding example. Other patterns of composite tile centres, such as shown on this figure, might be used alternately, or as centrepieces, to give further variation. No. 2 on this sheet illustrates the variation of tiles on edge with pointed bricks, whilst No. 3—that of tiles on edge—with flat tiling. The latter might either be patterned, plain, or in colour, with pointed brick angles. The centre can be picked out with four pointed bricks, as shown, or one of the forms of flat tiling can be substituted here, if preferred. In fact, the uses of the tile in these latter respects alone are so many and varied it would be quite impossible to illustrate them adequately for such positions in these pages. Anyone giving the matter thorough study will at once recognise the possibility of numberless designs, excellent both in line composition and colour, possessed also of highly original qualities.

It is as well perhaps to note in this section more particularly the practical possibilities of the tile, both for a great deal of lining pattern-work, and also its uses as a fillet for stringcourses or cornices, when in brickwork. The 10½in. by 8¾in. size can be readily adapted to 9in. work, especially when used as an alternate raised and sunk lining pattern, or a flush-face relief. Even when slightly projected the slight discrepancy in thickness, made up in good cement compo, would form perfectly sound work. Used lengthways in the thickness of the wall, it gives a projection of 1½in, about the exact projection required for many string or

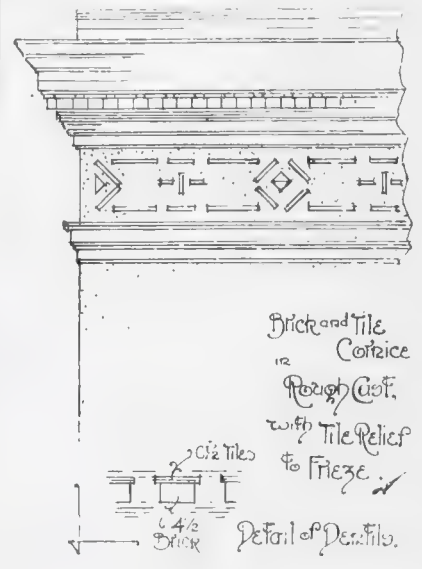


Fig. 7.

cornice designs. A slight projection allowed inside, to reduce that on the face, is no drawback, either; it merely provides a slightly better occasional key for plastering. In 13½in. work either the 10½in. or 8in. by



Fig. 8.

6½in. size will work in, with a slightly wider cement joint in the centre. If the 8¾in. by 6½in. are used together, giving a total width of 15¼in., this will often give again the projection required. The 14in. wall is the most

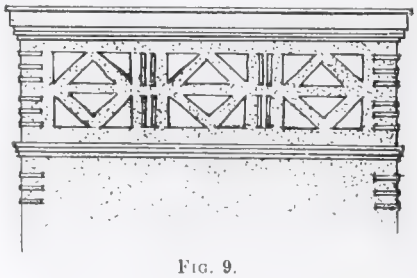


Fig. 9.

usual size, too, for many purposes. Rough cutting to a tile, if necessary for commencing fillets or filling purposes, is not an expensive item; such rough-edge work, turned to the interior of a wall, really forms a much better bond, and merely occurs occasionally. With 18in., or larger size walls, it will be found that the tile can be readily adapted in a constructive capacity, either without or with very little cutting. It would nevertheless prove a greater convenience if we had a few more reasonable sizes, both in bricks and tiles. The ready-made Queen closer, or half-brick, as it stands, is extremely useful in ornamental brick- and tile-work generally. Also for strings and cornices, where it can be used on its narrow face for slightly fining oversailing courses, etc., and introducing a certain amount of variation. What is also really required are half-bricks the other ways as well—viz., 9in. by 4½in. by 1½in. (really a thick tile), also 4½in. by 4½in. by 3in. Such sizes would facilitate work considerably, obviate a great deal of cutting and wastage generally, and provide a long-felt want. Another size tile would be a 10½in. by 9½in., thus allowing the ½in. projection for fillet coursing ready to hand for a great deal of work. A couple of narrow tiles, in a brick width—viz., 4½in.—and another of 5½in., would prove a decided advantage for

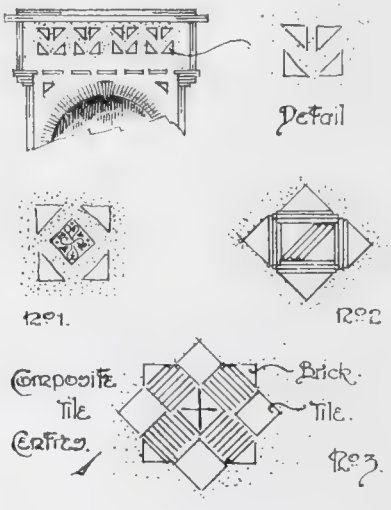


Fig. 10.

filling and projecting purposes, made also in the extra thickness of ¾in. and 1in. The average tile is often too thin of itself, and then has to be used in pairs or threes. When tiles and bricks are being moulded there is really no more trouble in forming them from a few different-shaped moulds than keeping to practically one stock-patterned size. Any firms sufficiently progressive to give these points proper attention in manufacture would, without doubt, ultimately derive considerable added benefit from the business point of view by so doing.

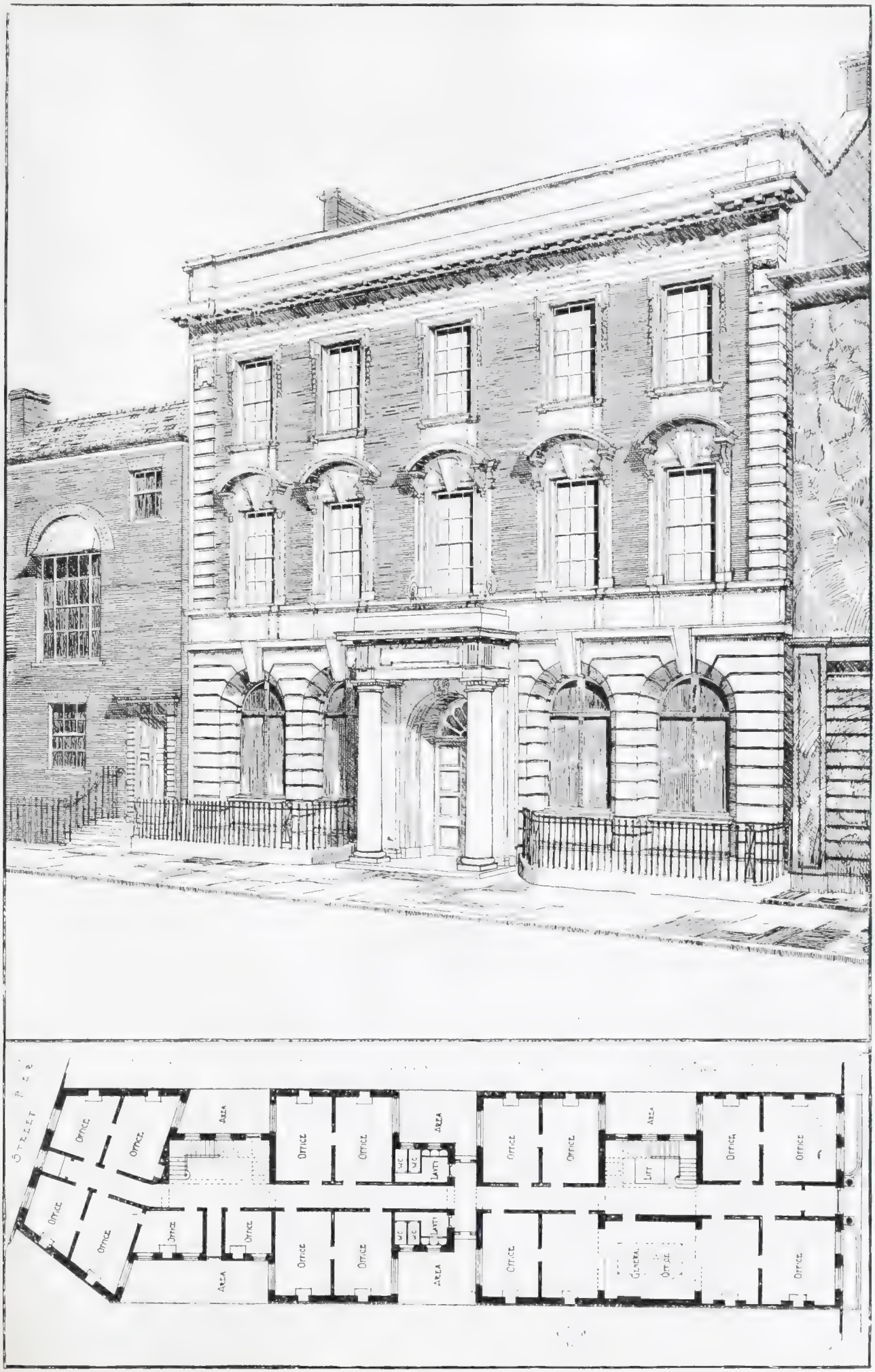
W. G. Kerby, Architect.

(To be continued.)

PEMBROKE BUILDINGS, CAMBRIAN PLACE, SWANSEA.

These premises are situated in the neighbourhood of the docks, and have been erected for Messrs. Harries Bros. and Co. from the designs of Mr. H. C. Portsmouth, M.S.A., at a cost of about £10,000. The accommodation includes about 60 offices, arranged on three floors, with accommodation for a caretaker on the upper story. There is also ample room in the basement for storage and other purposes. The main elevation to Cambrian-place is carried out in Portland stone up to the cornice over the ground floor, and the remainder is dressed with stone and Ruabon red bricks for the walling. The areas are all faced with white glazed bricks, and all the rooms are well lighted. The staircases are of reinforced concrete. An automatic electric passenger lift has been installed by Messrs. Smith, Major, and Stevens, of Northampton. Messrs. Bennett Bros., Swansea, were the general contractors for the work.

The Deptford Borough Council have increased the salary of the deputy borough surveyor, Mr. F. S. Cutler, to a maximum of £300, such increase to operate from Jan 1 next.



PEMBROKE BUILDINGS, CAMBRIAN PLACE, SWANSEA. Mr. H. C. Portsmouth, M.S.A., Architect.

DRAWINGS AND SCULPTURE AT THE TWENTY-ONE GALLERY, ADELPHI.

In small premises down York Buildings there is on view just now a very select collection of remarkable works by Mr. Jacob Epstein, the sculptor, whose monument to Oscar Wilde, erected in the Père La Chaise Cemetery, Paris, last year, has not yet been officially unveiled, owing to the objections of the Municipality, although some students recently removed the covering, and so displayed the figure to public view. We illustrated the work in the BUILDING NEWS for May 21, 1912.

The assemblage opened this week in the Twenty-one Gallery is restricted to fourteen objects, eight being cartoons or drawings in red or black chalk, presumably designs for carving, though they all seem too elementary to be realisable in stone or granite or marble. "Feeding Young Runts" might lend itself to plastic ingenuity, but otherwise the application of such sketches seems as unlikely as their purpose is mysterious. No. 8, called "Creation," represents a fœtus in an heroic or hieroglyphic sort of womb, surrounded by evolutionary folds, beginning and ending nowhere, thereby expressing in a sense mystery. The child in this centre-piece would certainly have looked more comfortable cradled in a shell.

The sculpture exhibited is not remarkable for beauty, save the head of a chubby-faced boy, "Romilly John," in bronze, with a polished copper skullcap; or perhaps it is a helmet. "A Group of Birds" in white marble represents an elementary sort of duck treading on the back of another, and there are two nondescript, archaic, totem-like figures carved in Flenite and polished. They have their facial features scratched on in rather barbaric fashion, and while odd in pose, they are so idealised as to represent nothing in particular. With no imagination could we describe them as beautiful, while they certainly lack humour.

HOUSE-DRAINAGE LAW.

By Mr. W. ADDINGTON WILLIS, LL.B.

LECTURE III.—THE COMBINED-DRAINAGE PROBLEM.

The third Chadwick Public Lecture was delivered at the Institution of Civil Engineers, Great George-street, Westminster, S.W., on Monday last, Sir William J. Collins, M.D., M.S., B.Sc., etc., chairman of the Chadwick Trust, in the chair.

The lecturer used the term "combined drainage" in a wider sense than usual, so as to include joint drainage found in the provinces. He first reminded the audience that both in the provinces and in London the union of two drains prima-facie constituted a sewer, and that this might exist on private property. He then pointed out that the Metropolitan definition of "drain" included a combined drain which had been ordered or approved by a local authority since 1848. The combined drainage, either in the provinces or in London, might have been made unlawfully, and it was necessary to see the general effects of this.

A person cannot take advantage of his own wrong; consequently, as between a wrongdoer and the council an unauthorised connection does not constitute a sewer. The same principle applies to the successor in title of the wrongdoer other than a purchaser for value without notice. As beteween an innocent purchaser for value and the authority, the former is not estopped from alleging that the unauthorised pipe is a sewer, even though the purchaser has not made any special inquiry as to the drainage. Mr. Justice Channell has expressed the opinion that some day the Courts may hold that the unauthorised pipe even in the hands of an innocent purchaser for value is a drain, and not a sewer. As between private individuals, the trespass or wrongful act of the one cannot affect the rights of the other without his consent, and the lecturer considered the position which existed between the freeholder and the lessee when the latter had been guilty of an attempt to convert a drain into a sewer. He next proceeded to explain the effect and application in the provinces of section 19 of the Public Health Act, 1890, pointing out that the decision of the House of Lords in "Wood Green U.D.C. v. Joseph" had cast some doubt on the correctness of some of the previous decisions. The limitation of this section to single private drains which serve houses belonging to different owners, and excluding those which drain houses belonging to the same owners, is incomprehensible. The section only relates to the liability to repair. It does not reconvert the pipe into a drain. This should be noted when there is a sale of land under an open contract, because the existence of a "single private drain" will make it impossible for the vendor to convey all that he has contracted to sell, and it will not avail him to show that the Act of 1890 has been adopted so as to cast the liability to repair on the owners.

Discussing the combined-drainage problem as it exists in London, the lecturer showed that the onus of proving the pipe in question is an authorised combined drain is upon the persons alleging it. They must prove that the drainage has been authorised by one of the authorities mentioned in the statutes, and all joint drains created before 1848 must be sewers. The order authorising the combined drainage need not be a formal order, but there must be sufficient evidence from which it can be inferred that the authority themselves had approved the drainage. It is not necessary to produce an approved plan, but other documentary evidence may suffice. Even the proof of an order may not determine the matter, for it may be shown that the builder has departed from the authorised drainage in some material respect. Connecting drainage from other premises with the authorised drainage will convert the latter into a sewer, and so will the grouping of the houses not in accordance with the authorised scheme. Immaterial deviations have no such effect. If the council can find the person who has made the unauthorised connections, and has thereby created a sewer, they may give him notice to restore the drainage to its proper condition, in accordance with the authorised scheme, and if he defaults the council may do the work themselves. Upon this being done the drainage may be treated as a "combined drain," and the principle of "once a sewer, always a sewer," does not apply to the pipe which, by reason of the wrongful act, had previously been a sewer. This is the effect of a recent case ("Kershaw v. Smith"), decided in April of this year.

The lecturer concluded by discussing the practical and financial effects of unauthorised drainage in the Metropolis, and the efforts which have been made to effect an alteration in the law.

THE LONDON COUNTY COUNCIL.

At Tuesday's meeting of the London County Council the General Purposes Committee reported that representations have been made by several of the contractors for architectural repairs and minor new works that some modification of the payment clauses under the contracts may be made, so as to allow of more frequent payments on account. The current contracts provide that works of general repair under £50 in value shall be paid for after the account in respect thereof has been certified and approved by the committees concerned, and that in respect of such works exceeding £50 in value advances of not less than £50 may be made, not more frequently than once a month, representing 80 per cent. of the value of the work done. As regards minor new works payment of 80 per cent. of the value of work executed may be made, not being of less amount than £50 nor made more frequently than once a month. The committee thought that, under all the circumstances, some modification of these provisions in favour of the contractors may be made, and recommended that "the undermentioned conditions do obtain as regards payments to contractors under the contracts expiring on August 31, 1915, for general repairs and minor new works at Council buildings, including schools — (i.) General repairs — (a) Works not exceeding £20 in value. The contractor shall render his accounts within one month of the date of the completion of the work. Pending the examination and approval of such accounts advances representing 80 per cent. of the total value thereof, as shown on the monthly statements of accounts rendered, may be made. (b) Works exceeding £20 in value—Advances representing 80 per cent. of the work executed under any one order and supplemental orders may be made from time to time. Advances shall not be made more frequently than once a month nor be of less amount than £16. (ii.) Minor new works: Advances representing 80 per cent. of the work executed under any one order and supplemental orders may be made from time to time. Advances hall not be made more frequently than once a month nor to be of less amount than £20."

The Education Committee reported as to the method of inviting tenders for work in connection with the Council's educational institutions, under Standing Order No. 383. The practice obtaining is to invite tenders from a limited number of firms, approved by the Buildings Sub-Committee in each case, whose names have been placed either by the late School Board for London or by the Council from time to time on the selected lists of contractors. Standing Order No. 383 is as follows: "Except where otherwise provided, all tenders shall be invited by advertisement." With the concurrence of the Standing Purposes Committee, the Education Committee now ask for authority to make a limited selection from the lists of approved firms of the names of the firms to be invited to tender for each work or series of works, and to delegate such power to a sub-committee.

The Improvements Committee recommended that the section of Tooting Beggardens between Fernwood-avenue and Mitcham-lane be widened, at a cost of £1,670, from a present width of from 20ft. to 25ft., to a width ranging from 43ft. to 54ft., as a portion of a scheme in progress for increasing the width of this line of thoroughfare, and also that Church-street, Kensington, should be widened at its junction with Kensington High-street by setting back by 4ft. the railings of the churchyard of St. Mary Abbots—an alteration which will widen that street for 78ft. from 41ft. to a minimum width of 45ft.

The Highways Committee recommended the acceptance of the tender of Messrs. Rowley Brothers, Wood Green, N., amounting to £16,981, for the erection of the completion of the Abbey Wood car-shed for the Council's tramways. The construction of the tramways from Chapel-street to Nile-street, Woolwich, will, the committee stated, be completed at an early date, and it is desirable that the erection of the car-shed should be expedited. The whole car-shed, when completed, will provide accommodation for eighty-six cars, and the portion now to be erected is for sixty-one cars.

The Bridlington Town Council have received the sanction of the Local Government Board to the borrowing of £4,600 for the purpose of widening Cardigan-road into the rural district in the Bessingby parish.

A Local Government Board inquiry was held at Wallasey on Friday by Mr. Thomas Adams, into the application of the Wallasey Town Council for authority to prepare a town-planning scheme with reference to the Stanley Rock estate, New Brighton. The area proposed to be planned comprises about five acres of land, and is within the boundaries approximately defined by St. George's-mount, Rowson-street, Field-road, and Carlton-road. The application was opposed by Dr. Bell, the owner.

New cement-works have just been built at Claydon, about four miles from Ipswich, for Mason's Portland Cement Company, in succession to works belonging to the same family at Waldringfield, on the banks of the Deben, now abandoned. The works have taken about twelve months to construct. The chimneys—that for the kiln being 165ft. and the engine-chimney 120ft. in height—have been built under the superintendence of Mr. Tasker, of Cardiff. The workmen's cottages have been built at £150 each in pairs; they have hollow brick walls and roofs close-boarded under tiles.

Currente Calamo.

The further discussion of the R.I.B.A. proposals with regard to the Statutory Registration of architects or the application for a new Charter, providing, among other things, for the enrolment of "Chartered Architects" by the Institute, after examination, was adjourned on Monday night. On the previous Thursday, as we announced in our last number, a special meeting of Associates only was held at the Westminster Palace Hotel. The meeting was largely attended, and, unmistakably, the demand of those who spoke, and, as voiced in the letters read from members in the provinces, was for Registration. The following resolutions were unanimously carried:—

1. That the following resolution be proposed next Monday at the R.I.B.A.: That in the opinion of this meeting of the R.I.B.A., it is undesirable to come to any decision in regard to the report and recommendations of the Council without further information, and in order to arrive at some definite policy in regard to future action, a further meeting should be called before the end of January next for the purposes suggested by the Registration Committee in Clause 5 of the Report of March 28, 1913, and that with the notice of that meeting every member should receive from the offices of the Institute

(a) A copy of the Bill as revised
(b) Copies of the reports of the solicitors and Parliamentary agents, and
(c) Copies of the whole of the documentary evidence upon which these reports were based.

2. That this meeting appoints a Provisional Committee of seven Associates to watch over its interests for three months, with power to add to its number.

3. That the following Associates be elected: P. M. Frazer, G. A. T. Middleton, H. Hardwick Langston, R. Goulburn Lovell, L. Sylvester Sullivan, S. D. Topley, and Herbert A. Welch.

At Monday's meeting of the R.I.B.A. the first amendment set out above was duly moved by Mr. S. D. Topley, A.R.I.B.A., and seconded by Mr. Herbert A. Welch, A.R.I.B.A. The obvious policy of the Council, in our opinion, was to have accepted the amendment frankly, and adjourned thereafter. That course, however, was not taken; but, on the motion of Sir Aston Webb, the meeting was adjourned on Mr. Topley's amendment. There was certainly no enthusiasm manifested at the meeting on behalf of the "Chartered Architects" proposals, and we gathered from several that in their opinion the information demanded by Mr. Topley's amendment ought certainly to have been in all members' hands, with the rest of the information in the notice convening the meeting, inasmuch as it was practically impossible to arrive at any definite conclusion without it. It is probable that at the business meeting on January 12 another resolution will be proposed of a decisive and drastic character, which, if carried, will bring matters to an issue at once. Meanwhile, we very much doubt whether there will ever be any "Chartered Architects" of the sort the R.I.B.A. Council proposes to make. As far as we can see, no real obstacles bar the way to Statutory Registration, if only its achievement is sought boldly and unitedly. The R.I.B.A. may go back on itself and delay it; but it will never induce the profession as a whole to accept its alternative proposals. The Society of Architects will do well to press forward their revised Bill for all they are worth. The time to strike is while the iron is hot.

Dealing with his land scheme at Holloway last Saturday, Mr. Lloyd George further described the Government's policy regarding leasehold houses and the housing problem. The Government meant to confer security of tenure on all leaseholders, and prevent confiscation by landlords, to give a right to renew leases on reasonable conditions, and compensation when renewals were refused. Improvements regarding housing and insanitary areas by municipalities were prevented by the prohibitive prices asked for land. The first condition of good housing was that land should be obtained at an equitable price. Ground landlords must contribute a fair share towards taxes and the Imperial Exchequer, and contribute towards the cost of Imperial services.

All of which does to tickle the ears of the groundlings with! Mr. Lloyd George knows perfectly well that while he is so eager to "put an end to the old order of things," to abolish "slums, workhouses, sweating, unemployment, hunger, undeserving wretchedness, and poverty caused not by the man himself"—while he is tearing his hair at the iniquities of landlords, dukes, earls, and all other social "parasites," the Government say nothing can be done to remedy the unsupportable evils during the present Parliament, and nothing on earth will induce them to enable a new Parliament to be elected till 1915. Surely, if things are as bad as Mr. George makes out a delay of more than two years before dealing with them is shameful! Yet he is a consenting party to the postponement of the next General Election to the very last day on which the Government can by law hold office. Why? Because he can promise the Moon, meanwhile, safely, if it will fetch votes when, at last, the Government appeals to the country.

The law's uncertainty is with us day by day, and anything may happen on an appeal. This seems especially true in regard to the wonderful clauses of the Great Budget. The case of the Southend-on-Sea Estates Company, which we noticed in our issue of November 13, where Mr. Justice Scrutton decided that Undeveloped Land Duty was chargeable, has now been reviewed and reversed in the Court of Appeal on Monday. The land in question was let by the company on a lease dated prior to 1909, which gave them power to determine it at any time and "resume possession for building or other purposes." The Act provides that if the landlord has power to determine such a lease he shall do so at the earliest possible time or pay Undeveloped Land Duty. The Judge below had held that the lessors had the power, but not the desire, to take possession of the land, and so he decided in favour of the Revenue, as he thought the point as to desire had nothing to do with the legal question. The Court of Appeal began by emphasising the fact that they had no concern with the policy of the Act, their only duty being to construe its clauses. Then the three members of the Court agreed in holding that unless the owners could say they wished to resume possession for building or other purposes inconsistent with its continued use agriculturally, they had no power to end the lease and resume possession. In this way the bottom fell out of the Revenue case and of Mr. Justice Scrutton's judgment, which was based upon the idea that they had the power, but not the will. It is a very good instance of the psychological subtlety of the legal mind, as shown in the higher places of our Court of Appeal.

Sir Martin Conway said some wise words about Art to the teachers at the Birkbeck College on Monday night, in connection with a movement for increasing the power of appreciating good pictures among school-children. People often spoke of art, Sir Martin said, as though it were a religion or something serious and superior. He looked upon art as an essential element in everybody's life. They had it from the cradle to the grave, and could not get away from it. It might be good or bad art, but there it was, deep down in the instincts of man. How should children be taught art? The instinct for it could not be planted in them. All that was necessary was to call out the instinct which existed in them. Unless children were caught young, and given a chance of educating their own tastes, the moment was gone. Art was something done by ourselves for the purpose of giving pleasure to somebody else. It was altogether different from sport, which was something done for the sake of giving pleasure to ourselves. There was no way so efficient as using the art of a given period for teaching the history of the world at that period. Public art was generally produced to satisfy the tastes of a small number of people controlling the expenditure of public money. The result was the production of much art—good, bad, and indifferent. That, unfortunately, is true enough, and that is one reason why we urge the creation of a Ministry of Fine Art, which shall be responsible to the whole nation, and not the mere creature of an interested and Philistine minority.

In our issue of November 14 we published a letter from Messrs. Pearce Bros., of Bromley, Kent, complaining that their lowest invited tender by £40 for work at the Beckenham Liberal Club was ignored, and the work given to a Beckenham firm, because "the committee desired to keep the work in Beckenham." If that was so it certainly seemed unnecessary to ask two outside firms to tender. A lively correspondence appears in the two local papers, the *Beckenham Journal* and the *Beckenham Advertiser*, of November 29, between Messrs. Pearce Bros. and the chairman and secretary of the Liberal Club, which is worth reading by builders. It seems the Liberal Club chairman of committee and hon. secretary allege that the tender of Messrs. Pearce Bros. was rejected because they named no time in which they undertook to complete the work. The chairman of committee, in his letter to the *Beckenham Journal*, says: "I may add frankly that my committee were by no means keenly disappointed at being able (owing to the carelessness or wilfulness of Messrs. Pearce Bros., in not complying with the conditions of the specification), and without departing a hair's-breadth from the ordinary rules of business, to give the contract to a young Beckenham firm, employing several members of the club specially interested in the work, and who, up to now, have very fully justified the confidence placed in them by the splendid manner in which they are proceeding with the work." The hon. secretary, in a final letter to the same paper, says: "My committee do not submit to a bullying but disappointed contractor, and in the light of after-events they are quite satisfied that they came to a right and wise decision." The satisfaction seems to be all on the side of the committee, and the one thing that seems certain is they did *not* get the lowest price for the work. The following were the figures:—

For additions and alterations to the Liberal Club, Beckenham, Kent, for the Committee of the H. T. Harvey Memorial; Mr. Walter Pamphilon, architect, 21, Finsbury-pavement, E.C.; Copeland and Son, £643; Elliman, £615; Jones and Andrews, £[illegible]

Crossley and Son, £534; Graham and Co., £518; Fox, Seawen, and Dart, £504; Pearce Bros., £467.

The British Fire Prevention Committee, which largely devotes itself to the scientific and technical aspects of fire-prevention, from time to time takes the result of its work into the home of the citizen by issuing useful warnings. Thus this week the committee have issued a "caution" on certain fire dangers common to the festivities of the Christmas season—i.e., entertainments and parties. These "cautions" are issued by the British Fire Prevention Committee in the first place to the hospitals, asylums, children's homes, industrial schools, etc., next to the clubs, hotels, and large boarding-houses, then to the barracks, territorial drill-halls and assembly-rooms, as also to vicars in charge of large parish halls. A system of co-operation, with the police and with organisations such as the "Boy Scouts," has been devised, and similarly a distribution of printed matter by some of the great corporations, and the posting up of the notices by certain local authorities, etc. Copies of the "caution" in packets of ten, twenty-five, or fifty will be provided free upon written application (with return postage enclosed) to the Registrar of the British Fire Prevention Committee, 8, Waterloo-place, London, S.W.

The many friends of Mr. C. L. Norman will regret to hear that he has severed his connection with Messrs. Thos. Parsons and Sons, for whom for five years he has acted as publicity manager. Messrs. Parsons' battleship has been the centre of attraction at many exhibitions; but few who have admired it and comprehended the general advertising policy of the firm have known that to Mr. Norman the latter owes many of its advertising schemes. The regard in which he was held by his fellow-workers was fully emphasised at a farewell dinner, which took place at Frascati's on the 26th ult., when Mr. Norman was presented with a gold-mounted cigar-case and a pair of silver flower-holders. We venture to predict that it will not be long before we see Mr. Norman in a similar position, where his organising and advertising abilities will have their accustomed scope.

The ironmonger was showing his customer new types of grate. "Now, this one," he said, "fixed at fifteen shillings complete, will save half your coal. But I recommend the better type, with special tiled back, at four pounds five." "How much more coal will this save than the cheap one?" inquired the customer. "Twice as much," said the confident ironmonger. So, remarks the *Manchester Guardian*, we are within measurable distance of a smokeless Manchester.

A new council school was opened at Daventry on Thursday in last week. It has cost £3,300 exclusive of site, and accommodates 738 children in the mixed department, and 130 infants. The plan is that of classrooms grouped about a central hall, all on the ground level. The architects are Messrs. Talbot Brown and Fisher, Wellingborough, and the builders Messrs. Thomas Adams and Son, of Daventry.

At the meeting on Monday of the Corporation of Nottingham it was reported that the expenditure on the Carter-gate area improvement scheme would be 92,000. The district contains 201 unfit and irreparable houses. It was agreed to apply to the Local Government Board for sanction to borrow the sum of £50,000 towards the outlay. A motion for the appointment of a town-hall committee, to consider the advisability of erecting a new town-hall on the site of the Exchange was deferred for a month.

HAYWARD BROTHERS AND ECKSTEIN, LTD.'S, DIARY, 1914.

A copy of Hayward's Diary for 1914 is being issued to over six thousand architects, builders, engineers, and others interested. The diary is fairly well known, having been issued for a number of years; but this year it is issued in improved form, and possesses increased interest in regard to the thirty-two pages of information at the end of the book, having special relation to the products of the firm.

We specially direct attention to the general remarks on page 1 of the 32-page insertion, where mention is made of the increased value of buildings fully fitted with daylight-lighting devices, as there is no doubt that this is rightly being nowadays given much more attention than formerly, and with the result that buildings are made of far greater value to the owner, and in selling, as well as to the occupiers in use and convenience and as regards the health of the inmates: by putting in prismatic glazing rooms are better lighted and artificial light is thereby dispensed with. In quite a short time the cost of such glazing is refunded, and a monetary gain henceforth is secured to the owner or occupier who makes the improvement. Besides the other lines mentioned we should like to draw special attention to the considerable number of illustrations of work done, and the various circumstances dealt with thereby, which should prove of considerable service to those concerned with the designs of new buildings, or the improvement of existing ones. The example on page 11 of a fire-escape staircase, *intact*, after serious fire, showing the valuable service of a good staircase in circumstances that otherwise might be disastrous, is well worth noting. Something of the same nature may be noted on page 17, of the "Jhilmil" steel fireproof lath, which was intact after the great fire in Barbican.

Hayward's standard cast-iron sashes (on page 19) are designed with the special object of saving time and money in cutting bricks in making window-openings, a point which does not generally receive consideration, but which certainly embraces opportunities of saving when constructing a building. A fine range of fifty patterns of really well-made sashes is shown, capable of meeting all requirements without variation from standard. Hayward's patent "putty-grooved" steel sashes and casements are becoming well known, and are fully dealt with on pages 20 and 21, the latter of which shows some good examples of casement work, which, properly dealt with in residences, etc., could be used with great advantage much more often than they are.

An example of successful treatment of garages may be of interest, on page 23, whilst the special patent "Reform" roof-glazing and skylights, shown on pages 24-5, possess many points of unique interest and advantage. So much time is often spent on special designs of skylights, varying in all sorts of ways to no particular advantage, that the idea of this standard range is to deal with this matter in the simplest and best manner, built up from a large number of the examples from actual practice, and combining therefrom the maximum of good points with the minimum of trouble to those concerned in designing and ordering, it being necessary merely to specify the sizes in accordance with the table. In connection with this subject also attention is directed to the special "leadising" treatment on page 27, which meets a long-felt want in the best way scientifically and practically, and is quite a new departure.

On page 28 is a very strong statement about "Hayward's Copperlite" fire-resisting glazing, which is becoming more and more used in many large buildings and stores. This glazing has passed actually the *most stringent test* ever applied, and has obtained the *highest award* of the British Fire-Prevention Committee. In this connection reference may be made to the 7,000ft. super. supplied to Selfridge's Stores, and a large quantity being constructed for Messrs. Harrod's new premises in Buenos Aires, as well as the other names mentioned on page 28. Pages 29, 30, and 31 will certainly prove of use, containing as they do special information (some of which is original) in the most practical form that could be devised.

OBITUARY.

Mr. Walter Emden, J.P., died in London on Wednesday morning, after an operation on the previous Monday. Thomas Walter Lawrence Emden was born in 1847, and married in 1875 the eldest daughter of Mr. V. G. Beardshaw, of Normandale, Sheffield. Mrs. Emden died some years ago. Educated privately, he studied mechanical engineering with Messrs. Maudsley, Son, and Field, and civil engineering with the late Thomas Brassey on the Thames Embankment, the East London Railway, the Mid-Level Sewers, and other works. His early architectural experience was gained with Mr. Kelly and Mr. Charles Lawes, both church architects. He was the architect of the Dublin Exhibition of 1872, and architect to the now demolished St. James's Hall from 1871 up to the time of his retirement in 1906. He designed the Garrick, Terry's, and the old and new Court theatres, and others at Ipswich and Southampton, as well as the Tivoli Music-hall in the Strand. He was also the architect of several leading hotels, amongst them the Hotel Victoria, the Hotel d'Europe, Leicester-square; the Prince's Restaurant, and an hotel at Newmarket; in the planning of the Piccadilly Hotel he was associated with Mr. William Woodward, F.R.I.B.A. He was President of the Society of Architects in 1897, 1898, 1899, and 1900. He was an alderman of the City of Westminster and Mayor, 1903-4, and was also Mayor of Dover, 1907-8-9-10. We gave Mr. Emden's portrait in our issue for June 20, 1890.

Mr. George Browne Post, of 101, Park-avenue, New York, and Columbia University, one of the foremost architects in the United States, who designed many of New York's most conspicuous buildings, died at his home at Bernardsville, New Jersey, on Friday, at the age of seventy-five. Mr. Post, who was born in New York, studied architecture with the late Richard M. Hunt. During the Civil War he held rank successively as captain, major, lieutenant-colonel, and colonel in the 22nd New York Volunteers. After the war he settled down as an architect in New York, and ultimately became head of the firm of George B. Post and Sons. He held, among other distinctions, those of Chevalier of the Legion of Honour and Academician of the U.S. National Academy of Design, and was elected an Honorary Corresponding Member of the Royal Institute of British Architects in 1907.

The death of Mr. William Alexander Peters, J.P., master builder, of Rochdale, took place at his residence, Ryefield, between Rochdale and Bamford, on Thursday in last week, in his ninetieth year. For some years Mr. Peters had been confined to the house, though not kept to bed. The late Mr. W. A. Peters was apprenticed as a youth to a builder, and early commenced business on his own account as a builder and contractor. As far back as 1848 he obtained the contract for the enlargement of Hope-street Chapel. From small beginnings the business grew to large proportions. When his sons, Mr. James Peters (who died in 1904) and Mr. William Peters, had finished their schooling they joined the business, which was afterwards conducted under the title of W. A. Peters and Sons. Some of the more important works executed by the firm have been the Tower buildings, Empress ballroom, and Victoria pier pavilion at Blackpool; the Morecambe Winter Gardens and pier pavilion; the St. Anne's pier pavilion; the New Brighton Tower; the restoration of the Rochdale Theatre after the fire of 1894, and of the town-hall tower and spire after the fire of 1883; the erection of the Rochdale Technical and Secondary Schools; pulp and paper works at Barrow, and the Mosley Hotel at Manchester. Mr. Peters set his employees an example of industry. He was familiar with all the details of the trade, and for many years he not only did the thinking and the planning in connection with the concern, but

often put in a stiff day's manual toil as well. After a business life of over half a century he retired about a dozen years ago, leaving the concern in the hands of his two sons, Messrs. James and William Peters.

Mr. William Brass, a well-known builder in the City, died somewhat suddenly on Sunday week at his residence, 27, Brunswick terrace, Brighton. Mr. Brass was a son of the late Mr. Deputy Brass, a former representative of Cripplegate Within in the Court of Common Council. The son never aspired to civic office, but he was a Liveryman of the Carpenters' and Wheelwrights' Companies. He succeeded to his father's business and carried out contracts for the new War Office, one of the Post Office blocks in St. Martin's le Grand, and Whiteley's extension, and other large undertakings. Latterly, with offices at 13 14, Abchurch lane, he devoted himself to the building and letting of large blocks of business premises in the City.

Building Intelligence.

BIRKENHEAD.—At the Chester Consistory Court on Monday an adjourned application for a faculty in connection with Birkenhead Priory came up for hearing. It was stated in the application that the ancient edifice known as the Priory Chapter-house, standing in the churchyard of St. Mary, Birkenhead, had become much dilapidated, the roof and the interior woodwork being in a state of decay, and it is now desired to remove the roof, which is of modern construction, and to replace it with an oak-timbered roof of a design in harmony with the period of the edifice; to furnish the lower chamber as a chapel with a communion-table and reredos, communion-rails, and seats for the worshippers; to construct an external staircase to the upper chamber, and to construct a drain around the exterior of the building for the purpose of keeping the foundations dry. The works, it was added, are desirable, in order to preserve a structure of great historical interest and to provide a chapel and a meeting-room for parochial purposes. The vicar explained the plans to the Chancellor, Sir Philip Wilbraham, who ruled that before the application was granted the scheme must be submitted to a vestry meeting, and asked for an amended plan. The vicar said the King was paying a visit to Birkenhead in March, and they wanted him to lay the foundation-stone. The Chancellor expressed his sorrow at having to again adjourn the application.

LIVERPOOL.—At a meeting of the executive committee of Liverpool Cathedral on Monday, it was reported that Mr. Earle had paid in the £10,000 which he offered three years ago on condition that a further sum of £50,000 hould be raised. This had been done, but £35,000 was still needed to complete that portion of the Cathedral now building. Both turrets at the south end of the choir had been built to their full height of 162ft., the gable between these turrets was completed, and the outer walls on both sides of the choir had been built to their full height of 126ft. It was mentioned that all the windows of the chapter-house are to be provided by the Masonic body as a memorial to the second Earl of Lathom.

STOWMARKET, SUFFOLK. — Some plain and inexpensive hollow-wall concrete cottages have been erected in Bathing-place-lane, Stowmarket. The accommodation provided consists of:—On the ground floor: parlour, 13ft. 4½in. by 10ft.; living-room, 13ft. by 11ft., with larder and pantry leading therefrom; kitchen, 10ft. by 6ft., with sink and copper. On the first floor: Three bed rooms, respectively 13ft. 4½in. by 10ft., 11ft. by 8ft., and 8ft. 6in. by 7ft. 6in., each separately approached, with good hanging cupboard over staircase. The outside and party walls, as well as the internal walls on the ground floor, are all constructed on concrete blocks made on the site; the partition walls on the first floor are constructed of 2in. breeze concrete slabs, grooved and tongued together. The roofs are covered with French-pattern pantiles, or Bridgewater-pattern concrete tiles. The expense of the water and drainage to the council sewer is not included in the cost of the cottages, which is £150 each. The interior of each concrete block has two square cavities, so as to secure a damp proof wall. The plans were prepared by Mr. Henry J. Wright, M.S.A., Ipswich, and the contractors were Messrs. Malcolm, Maclaren, and Co., Ltd., Gracechurch-street, E.C.

WEST SMITHFIELD.—The excavations of the remains of the walls of the south external chapel of St. Bartholomew-the Great, West Smithfield, built by Rahere in 1123, is now complete. It confirms the conjecture that the plan of the chapel was similar to that of the external chapels at Norwich—i.e., instead of having a straight wall on the east side, with an apse on the south side as shown on all the published plans of St. Bartholomew's, it has an apse on the east side as well as on the south. The external face of the walls is in a far better state of preservation than the interior face; the plinth remains perfect round the whole extent of the chapel, with the exception of a small gap at the junction of the two apses and another in the east wall, where a passage had been made to bring coals to the furnace lately within the chapel. The exterior cannot be seen by visitors at present, owing to the work still in progress, under the direction of Sir Aston Webb, R.A.

COMPETITIONS.

ST. PAUL'S BRIDGE.—At the last meeting of the City Corporation, Mr. A. C. Morton, M.P., asked what course the Bridge House Estates Committee proposed to adopt with regard to the architectural treatment of St. Paul's Bridge. Mr. J. R. Pakeman, chairman of the committee, replied that it was proposed to invite British architects to send in designs. In the advertisement premiums would be offered of £300, £200, and £100 for the designs placed first, second, and third by Sir William Emerson, who would act in conjunction with the committee as assessor.

The additions to the Radcliffe Infirmary at Oxford opened last week were carried out from designs by Mr. E. Prideaux Warren, F.S.A., F.R.I.B.A., of Bedford-square, W.C. Messrs. Wooldridge and Simpson, of Oxford, were the builders, and the outlay was over £25,000.

A delay is likely to occur in the laying out of Shadwell Park as a memorial to King Edward, as the London County Council have selected that spot for the cutting of a new storm-water relief sewer. This will involve the making of one or two large outlets in the centre of the embankment wall. There are also negotiations in progress with the Port of London Authority as to the river wall and the foreshore of the river in front of the park.

A Church of England Waifs and Strays home in Castlemere-street, Rochdale, was opened on Wednesday week. The buildings have been adapted for their new use by Messrs. R. and T. Howarth, who have carried out the designs of Mr. W. Cecil Hardistry, of Manchester, the honorary architect to the Diocesan branch of the society. There are day-rooms, play-rooms, dormitories, baths, and the usual domestic offices and apartments for the matron and staff. There is accommodation for 20 boys.

At the annual meeting of Penzance Antiquarian Society on Friday, Mr. Leonard Michell, of Penzance, contributed a paper on "A newly-found cross at Ludgvan." The writer, who discovered the cross, said it formed the step of a small doorway in the church-tower. The edifice was erected in the reign of Henry VIII., and the tower rested on this cross, the age of which he calculated at 1,100 years. In his opinion, it formed a link between the early Celtic cross and the Norman font in the church which was of the eleventh century.

The Delegacy of London University have appointed in succession to Dr. T. F. Sibly, appointed Professor of Geology at the University of South Wales, Cardiff, Mr. W. T. Gordon, M.A., D.Sc., F.R.S.E., as Lecturer and Head of the Geological Department, University of London, King's College. Mr. Gordon has been Lecturer in Palæontology and Assistant in Geology at the University of Edinburgh since 1910, and has made extensive researches in Palæobotany, and some investigations in Stratigraphical Geology.

Correspondence.

ARCHITECTS AND BUILDERS AS CO-ASSESSORS.

To the Editor of the BUILDING NEWS.

SIR,—This idea is not novel; the late County-court Judge for this district adopted the plan you recommend, and appointed an engineer to sit with him in all engineering cases, and the writer in architectural and building cases, and so on in different trades, etc.

These appointments were permanent for all cases, and the individuals were selected, I believe, on the advice of the Chamber of Commerce.—I am, etc.,

WM. H. DUNCAN, F.R.I.B.A.

2A, Baillie-street, Rochdale, Dec. 2, 1913.

[Thanks. Any more such instances would help.—ED. "B.N."]

MORE GOOD NEWS FROM SASKATOON.

SIR,—After perusal of your article in your issue of October 31, on the contrast between the Old Country publicity methods and ours, we cannot arrive at any finding as to whether your reference to the new Bank of Nova Scotia, for which we are architects, as being a big job is an error of judgment or merely a quiet little joke at the expense of our conceit.

We might say that our biggest job this year is a ten-story building, 75ft. by 140ft., the estimated cost of which is half a million dollars. Without further advertising ourselves, this one instance should be sufficient to show you that opportunities in the West are not confined to 35,000dol. jobs. Still, this should not mean that a flood of Old Country draughtsmen should be turned upon Western Canada. Rather let them filter through to us from the East, where they can be more readily assimilated into the new order of things.

It may be of interest to you to know that we have a very enthusiastic local chapter of the Royal Architectural Institute of Canada in Saskatoon, which meets twice a month, once for a business meeting and once for a luncheon, and which does very fine work in making us pull together for the good of the profession.

On this point alone we have the Old Country architects skinned (picturesquely speaking), and we are not afraid of meeting each other on the street, as in cases we have known in the olden days.—We are, etc.,

THOMPSON AND CROCKART.

Masonic Temple, Saskatoon, Nov. 15, 1913.

THE RIGHT HON. JOHN BURNS AND THE EAST BIRMINGHAM TOWN-PLANNING SCHEME, 1,400 ACRES—THE OTHER SIDE OF THE QUESTION.

SIR,—I read in the *Birmingham Daily Post* of the 26th ult., that Mr. Burns, at a conference held at the Caxton Hall on Nov. 25, said that "two hundred local authorities were town planning, or thinking about town-planning schemes," and then suggested that "the eighty Greater London authorities might do worse than take the Birmingham methods, plan, and procedure as a model."

Mr. Burns cannot be aware of what has taken place with regard to the East Birmingham Scheme, the second to be approved in this country, and the first to deal with land in a populous district committed to prior schemes of development. The arbitrary, unfair, and unreasonable treatment of such lands by the Local Government Board, without benefit to the scheme, so incensed the owners that they attempted the ponderous but only appeal—viz., to get an Address presented to the King by Parliament to revoke the scheme. With this object they circularised every Member of both Houses of Parliament, interviewed Members, and received sympathy and promises of support; but the scheme was laid on the table of the House at the fag-end of the Session, when the Revenue Bill was under discussion, so

that Members who kindly interested themselves and our Parliamentary agents found it was an impossibility to get an Address presented within the prescribed thirty days, and then an inquiry would have to be first held.

Every surveyor in Birmingham condemns the treatment, and so does every solicitor and man in the street that I have spoken to.

I am surveyor for four estates within the area, comprising about three quarters or more of the land that was being developed by twelve out of fifteen new roads in the whole area. On two of these estates, at the time of the application for the scheme (November, 1910), artisans' houses were being built at the rate of about 150 or more a year, and in ever increasing quantities; the development, I believe, was unexcelled in this city, and such that the houses could be let at 6s. 9d. a week, always with three bedrooms, often a bathroom, and hot water upstairs, never less than an average of five yards frontage, including the passage to each block, in common with others, the land averaging 45 to 50 yards, sometimes 60 or more, in depth. A pride was taken in this development for artisans' houses, a model development, but unadvertised, which complied with all and more than the requirements of the Act. I have only disposed of land for three new houses on these two estates during the last three years, and forty-seven on another estate; but they are all of a somewhat larger type, at higher rents, and nearer the outskirts of the scheme, fronting old roads.

On one of these estates there is a block of thirty acres in Saltley being developed by five roads, some by order of the High Court (the money has been lying in the bank to complete since 1907), and some to the satisfaction of a surveyor appointed by the Board of Agriculture; there is not one inch of old road frontage. Saltley is the hub of the manufacturing portion of the city, near immense works, including the Metropolitan Carriage Works, the Birmingham Gasworks, etc., where thousands of men are employed. Not a single inquiry has been made for land for building houses for the last three years, yet a builder who had previously built a number of houses thereon, who had plans approved for twenty-four more, and had started on twelve, removed his poles, fencing, etc., and cleared off to another town; and this where houses are so badly wanted so that workmen are paying higher rents and travel further. I am told frequently two families live in one house. I believe 200 houses could be let within a week of the arrival of the first load of bricks, and more than as many again before the roofs were on. This land is now a wreck, overrun with trespass, and the fences burnt; it was a fertile market-gardening land, and by another Act of Parliament the owner is compelled to pay Undeveloped Land Duty, with the object of forcing development!

On the remaining sixty acres, about the centre of the area, part being developed by five other roads, a builder who had erected between forty and fifty houses during the twelve months previous to the application, and had his plans passed for twenty-four more, reluctantly had to give up. He could not get the money, although he had verbally agreed to take the land.

Soon after the application, on the same estate, a builder sent in plans for six rather larger houses, with bathrooms, etc., and 300 square yards of land to each house. The first committee made a new unworkable regulation, contrary to the usual construction, and refused the plans (this accounts for sixty houses arranged for and not built on this one estate), after repeated requests, without effect, to the first committee. A new committee was formed about twelve months afterwards who abandoned this regulation; but after this refusal, together with the procedure, lawyers could not advise their clients to finance builders, to be subject to such arbitrary treatment. Men with bright sovereigns in their pockets will not buy themselves into trouble; so, by unfair treatment and taxation, artisans have to pay higher rents.

At the inquiry we laid our case fully before the Inspectors, and in reply to the Board's two subsequent statutory advertisements, repeated our objections in writing, each time with greater force and detail, yet not one single request was granted by them on the four estates more than had been previously granted by the committee, although it requires no special skill to see the injustices. With respect to the estate I have described, which is being developed by the ten new roads, the treatment is so cruel, arbitrary, and unfair that I appealed most urgently to the Board, offering in writing to be satisfied with less than that granted to others.

It seems incredible; but it is not quite so bad as it looks. There are excuses; it was an experiment at other people's expense, without any independent arbiter. The work was new to all parties; time and attention which might have been given to the requirements of the scheme, and consultation with owners, appears to have been given more to complying with the rules, regulations, notices, and meetings, etc., which the town clerk safely piloted the committee through. The application for the scheme appeared rushed by the first chairman of the first committee, an enthusiast, in response to some letters in the newspaper at a time when the corporation officials were overhead in work in connection with the Greater Birmingham scheme; this, together with the cumbersome procedure, caused much delay. The committee were, no doubt, anxious to avoid another long delay, and made the mistake of again apparently rushing the matter, and advertised the Draft Scheme to be in time for the approval of the city council before the 1912 summer holidays, without first giving the owners an opportunity of seeing it and pointing out the defects, although the Act provides that landowners are to be consulted at every stage. In the circumstances there was a good deal in favour of such a course, and we were told to send all our objections to the Local Government Board, who would carefully consider them, probably thinking that as the Board had offered their advice to town-planning committees, they would go into and deal with these questions, evidently oversights; but as far as these four etates are concerned the Local Government Board evidently believing the committee knew local requirements better, simply endorsed what the committee had done, and so, between the two, the landowners were let down; yet these questions mean loss of thousands of pounds, and were not detrimental to the scheme, showing that the Board is so overworked with the numerous schemes that they had no time to go into details.

I have been told that the Board is not a judicial tribunal; but I submit that, having included lands committed to prior schemes of development, to which there were no objections, and contrary to the requests of the owners, and having themselves established a standard, they ought to take the trouble to go sufficiently into detail to see that they do not deny to so great an extent to one owner that which they have given to another.

It appears the moment landowners, at a statutory meeting, approve an application being made, the development of their estates passes mainly into the hands of the committee and the Local Government Board. They may have confidence in the first committee; but an election may change the committee, the majority of which might be fresh to the work, and composed of faddists or persons holding impractical and preconceived notions, without experience, to be educated at the owners' cost. The Local Government Board might simply endorse their scheme, it thus becoming equivalent to an Act of Parliament.

In case it may be thought that I am prejudiced against town planning, the following is an extract from a letter, dated Dec. 2, 1910, to my principal client in East Birmingham, written three weeks after the application for the scheme: "I am in favour of town planning, even enthusiastic"—as I know the necessity of it; but I added, "The procedure is so complicated and cumbersome in carrying out, one does not know what may happen, though, I think, in the long run Birmingham schemes will be carried out with reasonableness."

It is easier to criticise than construct. Towns have been muddled together long enough, especially where there are many owners; but to give confidence there ought to be some independent, competent arbiter who can land the costs of improper requests on the party making them; but, with the exception of the laying-out of main roads, and the number of houses per acre, it appears to me the other benefits of town planning could be more easily obtained, and made of much more general application, by carefully-considered model by-laws, when landowners, builders, lawyers, and others would know where they were. I urged this view on the Surveyors' Institution when the Bill was under consideration. You will find it was recommended by them.

The few developing landlords in East Birmingham having been thus experimented upon without any practical appeal, for the general good of the country, and as Parliament could not give them their promised hearing, owners are entitled to expect some consideration, such as the appointment of a competent person to inquire into the questions and report what amendments should be made to the scheme, without delay. Such an act, freely made, would restore the necessary confidence. I should not object to the present chairman, or the city surveyor, now they know the facts, or the county surveyor. The matters are quite easy of settlement by a few minutes' conversation on the ground.

I am aware I have great odds against me; but I have justice on my side, which I know all really want.

Some owners, in the more remote parts of the area, profit by the scheme, their land being opened up by the projected new ring road, etc., and they have the double advantage that they are not compelled to go to the expense of developing their back lands; but on the estate mentioned eight of the ten new roads are obliged to be completed, at a total cost of about £15,000.

It is a mistake to suppose landowners are antagonistic to town planning. It is the methods they dislike. They are blamed for overcrowding and everything that goes wrong socially, and unnecesary obstacles are put in the way of development. Small and large houses were originally crowded together all the world over for mutual protection, and because everyone had to walk. Owing to legislation and by-laws, even two houses can not be built on two acres of wholly back land without first getting the authorities' approval for a new road, which in this city costs about £400 an acre, more or less, without the cost of land for the approaches.

Many surveyors to local authorities appear to have vied with each other in recent years to see who could design the most expensive road, causing a great waste. These things, which landowners have little power over, make it more difficult for the population to grade up from the slums.

As to the South Birmingham proposed scheme of 8,000 acres, the owners being a strong body, and knowing through their surveyors of the methods, procedure, etc., in East Birmingham, recently voted against the application being made.

I cannot suppose the Local Government Board would deal more harshly with my clients because I have made these statements public. I write this letter purposely without their knowledge, so that, if I saw their interests were likely to suffer in consequence I should immediately resign the agencies, two of which I and my forefathers have held for over a hundred years.—I am, etc.,

Richard Fowler, F.S.I.

118, Colmore-row, Birmingham.

The death occurred on November 11 of Mr Henry Benallick, who has been for the past 20 years one of Guelph's foremost contractors. The deceased was born in Truro, Cornwall, England, in 1843, and went to Canada when a young man.

The parishioners of St. George's, Gravesend, are about to apply for a faculty for the erection in the east wall of the Jewish Church of two stained-glass windows in memory of the Princess Pocahonta. The expenses, £400, will be defrayed by the Virginia Branch of the Colonial Dames of America.

LEGAL INTELLIGENCE.

CONTRACTOR'S CLAIM ON LLANDUDNO COUNCIL. An action in the High Court between Mr M A Boswell the contractor for the Craigy-don sewerage works and the Llandudno Urban Council which was expected to come on this week in London has been settled The contract also included certain works of surface drainage The plaintiff claimed £2 500 the greater part of which was for extra piling and pumping on the West Shore owing to the ground through which the sewer had to be laid proving to be quicksand to a greater extent than was expected The settlement was on the basis of the council paying £2 050

FOX v INLAND REVENUE COMMISSIONERS The award of the Official Referee, Mr H M Cobb F S I in this appeal has just been issued Mr E E Fox appealed against the provisional valuation of a residential property at Hawk's Hill, Leatherhead. The appellant, Mr. Fox, purchased the property for £3 000 and two months later disposed of it to Mr Salaman for £4 500 making a profit of £1 500 The provisional valuation served on Mr. Fox placed too low a value on the property which meant that he would be saddled with increment value duty The appellant claimed a gross value £5 091 total value rental £270, at 18 years' purchase), £4,860; showing full site value of £4 545 and an assessable site value £4 314 The Commissioners submitted figures showing a gross value £4 056, total value £3,825, and full site value, £3,583. Mr. Cobb, in his award, settles as follows Gross value £4 629 total value, £4 398 difference between gross value and value of the fee simple of the land divested of buildings and trees, £621; full site value, £4 008, assessable site value £3 777

MANCHESTER BUILDER OBTAINS A RULE AGAINST THE CORPORATION On Tuesday Mr Justice Bray and Mr Justice Lush hear an ex-parte motion by Mr. Rayner Goddard on behalf of Mr Thomas Henry Halsall, builder, of Smedley-lane, Cheetham, Manchester, for a rule nisi for mandamus calling upon the Lord Mayor and corporation of Manchester to consider and determine certain plans. Counsel said plans were submitted to the corporation on August 13 with reference to the laying out of certain new streets within the city. Mr. Halsall submitted plans earlier in the year and they were approved by the corporation, but it was afterwards found unpracticable financially to excavate to the gradient shown on the plans. Other plans, showing streets to be cul-de-sacs, were accordingly submitted in August; but they were rejected on the ground that they were not satisfactory under by-law 3 That by-law stated: "Every person who shall lay out a new street shall lay out such street free from any erection thereon, and at such level as will afford the easiest practical gradient throughout its entire length for the purpose of securing easy and convenient means of communication with any other street or intended street with which such new street may be connected, or may be intended to be connected, and as will allow of compliance with the provisions of any public or any local statute or by-law in force within the city for the regulation of new streets and buildings." In these circumstances, added counsel, the corporation thought that the builder must have regard to a street or streets which might at some time be laid out or intended to be laid out at the end of the cul-de-sacs, but that could not apply because there could be no other street or intended streets with which these cul-de-sacs could be connected. Their Lordships granted the rule

BUILDERS' CLAIM IN ARBITRATION. In the King's Bench Divisional Court recently, Justices Bray and Lush had before them a motion by Mr W M G Singer, of Norman Court, near Salisbury, to set aside the award of an arbitrator (Mr. H. H. Wigglesworth) in a dispute between Messrs. Trollope and Colls, Ltd. (builders) and himself. Mr. Sankey said it was an appeal by Mr Singer to set aside an award of the arbitrator or remit it to him. The dispute had reference to certain repairs to Norman Court, and the main grounds of the appeal were that the arbitrator acted in excess of his jurisdiction, and that there was an error on the face of the award. The arbitration went on for an unconscionable time, and the award complained of was made on May 1 last, in favour of the builders. The claimants in the arbitration —Messrs Trollope and Colls, Ltd.—were well-known London builders, and two contracts between them and Mr. Singer were discussed There was a contract dated Feb 12 1909 under which the building operations and the arbitration proceedings took place, and by that contract the builders were to carry out certain alterations to Mr. Singer's mansion for £7,789. Subsequently there was another contract, of which time was the essence, and eventually a dispute arose, which went to arbitration. Their lordships heard what Mr. Hudson had to say for the builders, and adjourned the hearing pending the decision of a special case to be stated before another Judge. The special case was heard by Mr. Justice Channell in the King's Bench Division on Monday, when his Lordship decided the matter in favour of the builders, and entered judgment for them with costs.

ARCHITECT FINED FOR NON-DEPOSIT OF MODEL COTTAGE PLANS At Chelmsford County Bench on Friday, Mr. Arnold Mitchell, F.R.I.B.A., of 17, Hanover-square, W., who resides at The Vineyards Great Baddow near Chelmsford, was summoned by the Chelmsford Rural District Council for erecting a cottage at Great Baddow without first submitting plans. The cottage was not built for habitation, but as an example of what could be provided at a cost of £110. Mr. Naldrett, for the rural council, explained that on September 21 a Mr. Mitchell wrote to the surveyor of the rural council, Mr. Dewhurst, informing him that he was building an aviary on one of his paddocks at Great Baddow. Certain buildings, including aviaries, were exempt from the by-laws. Mr Dewhurst afterwards saw the plans, and inspected what was going on On September 22 Mr. Dewhurst wrote to Mr. Mitchell, pointing out that chimneys were being formed, which were not allowed in aviaries, and that the building was a model cottage to which the by-laws applied. The clerk was directed to write to Mr. Mitchell, informing him that the council could not accede to his request not to submit plans. On Oct. 27, Mr. Mitchell replied that he was advised that the cottage did not come within the by-laws, and the council decided to take proceedings against him. On November 5 Mr Mitchell deposited the plan which the council found were not in accordance with the by-laws in several respects; they offered, however, to license the building for one year, on condition that it was used for exhibition only Mr. Naldrett added that the fact that a building was erected for exhibition did not take it out of the by-laws, for if it were sold, or if Mr. Mitchell changed his mind, it might be inhabited. Mr J. Dewhirst, the surveyor, then gave evidence Answering Mr. Mold, who appeared for defendant, he said that there was never any secrecy with regard to the building. Mr. Mitchell mentioned to him that he was putting up a model cottage for a sum of about £110 Mr Mold That would be a cheap price for a good cottage habitable for the working classes I am not prepared to say that.—It is of an extremely original design The size of the cottage may be original, but the design is certainly not. The witness added the council were unanimous in asking Mr. Mitchell to submit plans; but on the resolution to prosecute, 13 voted in favour of the resolution and 6 against. At the meeting on November 11, after the plans had been sent in, Mr. Duffield, the clerk, advised that the matter should be allowed to drop. Mr. P. T. Harrison, borough surveyor, Chelmsford, said he had pointed out to Mr Mitchell that the building was a cottage. Mr. Mitchell originally came to him, under the mistaken idea that he was the official concerned. Mr. Mitchell said he did not wish to submit plans, because he did not wish the plans to be made public before the building was up. The witness did not suggest that Mr. Mitchell should describe the building as an aviary Mr A S Duffield clerk to the Chelmsford Rural District Council, also gave evidence In answer to Mr. Mold, witness said he advised the council to let the matter drop, as they had attained their object.—Mr. Mold said his client held the view that he could build a model for exhibition purposes only and that there was no obligation to submit plans. He was anxious to solve a very serious housing difficulty. The by-laws did not allow of the erection of buildings which were permitted in other localities. He therefore determined to build, simply and solely for exhibition purposes, a model cottage, to show people what could be done if the by-laws were amended. If the Bench were against him upon the facts, he submitted that, in a case in which a gentleman of position had a public-spirited object, it was too trivial a case to bring before the Court and that in their discretion the Bench might dismiss the case.—Mr. Mitchell said when he came to Baddow he found that it cost 8s. 4d. per week for a cottage for his gardener. He therefore thought he would try to erect a cottage to let at a less rent: but, after studying the local by-laws, he found he could not erect a cottage for habitation at £110, and therefore he decided to put up a model. His object was to show what could be built with only reasonable restrictions, and what could now be done in many other districts. He had never had any intention to break any by-laws and when he saw that the council had unanimously decided [illegible] his view, they were not necessary. The Bench convicted, and imposed a fine of 20s and costs

PROJECTING WALL IN THE STRAND. Before Mr. Justice Eve, in the Chancery Division, Mr. Hermann Appenrodt, occupier of 75, Strand, London, brought an action against the London County Council, which was heard on November 24 to 27, claiming a declaration that the wall [illegible] a party wall [illegible] premises was the property [illegible] was not a party wall [illegible] Defendants had no estate or interest in the wall, and other relief. It appeared that by a lease dated December, 1898, 75, Strand, and certain vaults were demised [illegible] Barney for a term of 99 years In 1901 the plaintiff became possessed of the premises for the residue of the term. Plaintiff said that under the Strand Improvement Act 1898, 76 Strand and other premises were acquired and by reason of those improvements the eastern wall of his premises was now an external wall throughout its whole height and depth. In giving judgment, Mr. Justice Eve said the question involved was the ownership of the wall which formerly separated 75 and 76, Strand. In his view there was appurtenant to the site estate of No. 76 some interest in the wall. The plaintiff had failed to make out a case that he was the sole owner of the wall, or that the defendants had no estate or interest in it. He (the Judge) thought they (defendants) had. The plaintiff had said he wished to have the extent of the right and interest determined. If the defendants wished a determination upon that, he (his Lordship) was prepared to insert in the order the conclusion at which he had arrived. If they did not, the proper course was to dismiss the action with costs. Mr. MacMorran said that left matters in a worse position than before, and he accordingly asked that the respective interests be determined Mr. Maugham said he should not ask for that. The Council had at present only resisted the action, and he did not know what attitude they would take up Mr. MacMorran: That means further action to have it determined what part of the wall is within your Lordship's decision.—His Lordship: The defendants do not wish me to do it. I must dismiss the action with costs.

IMPORTANT DECISION ON APPEAL AS TO UNDEVELOPED LAND DUTY.—In the Court of Appeal on Monday judgment was delivered by the Master of the Rolls and Lords Justices Swinfen Eady and Phillimore in the action Southend-on-Sea Estates Company Limited, v. the Commissioners of Inland Revenue In this case the company appealed from a decision of a referee under the Finance (1909-10) Act, 1910, on an appeal to him against an assessment for undeveloped land duty The company were the owners of certain agricultural land in the parish of Southchurch, which they had leased to one William Bentall for seven years from September 29, 1904. The lease contained a covenant reserving to the lessors liberty to resume possession of certain portions of the property, the lessors agreeing to allow for all land so taken an abatement from the rent of £2 per acre. It was admitted that the lessors did not, as a matter of fact, during the currency of the lease, require the land for building purposes. The Referee under the Finance Act held that the lessors had power under the covenant to resume possession of the land for building and for other purposes connected with the laying out of the land for building, and that, therefore, it did not come within the proviso to Section 17, Sub-section 5, of the Finance (1909-10) Act, 1910, the company being consequently assessable to the duty. Section 17, Sub-section 5, of the Act provides as follows: "Where agricultural land is at the time of the passing of this Act held under a tenancy originally created by a lease or agreement made or entered into before April 30, 1909, undeveloped land duty shall not be charged on the site value of the land during the original term of that lease or agreement while the tenancy continues thereunder. Provided that where the landlord has power to determine the tenancy of the whole or any part of the land the tenancy of the land or that part of the land shall not be deemed for the purposes of this provision to continue after the earliest date after the commencement of the Act at which it is possible to determine the tenancy under that power. On behalf of the company it was argued that as the company did not want the land for building, they had no power to resume possession, and that if the company had given notice under the covenant it could have been restrained by injunction from re-entering On behalf of the Crown, however, it was submitted that as the company had the power to determine the tenancy, the fact that it did not want to exercise the power was immaterial, for the company might want to, and had the power

to exercise it for building and other purposes. Mr. Justice Scratton, in the Court below, in dismissing the company's appeal, said that Section 17, Sub-section 5, of the Act assumed that the landlord had power to determine, which meant power under the lease absolute or conditional. He did not think that the fact that a landlord who had the power to determine did not desire to do so, made it impossible for him to determine that he was liable to the duty. From this decision the company now appealed. Mr. Hawke, K.C., and Mr. W. Allen appeared on behalf of the appellants, and the Attorney-General and Mr. Finlay for the Crown (the respondents). Their Lordships allowed the appeal with costs, holding that on the construction of the lease, and having regard to the provisions of Section 17, Sub-section 5, of the Finance (1909-10) Act, 1910, the appellants were not liable to be assessed in respect of the demised land during the currency of the lease.

LEADENHALL-STREET WIDENING. An arbitration has been held before the City Recorder in the claim made against the Corporation by the Fines Trustees, as to the compulsory sale of Nos. 59 and 60, Leadenhall-street for street-widening purposes. Mr. Freeman, K.C., and Mr. Courthope-Munroe appeared for the claimants; Sir Edward Clarke, K.C., and Mr. Duncan Wallace for the Corporation. For the claimants the value of the two houses used as a restaurant and offices was estimated at £14,076, with a customary allowance of 10 per cent. for forced sale, making £15,483 in all. Mr. Howard Martin, F.S.I., Mr. Howard Chatfeild Clarke, F.R.I.B.A., and Mr. Vigers, F.R.S.I., supported the claim. For the Corporation Mr. Samuel Walker valued the two buildings at £11,874, including 10 per cent. per cent. for forced sale. Mr. C. A. Lang (Messrs. Jones, Lang, and Co.) and Mr. Richard Ellis gave corroborative evidence. A settlement was made by mutual agreement at this stage, under which the Corporation pay £13,000 compensation and costs, while the claimants will receive and retain the rents until possession was taken.

At St. Austell Rural District Council meeting on Friday, Mr. S. R. Hooper, 28, of Malmesbury, Wilts, was appointed district surveyor, at a commencing salary of £120, in succession to the late Mr. J. H. Rowe.

The contractors for the proposed Hotwells Improvement scheme of the Bristol Corporation, Messrs. W. Cowlin and Son, of that city, are commencing operations this week. The contract period is six months.

The town-hall committee of the Manchester Corporation have appointed Mr. J. B. L. Meek, of Manchester, as deputy surveyor in the engineering department of the city surveyor's office, at a salary of £750.

Foot-passenger subways constructed by the City Corporation under Cannon-street at the junction of this thoroughfare with Queen Victoria-street were opened on Tuesday by the Lord Mayor. They have cost £15,000. Mr. Basil Mott, M.I.C.E., is the engineer, and the contractors were Messrs. Mitchell Brothers, Limited.

Mr. R. Bucknell, of the Local Government Board, will hold an inquiry in Birmingham on Monday next, into an application by the Corporation for power to borrow £3,563 for the new Weights and Measures offices which it is purposed to erect in Corporation-street, and £3,750 for the provision of an underground convenience at Aston Cross.

The annual election and banquet of the Central New York Chapter, A.I.A., was held on November 2 at the College of Architecture, Cornell University, Ithaca. The officers elected were: President, Samuel Hilger, Auburn; vice-president, Edwin S. Gordon, Rochester; secretary, H. L. Gagin, Syracuse; treasurer, Howard W. Cutler, Rochester; member executive committee, H. L. Brockway, Syracuse.

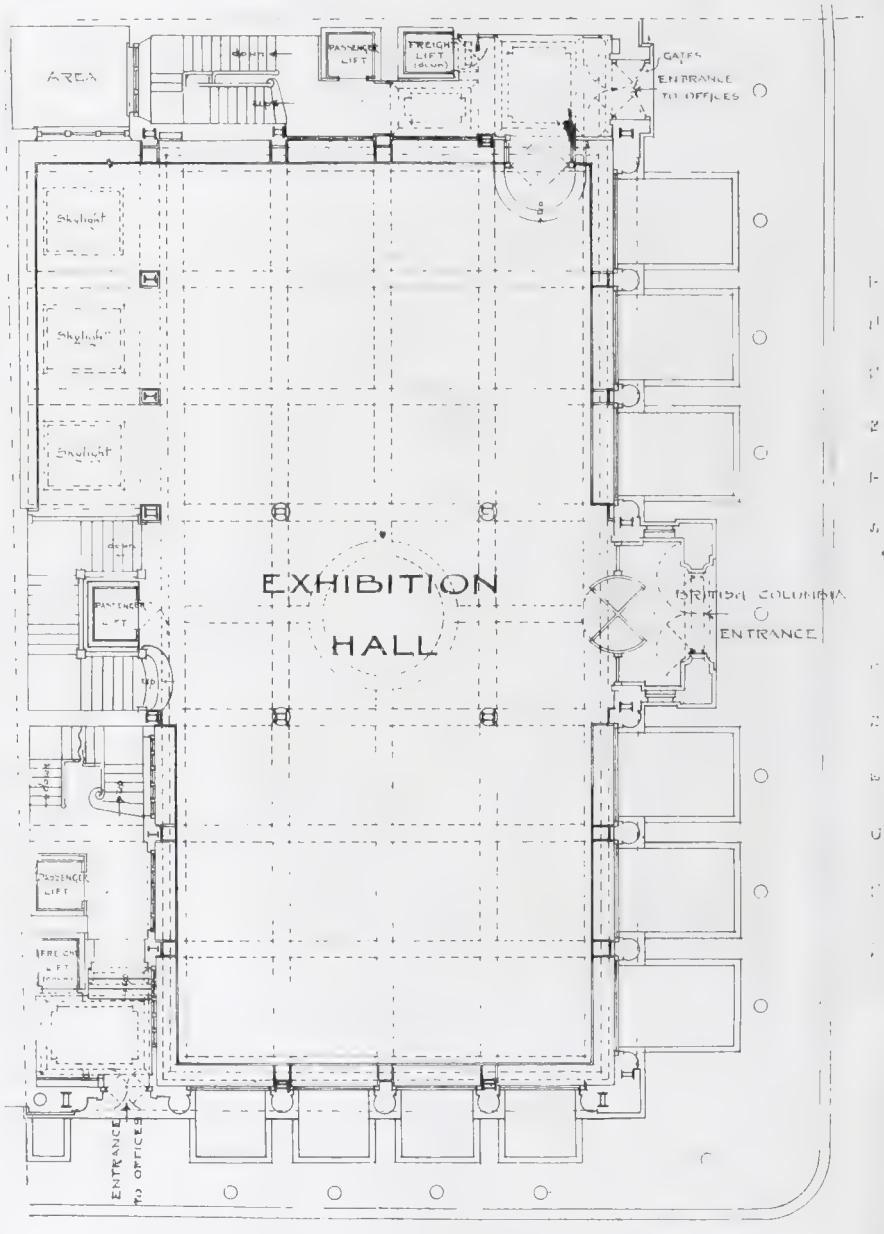
The offer of £15,000 by the Carnegie trust for the erection of four new branch public libraries in Nottingham was accepted by the city council on Monday. The proposal of the Free Libraries Committee is to acquire a site in the Meadows, one between Lenton and Radford, another to serve the district of Bulwell, Old Basford, and Coventry-road, and a fourth to serve Carrington, the Haydn-road district, and New Basford.

At Wednesday's meeting of the Carmarthenshire Roads Committee delegates who had interviewed the Road Board in London reported that the Board was willing to give £28,000, half of the estimated cost of repairing the surfaces of the trunk roads of the county, but refused any grant for straightening numerous curves, as they held that dangerous corners were a check on motorists' speed. The offer was, after some discussion, accepted.

Our Illustrations.

BRITISH COLUMBIA BUILDING, REGENT STREET, W.

This fine site has been acquired by the Government of British Columbia, at a cost reported at £75,000, to erect their Exhibition Hall and offices. The plot is situated at the corner of Regent street and Charles street. The ground floor will be occupied by the Exhibition Hall, 87ft. by 42ft., where will be placed exhibits of the products of British Columbia, as shown by the accompanying plan. In the centre of the front facing Regent-street the main entrance to this hall is to be placed, and from the hall the staircase and lift will lead to the offices to be occupied by the Agent-General to the Government of British Columbia. In Regent-street and Charles-street there will also be additional entrances leading by staircases and lifts to the offices on the upper floors. Well lighted storerooms will be provided in the basement, with freight lifts from the ground floor, one leading from Regent street and the other from Charles street. The Exhibition Hall will be treated with columns, pilasters, an enriched ceiling, and a marble floor. The style adopted for the exterior is in Italian Renaissance, with columns to the lofty ground floor story supporting the superstructure. A leading feature is the large enriched cornice at the fifth floor level. Between the windows immediately below this cornice carved panels, indicative of the industries of British Columbia, will stand out in bold relief. The front facing Regent street is broken by a central bay over the main porch. Surmounting the entrance in this porch the arms of British Columbia will occur, and on the porch will be placed a group of figures indicating Justice, Industry, and Progress. This group will be modelled and carved by an eminent sculptor. The fronts will be faced with Portland stone, and the Mansard roof with green slates. The building will be heated with radiators and fitted with electric light. The lifts will be on the "push-button" safety principle. The floors, roof, and staircase will be of fireproof construction, and there being a staircase at each end of the building, ample provision will be provided for escape in the event of fire. The architect is Mr. Alfred Burr, F.R.I.B.A., of 85, Gower-street, W.C.



BRITISH COLUMBIA BUILDING, REGENT STREET, S.W.

Mr. Alfred Burr, F.R.I.B.A., Architect.

UNIVERSITY COLLEGE, LONDON: NEW BUILDING FOR THE SCHOOL OF ARCHITECTURE.

The new buildings for the University of London include the new School of Architecture at University College, which houses

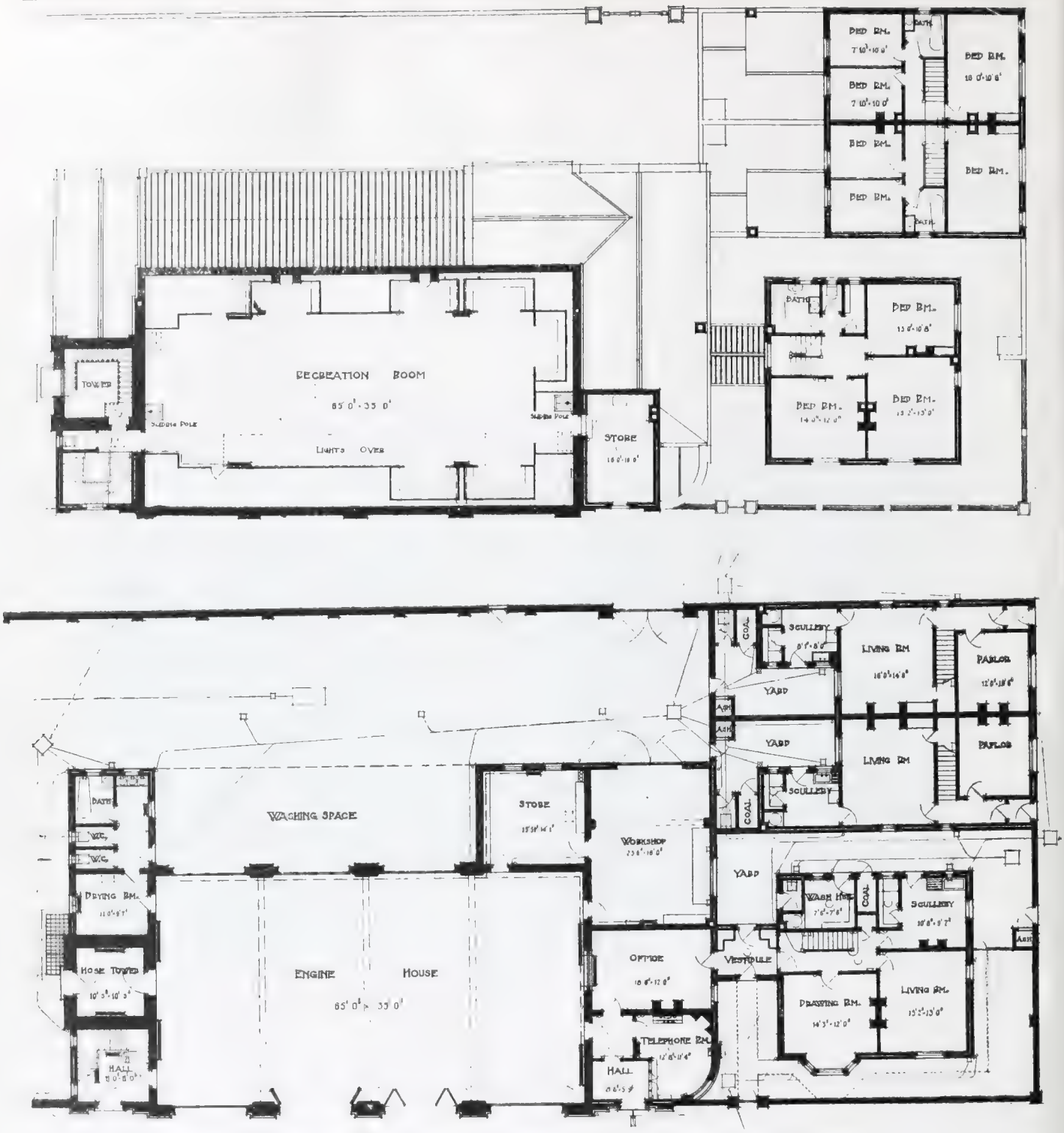
the combined schools of University College and King's College, and these extensions also will accommodate the Eugenics and Engineering departments in Gower-street. The Architectural School joins on to the north wing of the College, occupied by the Slade School. The elevation to Gower-street is faced with Portland stone, and is designed to harmonise with the design of the quadrangle. It is not, however, a copy of it, as the pilasters of the quadrangle are omitted, except in the pavilion. Small windows are added on the second floor, the levels of the floors are different, and some of the detail has been modified. The pavilion, which makes a good feature and gives a relief to the skyline, was a practical necessity on the quadrangle site, to stop the irregular roof outline of the existing north wing. It is the first of the four pavilions which are required to complete the front. By permission of the L.C.C. these project 1ft. 6in. beyond the building line. The principal lighting to the second floor on the Gower-street front is by a continuous skylight behind the parapet and the attic of the pavilion. The greater part of the back of the building faces the open space between the north wing and the new Chemistry Laboratory, and the windows here are as large as was possible. The majority of the doors and windows are in oak, also the treads and risers of the staircase. The contractors were Messrs. Perry and Co. (Bow), Ltd., who also executed all the Oregon pine fittings for studios, lecture-rooms, library, etc. The terrazzo dado on the staircase was executed by the Art Pavements and Decorations, Ltd.; it is of good colour and looks extremely well. The architect was Professor F. M. Simpson, F.R.I.B.A. This building for the School of Architecture of the University of London is the largest and most complete of its kind in the United Kingdom, and provides accommodation for over 100 students, and includes Three large studios (50ft. square, 35ft. by 22ft., 27ft. by 29ft.), for both ordinary and advanced students. A museum, 50ft. square. A cast gallery, 48ft. by 28ft. A library, 35ft. by 22ft. A lecture theatre, 46ft. by 28ft., with two screens for double lanterns. A classroom, 27ft. by 19ft. An entrance-hall, 27ft. by 19ft. There are also private rooms for professors and lecturers, a diagram room, dark-room, cloak-rooms, lavatories, and additional rooms for new developments, which can be utilised as required. It is intended to use some of these rooms at an early date for a Department of Town Planning. The cast gallery and studios are exceptionally well-lighted, and the latter are fitted with specially-designed working benches. The collections of books, models, samples of materials, casts, etc., already possessed by the two existing schools at University College and King's College are being considerably increased, and the equipment will be complete and thoroughly up to date. University College, owing to its central position, its Engineering Laboratories, Slade School of Fine Art, New Modelling Studios about to be constructed, School of Hygiene, Department of Archæology, and lectures and classes on general subjects, offers special facilities for a full and comprehensive course of architectural education. The view which we give of the whole façade in Gower-street, with the upper part of University College, surmounted by its well-known dome, showing above the recently erected and intended frontage buildings, was exhibited at the Royal Academy last season by Professor Simpson. The design of the original buildings, which were erected in 1827, was by W. Wilkins, R.A. (1778-1839), the architect of the National Gallery, which cost £100,000, and was built in 1832. The plans given among our illustrations to-day show the four main floors of this new School of Architecture.



CENTRAL FIRE STATION, BARROW IN FURNESS. RECREATION ROOM. MR. ARTHUR RACE, Architect.

NEW CENTRAL FIRE-STATION, BARROW-IN-FURNESS.

The accommodation provided in this building, as illustrated by the plans and photographs and elevations given to-day, is as follows: An engine-house, 65ft. by 35ft., with accommodation for four engines, fire-escape, hose-carrier, and ambulance van, the external doors to the engine-house being arranged to open and fold back automatically. Behind the engine-house is provided a washing space, 48ft. by 15ft., covered with a glass roof, supported by cantilever brackets, thus dispensing with the necessity for pillars. Conveniently arranged on the west side of the engine-house, and with separate access from the street, is a duty room 14ft. by 12ft., in which the telephonic apparatus is placed, this room being arranged so as to overlook the engine-house, and to be adjacent to the superintendent's office, 18ft. by 12ft. A workshop, 22ft. 6in. by 18ft., and a storeroom are also provided. On the east side of the engine-house is the hose-tower, a bathroom, and lavatory accommodation. The whole forms a square and compact block. Without increasing the height of the buildings a comfortable recreation room has been economically provided in the roof, this room being entered from a separate staircase having access from the street and engine-house. Automatic opening manhole doors are fitted in the floor of the recreation room, and sliding-poles connect this room and the engine-house. Detached from the station, but connected by a covered passage, there is a house for the superintendent, containing sitting-room, dining-room, kitchen, pantry, bathroom, and three bedrooms, and fronting upon the side street are two cottages for the whole-time engineers. A switchboard has been constructed, upon which are placed direct telephone call-bells from the various works in the town that have been connected, and from all licensed places of amusement, etc. Upon receipt of a "call" the officer on duty can instantaneously ring up the whole of the men at their houses, and also summon the men from the recreation room and the engine-house. A switchboard controlling the electric lights in the building and yard is also arranged on the same board. The workshop is provided with a motor-pit, and a steel overhead beam and suspended travelling crane, blacksmith's hearth, lathe and drilling machine, for executing necessary repairs on the spot. The hose-tower is 10ft. square inside, with a clear height of 50ft., around which a concrete staircase is constructed, and provision is made for hoisting the hose and drying same. This tower will also be used for fire-drill. A drill-yard containing 645 square yards, is supplied with a water-tank and hydrant, fed from a 6in. main. The materials used in the construction of the buildings have been selected with regard to first and maintenance costs, and to the fact that in times of fire-drill the exterior of the station will be subject to pressure of water from powerful fire-engine pumps. The external work is of Huncoat and Askam bricks, relieved with buff terracotta dressings. Terracotta was chosen partly on account of its suitability under circumstances previously described, and partly owing to it being necessary to introduce a certain amount of ornamental work, which would be done in ornamental terracotta at about the same rate



CENTRAL FIRE STATION, BARROW IN FURNESS. Mr. Arthur Race, Architect.

as plain terracotta. The roofs are slated with green Westmorland slates. The floor of the engine-house is paved with "Adamant" concrete on a bed of concrete, and the yards are constructed of concrete in situ. The floor of the telephone room is of "Terranant," and the superintendent's office and the recreation room are floored with pitchpine block on concrete. The walls of the engine-room are lined internally with glazed bricks. The building is heated on the hot water low-pressure system, with wrought iron pipes and radiators, and the ventilation is on an approved system. The buildings are lighted throughout by electricity. The cost of the station complete, excluding land, is about £6,000. The land cost £1,449. The contractors for the work were: Excavator, drainer, concretor, bricklayer, and terracotta setter, Mr. Joe Neal. Carpenter and joiner, Mr. H. Britton. Slater and plasterer, Mr. W. H. Paul. Ironfounder, Messrs. T. Blackburn and Sons, Preston. Plumber, painter, and glazier, Mrs. M. A. Ross. Mason, Mr. G. Varley. The terracotta work is Burman tofts, made by the Leeds Fire Clay Company. Mr. T. P. Tyson was clerk of works. The buildings have been designed and carried out by the borough engineer and surveyor's department, under the supervision of Mr. Arthur Race.

"KING'S" CHAPEL ENTRANCE AND THE FOUNTAIN COURT, TRINITY COLLEGE, CAMBRIDGE.

Last week we gave four views from Cambridge chosen from the set of sketches in black and white for which "the Club Prize" of the Royal College of Art Sketch Club was awarded to Mr. W. M. Keesey, A.R.C.A., of Bedford Park, one of the masters of the Architectural Association Schools, Westminster. To-day we give two other drawings from the same series, also from Cambridge, graphically representing two subjects familiar to all who have visited this University.

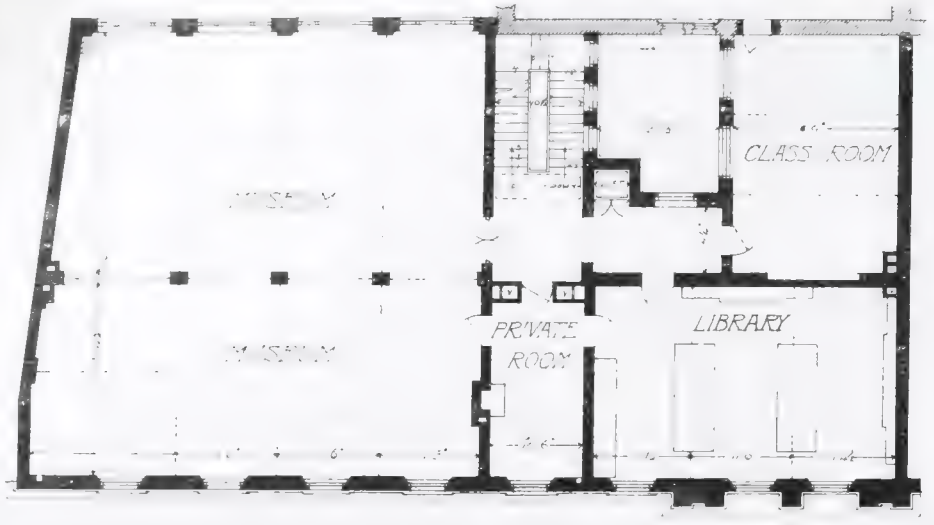
CHIPS.

The late Mr. John George Marston, of 175, Mere-road, Leicester, builder, left personalty amounting to £28,257.

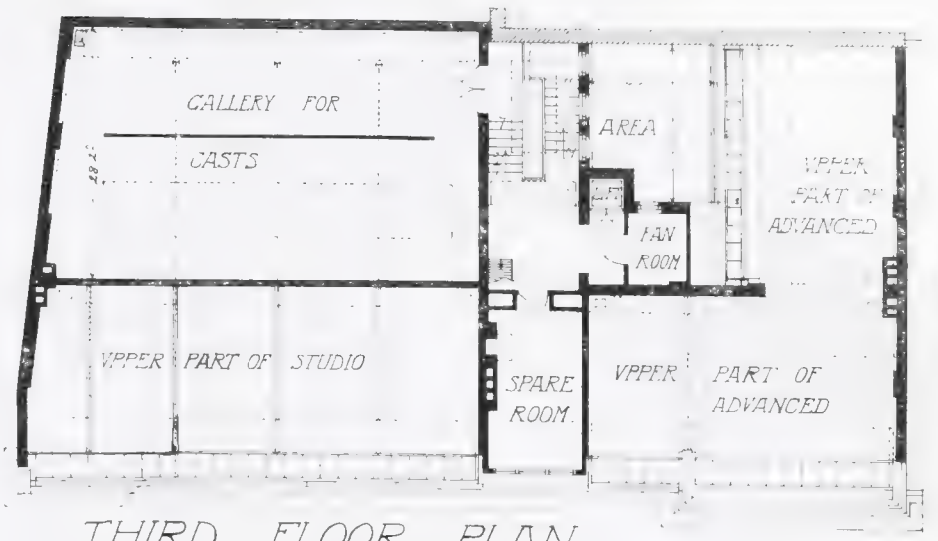
A committee of the Chelmsford corporation has been appointed to report upon any sites which may be available for a new town-hall and municipal offices.

Messrs. S. Douglas Meadows, J. Rowland Hill, and Thomas Jones have been appointed architectural assistant and first and second engineering assistants, respectively, in the Ipswich borough engineer and surveyor's department.

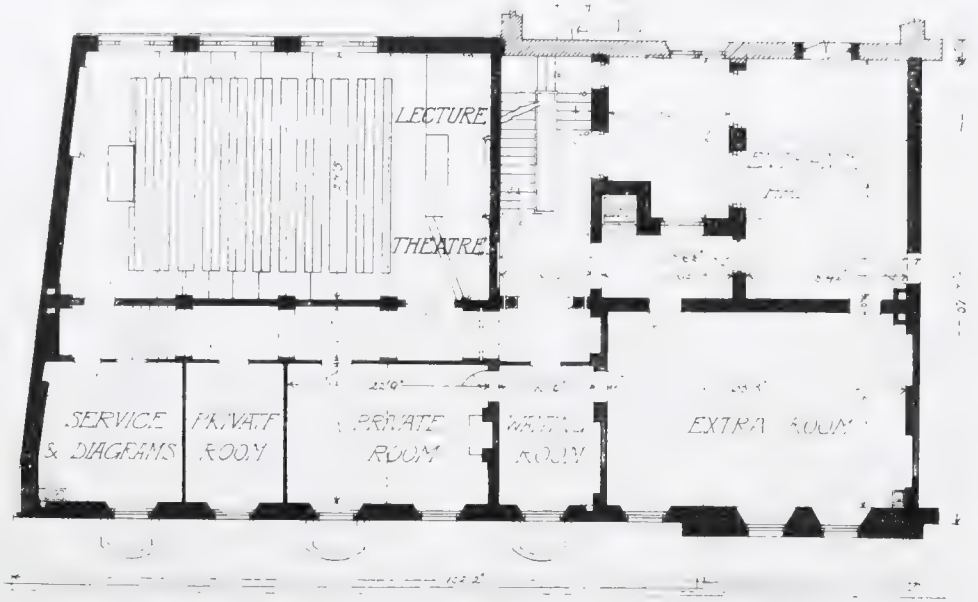
At a meeting of the Royal Society of Painters in Water Colours on Saturday, Mr. Alfred Parsons, R.A., landscapist, was chosen as President in succession to Sir Ernest Waterlow, who resigned the post for reasons of health. Mr. Parsons, who is 66 years of age, was elected a full Academician two years ago. Mr. Frank Brangwyn, A.R.A., whose vigorous seascapes are so well known, was elected on Monday night to the Presidency of the Royal Society of British Artists, in place of the late Sir Alfred East.



FIRST FLOOR PLAN



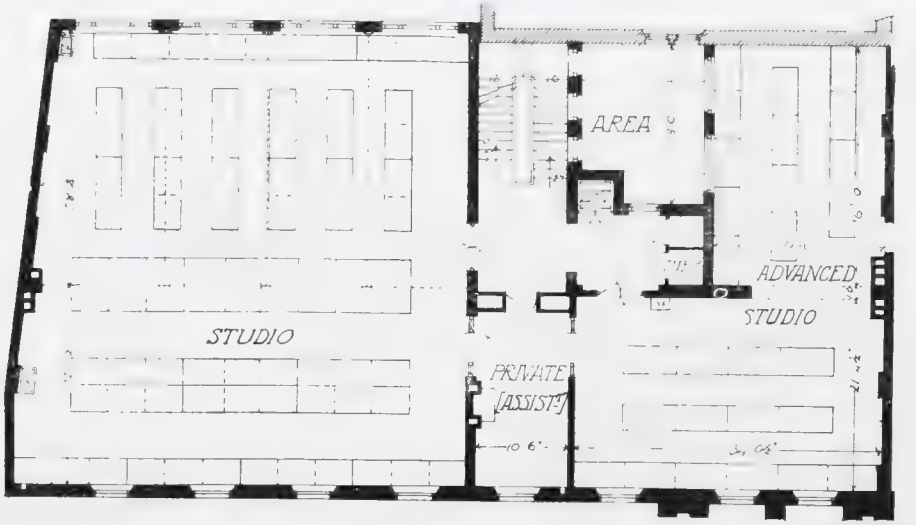
THIRD FLOOR PLAN



GROUND FLOOR PLAN



PROF. F. M. SIMPSON, F.R.I.B.A.
ARCHT. UNIV. COLL. LOND.
GOWER STREET, W.C.



SECOND FLOOR PLAN.

UNIVERSITY OF LONDON: NEW SCHOOL OF ARCHITECTURE.—Professor F. M. Simpson, F.R.I.B.A., Architect.





BRITISH COLUMBIA BUILDING, REGENT STREET, S.W. [illegible] F.R.I.B.A. Architect.



ARCHITECTURE. EUGENICS. ENT

UNIVERSITY COLLEGE, UNIVERSITY OF LONDON: NEW SCHOOL

Professor F. M. SIMP



TE TO QUAD. ENGINEERING.

ARCHITECTURE AND FRONT BUILDINGS IN GOWER STREET, W.C.

F.R.I.B.A., Architect.



"King's" Chapel: Entrance.



The Fountain Court, Trinity College.

CAMBRIDGE.

ROYAL COLLEGE OF ART SKETCH CLUB.—THE "CLUB PRIZE" SET OF SKETCHES IN BLACK AND WHITE.—By Mr. W. M. Keesey, A.R.C.A.

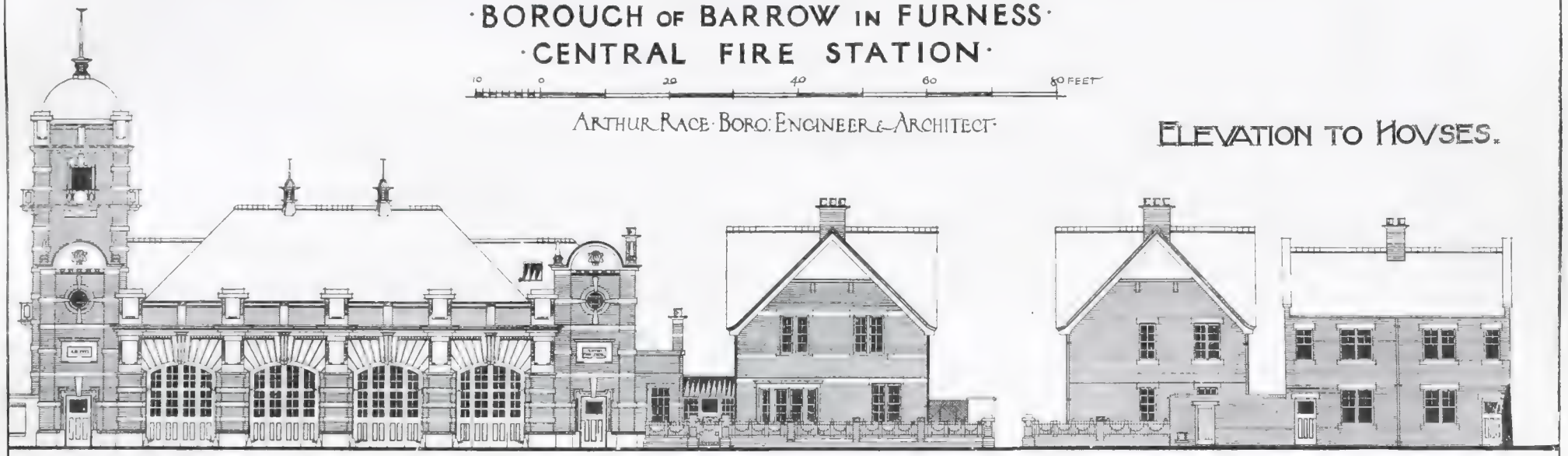


CENTRAL FIRE STATION, BOROUGH OF BARROW-IN-FURNESS.—Mr. ARTHUR RACE, Borough Engineer, Architect.

BOROUGH OF BARROW IN FURNESS
CENTRAL FIRE STATION

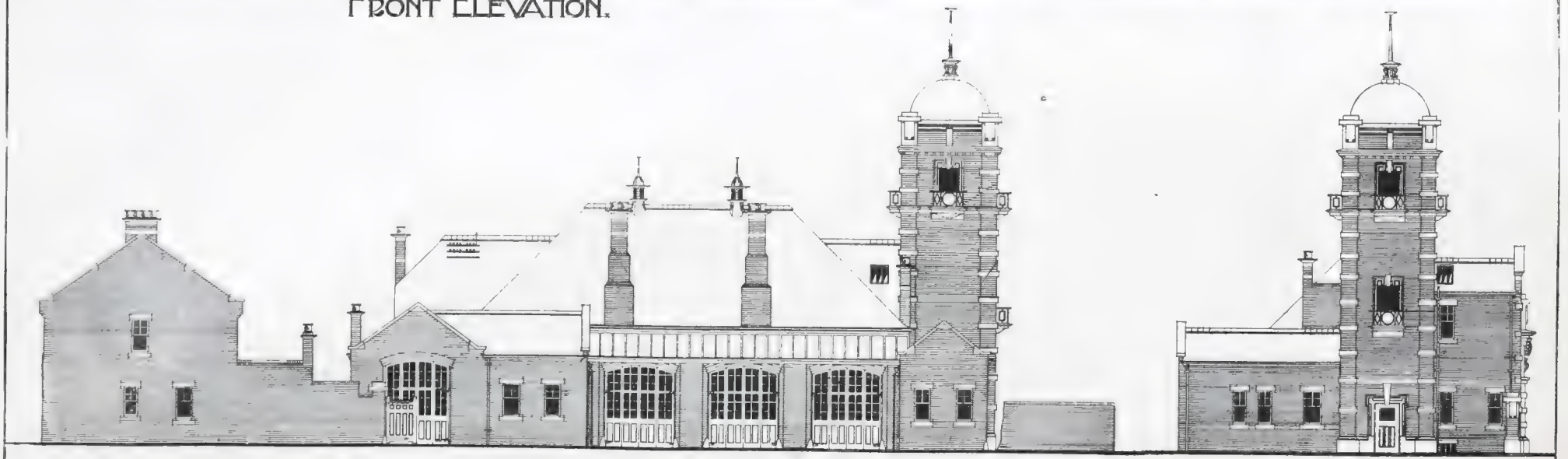
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ARTHUR RACE · BORO: ENGINEER & ARCHITECT



ELEVATION TO HOUSES.

FRONT ELEVATION.



BACK ELEVATION.

END ELEVATION.

PROFESSIONAL AND TRADE SOCIETIES.

ARCHITECTURAL ASSOCIATION OF IRELAND. The annual "Green Book" of the Architectural Association of Ireland has as frontispiece a characteristic portrait of the newly elected president, Professor W. A Scott, F.R.I.B.A., A.R.H.A., who is the son of an architect, and was articled, it states, to Sir Thomas Deane and Son, and afterwards passed a few years as assistant to the architect of the London County Council. In 1902 he returned to Dublin to engage in practice. His works include Shiddah Church, the O'Growney Mausoleum at Maynooth College, Enniskillen Convent Chapel, the hostel at Lough Dergh, additions to Lord Killanin's residence, the Diocesan College, Galway, and a garden-city near Kilkenny. The sixteenth annual report of the committee records that the revival of interest in the association, which was indicated in the last report, has been well maintained. The new members number ten, there have been two resignations, while four members have been struck off the roll under by-law 12. The total membership now stands at ninety-six, and seven candidates are awaiting election. Eight general meetings were held during the session. In the Class of Design the first prize was awarded to Mr. C. B. Ward, and the second to Mr. M. McCullogh. Mr. C. D. B. Ward also gained vice-president's prize. The employment register has been largely availed of, and employment has been found for every member whose name was placed thereon. The annual excursion was held at Liverpool, when a most interesting programme was arranged by Professor Reilly. The lecture-hall has been redecorated and improved, and the question of enlarging it is under consideration. The hon. treasurer's report shows that the association's financial condition has been much strengthened. Particulars are given of the classes of the association, at which lectures are given by Mr. George P. Skinner, Mr. J. Burke, and the visitors, Messrs. Caulfeild Orpen, Lucius O'Callaghan, and the president.

CORROSION AND RUSTING OF IRON.—Mr. Eric K. Rideal, in a paper read on Monday evening before the Society of Engineers, on "The Corrosion and Rusting of Iron," contended that one of the most prolific causes of accident in iron structures was attack by rusting and corrosion. It was only comparatively recently that the various factors going to make up the phenomenon of rusting had been systematically investigated. He favoured the electrical view, basing it on the principle that all metals show a definite tendency varying with the metal and the solvent to go into solution even in pure water. In this process the iron became electrically charged, the dissolved portion, in the form of electrified particles, or "ions," taking on an opposite charge. An electrical balance would soon be reached and solution stopped; but it was possible for equilibrium to be disturbed by the setting up of a large number of cells all over the surface of the metallic plate. These would consist of two metals in contact having a different tendency to go into solution, and thus a complete electric circuit would be formed and corrosion would take place. He therefore regarded the plating of iron with metals and the covering of their surfaces with paints and varnishes as means to prevent the formation of local corrosion cells. He held that the various methods of testing corrodibility were all open to criticism, while the effect of additions to pure iron had not been sufficiently well investigated for any definite conclusions on the subject to be drawn.

MEDIÆVAL ROOFS.—A lecture on "Mediæval Roofs," illustrated by lantern views, was given by Mr. F. E. Howard before the Royal Archæological Society on Wednesday. The varieties of roofs in the Middle Ages were, he observed, enormous; but the types, which merged into each other, might be generalised in two main divisions as those that were a dead weight on the walls and those that tended to thrust the walls apart. He feared there had been a misunderstanding on the part of many modern writers as to the principles of Mediæval roof construction, and this he attributed to failure to recognise the limitations that beset the ancient carpenters. The pegs that they used were useless to resist tension or strain. Moreover, the carpenters' trade was the most conservative in the world. Yet it seemed that with all the mistakes in construction, where there was failure it was the walls that failed, and not the roofs, and the rods across the nave under the roof that appeared in some pictures were solely for the support of the walls. Speaking of the barrel roofs of the West of England, the lecturer referred to examples of the thrust of the gables in the nave roof being met by the thrust of the aisle roofs, and, with strong walls, buttresses were of little use in these cases. The Devonshire roofs had a charm of their own, due to the curve of the rafters and rich carving. Somerset had no uniformity of construction; but a typical roof was flat and ornamented with small panels and elaborate carving. Some of the wide and lofty churches of East Anglia had roofs of much interest, with arched braces, hammer-beams, and buttresses, the wall-posts being brought down so that the thrust was conveyed through the roofs of the aisles to the buttresses. The Gothic builders would have succeeded in the perfect solution of a difficult problem if they had made the wall-posts strong enough.

THE PARTHENON TEMPLE. Mr. Banister F. Fletcher, F.R.I.B.A., in his lecture on the Parthenon at the British Museum, reviewed the historical events and the final victories of the Greeks over the Persians, 480 B.C., which led to the building of the temple. The Acropolis rock of Athens, no longer required as a military fortress, became the sacred enclosure of the gods. So the citizens voted supplies in the Assembly for the building of the Parthenon, and thus, in times of peace, architecture was called to the service of the State. "Architecture is an affair of material," Mr. Fletcher observed, for with the beautiful marble available at Athens architects and sculptors could create the harmonies of form and symmetry in column and architrave, roof and pediment, moulding and ornament, frieze and metope, colour and sculpture which go to the making of the most characteristic and perfect of Doric temples. Mr. Fletcher showed as lantern views the details of the frieze of the Panathenaic procession, which vibrates with Athenian life. Knights and musicians, priests and youths, matrons and maids, cavalry and chariots, magistrates and gods, all took part in presenting the new peplos to the maiden goddess.

ETCHING AND ENGRAVING.—At the Victoria and Albert Museum on Thursday evening in last week a lecture on this subject, illustrated by lantern slides, was delivered by Sir Frank Short, R.A. The origin of engraving might, the lecturer said, be taken as dating from the first part of the 15th century, the earliest date known on any print being 1446. He explained the special qualities of prints from intaglio plates, pointing out that a metal plate yielded a line varying from the faintest of grey to the most solid of black, and that all the lines on a proof from it were actually in relief. The various forms of engraving upon metal plates—etching, aquatint, dry point, stipple, and mezzotint—were described in detail. The lecturer laid considerable stress upon the proper printing of etched or engraved work, and condemned in strong terms the practice of leaving a large amount of printer's ink upon the surface of the plate, especially when this ink was distributed in an attempt to give tones that were not expressed by actual work upon the plate. Colour-printing was a hybrid art, without dignity of true engraving and with only an approximation to fine colour. Attention was drawn to the comprehensive collection of tools and materials used in etching and engraving on view in Room 74 of the Museum.

The rural district council of Bromley, Kent, at their last meeting approved of the plans and estimates prepared by Messrs. Alfred Williams and Son for the sewerage of West Wickham and agreed that application be made to the Local Government Board for their sanction to the borrowing of a loan of £5,465 for this purpose.

Our Office Table.

The French Ancient Monuments Act passed in 1887 is to be extended by a measure passed on Friday by the Chamber of Deputies. The new Bill provides for the publication every ten years of the list of "classified" monuments, and creates a new form of classification for monuments. In future no alteration in buildings of this nature will be possible without previous warning having been given to the Administration des Beaux Arts. Powers are given for the classification and, if necessary, for the expropriation of buildings in the neighbourhood of a historical monument which destroy its appearance or threaten its safety. If a proprietor objects to classification the matter will be argued before the Conseil d'Etat, and if that body decides in favour of the Ministry of Fine Arts the Courts may award the owner an indemnity for any damage he may suffer. The provisions of the law of 1887, dealing with the preservation of works of art belonging to public bodies and the State, have also been made more stringent.

At Monday's meeting of the Kent Education Committee a report was submitted recommending the reorganisation of the Works Sub-committee. It was proposed that Works "A" and Works B be amalgamated, and that the whole business of the department for the future be entirely under the architect, Mr. W. H. Robinson. That the architect should deal with all correspondence connected with the Buildings Sub-committee, and that in place of the present allowances made to the architect for his travelling expenses, an allowance be made sufficient to cover the expenses attached to the keeping of a motor-car. These changes to come into force on January 1, 1914. After a long discussion the report was adopted, with the addition that the allowance made to Mr. Robinson for a motor-car be £250 a year, in lieu of the present allowance of £73 10s., in addition to his salary of £400 a year.

The Birmingham City Council discussed at great length the recommendation of the general purposes committee that the additional £66,157 required for the completion of the Council House extension, be borrowed. This was submitted a month ago, when an amendment was adopted, referring the figures relating to the extension back to the committee for further and better particulars in reference to the cost of the work. The committee gave effect to that decision by bringing up a report giving voluminous details, and renewing their recommendation respecting the borrowing of the £66,157 necessary for the completion of the work. They now reported that all the expenditure on buildings and equipment had been authorised either by the council or the committee before the money was spent; that the final cost of buildings and equipment together was less than the accepted tenders, although there were several material alterations approved by the council—e.g., the use of Aberdeen granite in substitution for Norwegian granite; that the equipment was approved by the various departments concerned before it was ordered; and, finally, that all the contracts were let after competitive tenders had been obtained. The adoption of the report was moved by the Lord Mayor, and then Mr. Lancaster proposed an amendment in favour of borrowing £65,000, and giving special instruction to all spending committees that no capital expenditure should be incurred without the consent of the council having been previously obtained, except in case of urgent necessity. He criticised the action of the committee, suggesting certain matters in which, in his opinion, the committee had been extravagant, and urging that their management of the work of the extension of the Council House had been most unbusinesslike and careless. The defence of the committee was undertaken by Alderman Sir George Kenrick, Alderman Bowater, and the Lord Mayor, the contention being that the affairs had been managed in a businesslike way. The Lord Mayor referred to the length of time occupied

with the work, the changed conditions enforced upon the committee by Greater Birmingham, and the alterations made by the various committees. Eventually the amendment was lost and the original resolution carried.

Mr. John Wilson, architectural inspector, and Mr. A. J. Bain, chief of the Housing and Town-Planning Department of the Local Government Board for Scotland, conducted an inquiry on Friday into a scheme by Dumfries Town Council to demolish an area extending to nearly four thousand square yards of slum property in the centre of the town. It was stated by the medical officer of health, Dr. Hunter, that this was the worst slum area in the town. While the average death-rate of the burgh was 16 per 1,000 per annum, the death-rate of this area was 49 per 1,000, and in one of the closes which it contained it was 74. The houses for the most part were in an uninhabitable condition, and were intermingled with stables, bakehouses, and stores. Evidence was led to show that there was sufficient facility for the rehousing of the people who will be unhoused by the scheme, the carrying out of which is estimated to take two years. No objections were offered to the scheme.

The Local Government Board report as to their work in authorising loans for the erection of houses for the working classes since the passing of the Housing and Town-Planning Act. During the ten months of the present year ended October 31 the loans granted to local authorities for housing purposes under Part III. of the Housing Act of 1890 amounted to £484,947. These loans were to 58 urban and 37 rural authorities, and the number of houses to be built by each was 1,452 and 715 respectively. Besides this there are applications from 46 urban authorities for £370,828, and from 22 rural authorities for £45,983, now under consideration. In 1912 loans for building 2,284 houses were granted to the amount of £472,714 to 44 urban and 23 rural authorities. These figures were quadruple those of either of the two previous years. The amount authorised in 1910 was £108,848, and in 1911 £105,415, and the numbers of houses erected were respectively 534 and 412. In the last three years the local authorities report that 128,000 houses have been made "fit for human habitation" within the meaning of the Act.

"The Garden City," by C. B. Purdom (London: J. M. Dent and Sons, Ltd., 10, Bedford-street, W.C., 10s. 6d.), is a long account of the Letchworth settlement, fully illustrated. "The problem at Garden City," we are told, "is, then, the discovery of a new kind of town architecture," for which "endless experiment is necessary." So that, probably, the problem never will be solved. There is a good deal of information in the volume about the factories which have been located there, which, in its way, is interesting. As a whole, the book might have been condensed considerably with advantage.

Two useful works of American origin are published here by Messrs. Chapman and Hall, Ltd., 11, Henrietta-street, Covent Garden. The first, price 10s. 6d., is "Applied Mechanics," by Professor Charles E. Fuller, S.B., and Wm. A. Johnston, S.B., of the Massachusetts Institute of Technology. The second is "Outlines of Theoretical Chemistry," price 15s., by Professor Fred. H. Getman. Both are well suited to the needs of students of the respective sciences dealt with.

A trench 4ft. wide and 7.5ft. deep has been cut through the solid masonry and flint-rock concrete of the Pont Neuf, Paris, bridge structure with the aid of helicoidal wires and abrasive powder. The section trenched in this way, 550ft. in length, was found to be too hard to be attacked by tools, while explosives were excluded for fear of weakening the venerable arches. Four wire cuts were made in each of the three sections, each roughly 200ft. in length. An 18H.P. electric motor operated the continuous-belt cutting wires, which were held taut by weights, while abrasive powder was fed into the cut.

The Gravesend Corporation has recently been giving consideration to the desirability of acquiring an up-to-date motor engine for the fire-brigade, and, subject to the sanction of the Local Government Board, an order has been placed for a Merryweather petrol-driven "Hatfield" fire-engine. This type was selected after full consideration had been given to the merits of different designs, and after tests had been carried out at Gravesend with various makers' machines. The engine, which will have all the latest improvements, will be fitted with a powerful pump, capable of delivering 350 gallons per minute, with arrangements for discharging a "first-aid" jet for use with small fires. The chassis will also carry a 50ft. fire-escape. Other Kentish fire-brigades which have adopted the "Hatfield" motor fire-engine are Bromley, Chislehurst, Dartford, and Penge.

MEETINGS FOR THE ENSUING WEEK.

Friday (To-day). Northampton Polytechnic Institute. Annual Prize Distribution (by Cyril S. Cobb, M.V.O., Chairman L.C.C.) and Students' Conversazione. St. John-street, Clerkenwell. 6.30 p.m.
Institution of Civil Engineers. Students' Meeting. "The Liverpool-street Extension of the Central London Railway," by H. V. Hutt, B.Sc. 8 p.m.
Edinburgh Architectural Association. "Gardens," by Lawrence Weaver. 8 p.m.
Glasgow Architectural Craftsmen's Society. "The Great Church of Santa Sophia at Constantinople," by Professor C. Gourlay, B.Sc., A.R.I.B.A. 8 p.m.

Monday. Architectural Association. "Portuguese Architecture," by W. H. Ward, M.A., A.R.I.B.A. 8 p.m.
Victoria and Albert Museum. "Chateaux on the Loire," by Banister Fletcher, F.R.I.B.A. 5 p.m.
Royal Society of Arts. "Measurement of Stresses in Materials and Structures," Cantor Lecture No. 2, by E. G. Coker, M.A., D.Sc. 8 p.m.
Liverpool Architectural Society. "Originality in Classical Architecture," by Lionel B. Budden, M.A., A.R.I.B.A. 6 p.m.

Tuesday.—British Museum Lecture. "Sources of Greek Art," by S. C. Kaines Smith, M.A. 4.30 p.m.
Institution of Civil Engineers. Discussion on "The Transandine Railway." 8 p.m.

Wednesday.—Royal Society of Arts. "Application of Electricity to Agriculture and Life," by T. Thorne Baker. 8 p.m.
Institution of Civil Engineers. Students' Visit to the Royal Arsenal, Woolwich, S.E.
Manchester Society of Architects. "Some Aspects of Greek Architecture," by T. Fyfe.

Thursday.—British Museum. "Origin of the Corinthian Order," by Banister Fletcher. 4.30 p.m.
Society of Architects. "Courage in Colour," by R. Goulburn Lovell, A.R.I.B.A., Vice-President. 8 p.m.
Leeds and Yorkshire Architectural Society. "A Holiday in the Val d'Aosta," by T. E. Eccles, F.R.I.B.A. 6.30 p.m.
Architectural Association of Ireland. "Modern French Architecture," by P. Carl de Lafontaine. 8 p.m.
Victoria and Albert Museum. "Early Printed Books," by Edward F. Strange. 8.30 p.m.
Sheffield Society of Architects and Surveyors. "The Architectural Aspect of Town Planning," by Patrick Abercrombie, M.A.

Friday (Dec. 12).—Northern Polytechnic Institute, Holloway. "The Architectural Treatment of Colour in Building," by Ivor Beaumont, A.R.C.A. 8 p.m.
Glasgow Camera and Sketching Club. "Pictorial Composition," by A. G. Watson. 8.15 p.m.

The town council of Loughborough voted on Monday night an increase of £100 a year to the salary of the borough engineer.

Mr. F. A. Hilborn, a technical assistant in the Willesden engineer's department, has resigned, having obtained a more remunerative appointment as resident engineer at Lucknow.

The Molesey Urban District Council's scheme to acquire compulsorily 5½ acres adjoining the Thames towpath from Molesey Lock to Tagg's boathouse, for the purpose of making public walks and simple pleasure-grounds, was inquired into on Wednesday by Mr. E. Dudley, a Local Government Board Inspector. Opposition was offered on behalf of various interests abutting on the river, and by 500 ratepayers.

Trade News.

WAGES MOVEMENTS.

HIGH WYCOMBE.—The trouble in the chair and furniture industry resulted on Saturday in a lockout at most of the leading factories. The masters endeavoured, by forming themselves into a federation, to adjust the difficulty by offering standard rates of wages, but the men in the Union, through their representatives, refused to accept the terms. At midday on Saturday a lockout was declared, affecting between 3,000 and 4,000 men.

GUISELEY, WEST RIDING.—The masons of Guiseley, Yeadon, and Rawdon have sent to their employers a demand for increased wages—from 8½d. to 9½d. an hour as and from February 1 next, and a further additional halfpenny an hour on May 1 next.

The late Mr. Thomas Hodgson, of Lake Side, Keswick, retired builder, who died intestate, and a widower, left personalty amounting to £15,578.

Mr. A. C. Evelyn has been confirmed in the office of clerk and inspector of work in the Public Works Department, St. Kitts, West Indies.

Mr. Courtenay Clifton, Local Government Board inspector, held an inquiry on Friday night at Criccieth into the application of the urban district council for sanction to borrow £3,100 for the purpose of building sixteen workmen's houses.

The death has occurred of Mr. William Farnish, a well-known Bradford builder, who erected the Cartwright Memorial Hall, the Bradford Old Bank buildings, the post-office, and the Esholt sewage press-house. Mr. Farnish, who was sixty-four years of age, leaves a widow, three sons, and two daughters.

Sir Hugh Bell, Bart., the chairman of the Tees Conservancy Commission, cut on Monday the first sod of the roadway to be constructed between Port Clarence and Seaton Carew. The highway will afford a direct means of communication between the Hartlepools and Stockton and Middlesbrough.

TO CORRESPONDENTS.

It is particularly requested that all drawings and all communications respecting illustrations or literary matter, books for review, etc., should be addressed to the EDITOR of the Building News, Effingham House, 1, Arundel-street, Strand, W.C., and not to members of the staff by name. Delay is not infrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

Cheques and Post-office Orders to be made payable to The Strand Newspaper Company, Limited, and crossed London County and Westminster Bank.

Received.—R. F. W. and Son.—C. A. Co., Ltd.—M. and Co., Ltd.—J. B.—C. A. H.—G. and T. E.—V. A. and Co.—J. H. and Co.—T. G. S. and Son.—T. B. B., Ltd.—E. and R., Ltd.—N. E. R. Co.—F. H.—R. A. and Co.—S. and Co.—P. C. Co., Ltd.—E. P.—F. and J.—G. S. and Co., Ltd.—W. D. and Co., Ltd.—W. A. P.—A. G. T., Ltd.—J. B. J. and Co.—J. T. A.

Dado.—Yes.

T. T. H.—Please send.

Ionic.—Thanks; but we have no space open.

R. G. S.—1. Utterly impracticable, in our opinion. 2. No.

Country Architect.—We know of no such printed forms.

E. M. B.—It is not a dampcourse we care to use ourselves. We have known failures.

Gerardo.—As a rule we are seldom able to avail ourselves of such matter unless favoured with previous indications of its nature and scope; but we are always glad to consider definite proposals.

Theatre.—A series of articles on "Theatres," by Ernest A. E. Woodrow, A.R.I.B.A., appeared in the Building News for July 15 and 29, Aug. 5, 12, and 19, September 2, 16, 23, and 30, October 21 and 28, November 18, December 23 and 30, 1892 (Vol. LXIV.); January 27, February 10, March 10 and 24, April 14, May 26, and June 23 (Vol. LXV.), July 14, August 4 and 18, September 8, 22, and 29, November 10, December 1 and 29, 1893 (Vol. LXVI.); January 19 and 26, February 23, March 23, April 30, May 18 (Vol. LXVII.); July 13, 20, and 27, August 24, September 28, October 26, November 9 and 23, and December 7 and 28, 1894 (Vol. LXVIII.) All the issues have long since been out of print, but a few bound volumes are still in stock. At an earlier period, Mr. James George Buckle contributed to our pages a course of papers on "Theatre Construction and Maintenance," which are also out of print. Both series were republished by the authors in book form. The answer to your last query depends to some extent on individual circumstances.

LATEST PRICES.

IRON.

Steel Joists, Belgian and German (ex steamer, London)	per ton	£6	3	6	to	£6	5	0
Steel Joists, English		7	10	0	,,	7	12	6
Wrought-Iron Girder Plates		7	0	0	,,	7	5	0
Steel Girder Plates		7	2	6	,,	8	2	6
Bar Iron, good Staffs		6	5	0	,,	8	10	0
Do., Lowmoor, Flat, Round, or Square		20	0	0	,,	0	0	0
Do., Welsh		5	15	0	,,	5	17	0
Boiler Plates, Iron—								
South Staffs		8	0	0	,,	8	15	0
Best Snedshill		9	0	0	,,	9	10	0

Angles 10s., Tees 20s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £8 15s to £9.
Ditto galvanised, £14 to £15 10s. per ton.

Galvanised Corrugated Sheet Iron—

	No. 18 to 20.	No. 22 to 24
6ft. to 8ft. long, inclusive Per ton.		Per ton.
gauge	£13 0 0	£13 10 0
Best ditto	13 0 0	14 0 0

Wire Nails (Points de Paris)—

3 to 7	8	9	10	11	12	13	14	15	B.W.G
8/3	8 9	9/3	9/9	10/3	11/-	11/9	12/6	13/6	per cwt

	Per ton.			Per ton.
Cast-Iron Columns	£7	10	0 to	£9 0 0
Cast-Iron Stanchions	7	10	0 ,,	9 0 0
Rolled-Iron Fencing Wire	8	5	0 ,,	8 10 0
Rolled-Steel Fencing Wire	7	5	0 ,,	7 10 0
,, ,, Galvanised	8	15	0 ,,	9 5 0
Cast-Iron Sash Weights	5	0	0 ,,	5 5 0
Cut Floor Brads	9	15	0 ,,	—
Corrugated Iron, 24 gauge	16	0	0 ,,	—

Galvanised Wire Strand, 7 ply, 14 B.W.G. ..... 14 5 0 ,, —

B.B. Drawn Telegraph Wire, Galvanised—

0 to 8	9	10	11	12	B.W.G.
£10 10s.	£10 15s.	£11 0s.	£11 5s.	£11 15s.	per ton.

Cast-Iron Socket Pipes—

3in. diameter	£6	2	6	to	£6	7 0
4in. to 6in.	6	0	0	,,	6	5 0
7in. to 24in. (all sizes)	5	7	6	,,	6	0 0

[Coated with composition, 5s. 0d. per ton extra, turned and bored joints, 5s. 0d. per ton extra.]

Pig Iron—	Per ton.			
Cold Blast, Lilleshall	110s. 0d.	to	117s. 6d.	
Hot Blast, ditto	70s. 0d.	,,	75s. 0d.	

Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—

Gas-Tubes	75 p.c.
Water-Tubes	72½ ,,
Steam-Tubes	67½ ,,
Galvanised Gas-Tubes	65 ,,
Galvanised Water-Tubes	62½ ,,
Galvanised Steam-Tubes	57½ ,,

OTHER METALS.

Spelter, Silesian	Per ton	£20	15	0	to £21	0	0
Lead Water Pipe, Town		22	5	0	,,	—	
,, ,, ,, Country		23	0	0	,,	—	
Lead Barrel Pipe, Town		23	5	0	,,	—	
,, ,, ,, Country		24	0	0	,,	—	
Lead Pipe, Tinned inside, Town		24	5	0	,,	—	
,, ,, ,, ,, Country		25	0	0	,,	—	
Lead Pipe, Tinned inside and outside	Town	26	15	0	,,	—	
,, ,, ,, ,, Country		27	10	0	,,	—	
Composition Gas-Pipe, Town		25	5	0	,,	—	
,, ,, Country		26	0	0	,,	—	
Lead Soil-pipe (up to 4½in.) Town		25	5	0	,,	—	
,, ,, ,, Country		26	0	0	,,	—	
[Over 4½in. £1 per ton extra.]							
Lead Shot, in 28lb. bags		24	15	0	,,	—	
Copper Sheets, sheathing & rods		83	0	0	,,	83	10 0
Copper, British Cake and Ingot		78	10	0	,,	79	0 0
Tin, English Ingots		183	10	0	,,	184	0 0
Do., Bars		184	10	0	,,	185	0 0
Pig Lead, in 1cwt. pigs (Town)		19	5	0	,,	—	
Sheet Lead, Town		21	15	0	,,	—	
,, ,, Country		22	10	0	,,	—	
Genuine White Lead		30	15	0	,,	—	
Refined Red Lead		25	0	0	,,	—	
Sheet Zinc		29	0	0	,,	—	
Old Lead, against account		16	15	0	,,	—	
Tin	per cwt.	10	5	0	,,	—	
Cut nails (per cwt. basis, ordinary brand		0	11	3	,,	—	

TIMBER.

CONSTRUCTIONAL.

Yellow Pine Deals, Quebec, per standard:—	1st quality	£38	0	0	to £45	0	0
,, ,, ,,	2nd ,,	26	0	0	,, 32	0	0
,, ,, ,,	3rd ,,	16	0	0	,, 18	10	0
Spruce Deals: St. Johns		10	0	0	,, 11	10	0
,, ,, Miramichi		9	10	0	,, 10	10	0
,, Boards: Swag		11	0	0	,, 12	0	0
Red Deals: rchangel 1st quality		21	0	0	,, 24	0	0
,, ,, ,,	2nd ,,	16	0	0	,, 19	0	0
,, ,, ,,	3rd ,,	12	0	0	,, 14	0	0
,, ,, St. Petersburg—							
,, ,, ,,	1st quality	16	10	0	,, 18	0	0
,, ,, ,,	2nd ,,	14	10	0	,, 15	10	0
,, ,, Wyburg & Uleaborg		12	10	0	,, 15	0	0
Gefle, Gothenburg, and Stockholm		12	10	0	,, 17	0	0
White Deals: Crown		14	0	0	,, 15	10	0
,, ,, Seconds		11	10	0	,, 13	0	0
Flooring: White and Planed—							
1st and 2nd quality mixed		10	15	0	,, 11	15	0
1st, 2nd, & 3rd quality mixed		10	5	0	,, 11	0	0
Red Planed, 1st quality		14	10	0	,, 17	0	0
Pitch Pine: Prime Deals and Boards		18	0	0	,, 23	0	0
Lignum Vitæ	Per ton	7	0	0	,, 14	0	0

	Per cubic foot.						
Yellow Pine Logs (waney board)	0	5	0	,,	0	5	6
Pitch Pine Logs	0	2	0	,,	0	2	6
Birch: Quebec Logs	0	2	3	,,	0	2	9
Oak: Austrian Wainscot	0	7	0	,,	0	8	0
Mahogany: Gaboon	0	2	0	,,	0	2	3

FURNITURE AND HARDWOODS.

Teak: Burmese, per load, 50ft.	£20	0	0	to	£25	0	0
Teak: Java, per load, 50ft.	16	0	0	,,	21	0	0

	Per cubic foot.						
Oak Planks: U.S.A., imported	0	1	9	to	0	2	6
,, Boards ,, ,, Prm.	0	3	0	,,	0	3	6
,, ,, ,, ,, Mdm.	0	2	6	,,	0	2	9
Sequoia (Californian Redwood)	0	2	4	,,	0	3	6
,, ,, sawn planks	0	2	3	,,	0	2	9
,, ,, sawn planks	0	1	3	,,	0	3	0
Oak: Austrian Wainscot	0	7	0	,,	0	8	0
Walnut: Prime boards and planks	0	6	0	,,	0	6	6
Walnut: Mdm. ,, ,,	0	3	6	,,	0	4	6
Greenheart: Hewn logs	0	3	3	,,	0	4	0
Cedar: Cigar box	0	4	9	,,	0	5	6
Satin Walnut: Imp. sawn boards, prime	0	2	4	,,	0	2	9
Orham: Imp. sawn boards, prime	0	2	0	,,	0	2	3
Mahogany: St. Domingo, Cuba, and Honduras	0	6	0	,,	0	9	0
,, African, Assince, &c.	0	5	0	,,	0	6	6
,, Lagos and Benin	0	4	6	,,	0	6	0
,, Sekondi and Cape Lopez	0	3	0	,,	0	4	0
,, Gaboon	0	2	0	,,	0	2	0
Satinwood: West Indian	0	10	0	,,	0	14	0
Rosewood, Per ton	8	0	0	,,	12	0	3
Lignum Vitæ ,,	7	0	0	,,	14	0	0

STONE.*

Red Mansfield, in blocks, per foot cube	£0	2	4
Darley Dale, ditto ,,	0	2	3
Red Corsehill, ditto ,,	0	2	2
Closeburn Red Freestone, ditto ,,	0	2	0
Ancaster, ditto ,,	0	1	10
Greenshill, ditto ,,	0	1	10
Chilmark, ditto (in truck at Nine Elms) ,,	0	1	10½
Hard York, ditto ,,	0	2	0
Ditto ditto 6in. sawn both sides, landings, random sizes, per foot sup.	0	2	8
Ditto ditto 3in. slab sawn two sides, random sizes ,,		1	3

* All F.O.R. London.

Bath Stone, delivered on road waggons, Paddington Depot per foot cube	0	1	7½
Ditto, ditto, Nine Elms Depot ,,	0	1	9½
Beer Stone, delivered on rail at Seaton Station ,,	0	1	0
Ditto, delivered at Nine Elms Station ,,	0	1	6

Portland Stone, in random blocks of 20ft. average:—

	Brown Whit Bed. Per foot cube.	White Base Bed
Delivered on road waggons at Paddington Depot, Nine Elms Depot, or Pimlico Wharf	£0 2 3	£0 2 4½

SLATES.

	in.	in.	£	s.	d.	per 1,000 of 1,200 at r.stn.
Blue Portmadoc	20 × 10		12	12	6	,, ,,
,, ,,	16 × 8		6	12	6	,, ,,
Blue Bangor	20 × 10		13	2	6	,, ,,
,, ,,	20 × 12		13	17	6	,, ,,
First quality	20 × 10		13	0	0	,, ,,
,, ,,	20 × 12		13	15	0	,, ,,
,, ,,	16 × 8		7	5	0	,, ,,
Eureka unfading green	20 × 10		15	17	6	,, ,,
,, ,,	20 × 12		18	7	6	,, ,,
,, ,,	18 × 10		13	5	0	,, ,,
,, ,,	16 × 8		10	5	0	,, ,,
Permanent green	20 × 10		11	13	6	,, ,,
,, ,,	18 × 10		9	13	6	,, ,,
,, ,,	16 × 8		6	13	6	,, ,,

BRICKS.

(All prices net.)

First Hard Stocks	£1	15	0	per 1,000 alongside, in	
Second Hard Stocks	1	11	0	,, ,,	river.
Mild Stocks	1	9	0	,, ,,	,,
Picked Stocks for Facings	2	5	0	,, delivered at rly. stn.	
Flettons	1	10	0	,, ,, ,,	
Pressed Wire Cuts	1	18	0	,, ,, ,,	
Red Wire Cuts	1	14	0	,, ,, ,,	
Best Fareham Red	3	12	0	,, ,, ,,	
Best Red Pressed Ruabon Facing	5	0	0	,, ,, ,,	
Best Blue Pressed Staffordshire	3	15	0	,, ,, ,,	
Ditto Bullnose	4	0	0	,, ,,	
Best Stourbridge Firebricks	3	14	0	,, ,, ,,	
2½in. Best Red Accrington Plastic Facing Bricks	4	10	6	,, Net, delivered in full truck loads in London.	
" Accrington Best Red Plastic Facing Bricks				per 1,000 £3	10 0
3⅜" ditto Second Best Plastic ditto					2 2 6
Ditto Ordinary Second Bricks					1 11 3
Ditto Plastic Engineering Bricks					1 17 6
Sewer Arch Brick not more than 3⅜" in thickest part					2 0 0
3⅜" Chimney Bricks fit for outside work					2 6 0
3⅜" ditto ditto through and through					2 0 0
3⅜" Beaded, Ovolo and Bevel Jambs; Octagons; 2½" and ½" radius Bullnoses; Stock patterns					3 7 6
Accrington Air Bricks, 9" × 2 course deep, each					0 0 6
Ditto ditto 9" × 1 course ,,					0 0 3

Accrington Camber Arches:—

3 course deep, 4½" soffit, per foot opening							0	1 3
4	ditto	4½"	ditto	ditto	ditto		0	1 8
5	ditto	4½"	ditto	ditto	ditto		0	2 1
6	ditto	4½"	ditto	ditto	ditto		0	2 6
3	ditto	9"	ditto	ditto	ditto		0	2 1
4	ditto	9"	ditto	ditto	ditto		0	2 11
5	ditto	9"	ditto	ditto	ditto		0	3 9
6	ditto	9"	ditto	ditto	ditto		0	4 6

Net free on rail or free on boat at works

GLAZED BRICKS.

HARD GLAZES, (PER 1,000.)

White, Ivory, and Salt Glazed. Best.	Buff, Cream, & Bronze. Best.	Other Colours. Seconds.	Second Colours.
Stretchers—			
£12 7 6 £10 17 6	£13 17 6	£17 17 6	£12 7 6
Headers—			
11 17 6 10 7 6	13 7 6	17 7 6	11 17 6
Quoins, Bullnose, and 4½in. Flats—			
15 17 6 14 17 6	17 17 6	21 7 6	15 17 6
Double Stretchers—			
17 17 6 16 7 6	20 17 6	24 7 6	17 17 6
Double Headers—			
14 17 6 13 7 6	17 17 6	21 7 6	14 17 6
One side and two ends, square—			
18 17 6 17 7 6	21 17 6	26 7 6	18 17 6
Two sides and one end, square—			
19 17 6 18 7 6	22 17 6	26 17 6	19 17 6
Splays and Squints—			
17 7 6 15 17 6	21 17 6	24 17 6	17 7 6
Plinth and Hollow Bricks. Stretchers and Headers—			
5d. each 4d. each	6d. each	6d. each	5d. each
Double Bullnose, Round Ends, Bullnose Stops—			
5d. each 4d each	6d. each	6d. each	5d. each
Rounded Internal Angles—			
4d. each 3d. each	5d. each	5d. each	4d. each

MOULDED BRICKS.

Stretchers and Headers—			
8d. each	8d. each	8d. each	8d. each
Internal and External Angles—			
1/2 each	1/2 each	1/2 each	1/2 each
Cill Bullnose, Stretchers and Headers—			
5d. each	4d. each	6d. each	6d. each
Majolica or Soft Glazed Stretchers and Headers			Per 1,000 £22 17 6
,, ,, Quoins and Bullnose			27 17 6
Compass bricks, circular and arch bricks of single radius £6 per 1,000 over above list for their respective kinds and colours			Not exceeding 9in. by 4½in by 2½in.
Camber arch bricks, any kind or colour, 1s. 2d. each			

Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.

* These prices are carriage paid in full truck loads to London Stations.

	s.	d.	
Thames Sand	7	6	per yard, delivered
Pit Sand	7	0	,, ,,
Thames Ballast	6	0	,, ,,

	s.	d.	Per ton,
Best Portland Cement	36	0 to 41	0 delivered
Ground Blue Lias Lime	21	0	per ton delivered.

Exclusive of charge for sacks.

	s.	d.	s.	d.	Per yard,
Grey Stone Lime	13	6 to	14	0	delivered
Stourbridge Fireclay in sacks	27s.	0d.	per ton at railway station.		

TILES.

	s.	d.	Dlvrd. at
Plain red roofing tiles	42	0	per 1000 ry. stn.
Hip and Valley tiles	3	7	per doz. ,, ,,
Broseley tiles	50	0	per 1000 ,, ,,
Ornamental tiles	52	6	,, ,, ,,
Hip and Valley tiles	4	0	per doz. ,, ,,
Ruabon red, brown, or brindled	57	6	per 1000 ,, ,,
do. (Edwards)	60	0	,, ,, ,,
Ornamental do.	4	0	per doz. ,, ,,
Hip tiles	3	0	,, ,, ,,
Valley tiles			
Selected "Perfecta" roofing tiles:—Plain tiles (Peake's)	46	0	per 1000 ,, ,,
Ornamental do.	48	6	,, ,, ,,
Hip tiles	3	10½	per doz. ,, ,,
Valley tiles	3	4½	,, ,, ,,
"Rosemary" brand plain tiles	48	0	per 1000 ,, ,,
Ornamental tiles	50	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	8	,, ,, ,,
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 ,, ,,
Hand-made sand-faced	45	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	6	,, ,, ,,
Hartshill" brand plain tiles, sand-faced	50	0	per 1000 ,, ,,
Pressed	47	6	,, ,, ,,
Ornamental do.	50	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
alley tiles	3	6	,, ,,

OILS.

Rapeseed, English pale, per tun	£28	15	0	to	£29	5	0
Do., brown ,, ...	26	15	0	,,	27	5	0
Cottonseed, refined ,, ...	29	0	0	,,	30	0	0
Olive, Spanish ,, ...	39	10	0	,,	40	0	0
Seal, pale ,, ...	21	0	0	,,	21	10	0
Cocoanut, Cochin ,, ...	46	0	0	,,	46	10	0
Do., Ceylon ,, ...	42	10	0	,,	43	0	0
Do., Mauritius ,, ...	42	10	0	,,	43	0	0
Palm, Lagos ,, ...	32	5	0	,,	33	5	0
Do. Nut Kernel ,, ...	35	0	0	,,	35	10	0
Oleine ,, ...	17	5	0	,,	19	5	0
Sperm ,, ...	30	0	0	,,	31	0	0
Lubricating U.S. per gal,	0	7	0	,,	0	8	0
Petroleum refined ,, ...	0	0	6½	,,	0	0	6⅞
Tar, Stockholm per barrel	1	6	0	,,	1	10	0
Do., Archangel ,, ...	0	19	6	,,	1	0	0
Linseed Oil per gal.	0	2	3½	,,	—		
Baltic Oil ,, ...	0	2	6	,,	—		
Turpentine ,, ...	0	2	9	,,	—		
Putty (Genuine Linseed Oil) per cwt.	0	8	0	,,	—		
Pure Linseed Oil "Stority" Brand ,,	0	10	0	,,	—		

GLASS (IN CRATES).

	15oz.	21oz.	26oz.	32oz.
English Sheet Glass:				
Fourths	2d.	3d.	3⅝d.	4⅝d.
Thirds	2½d.	3½d.	4½d.	5⅝d.
Fluted Sheet	2½d.	3⅜d.	6½d.	7d.
Hartley's English Rolled Plate:	⅛in.	3/16in.	¼in.	
	2½d.	2¾d.	3d.	

Figured Rolled and Repoussine White. Tinted 3½d. ... 5d.

LIST OF COMPETITIONS OPEN.

Dec.	15—Water Supply, Beverloo, Limburg		Commandant du Genie, Camp de Beverloo, Limburg, Belgium
,,	29—New Offices for Board of Trade, Whitehall Gardens, S.W. [R. Blomfield, M.A. (Oxon), A.R.A., P.R.I.B.A. J. Belcher, R.A., and Sir Aston Webb, C.V.O., C.B., R.A., Assessors] Sketch Designs, ten will be Selected,		
1914.	with £300 Honorarium each		The Secretary, H.M. Office of Works, Storey's Gate, S.W.
Jan.	2—Manchester Royal Exchange, Additional New Buildings and Alterations. Open to all architects in U.K. Not more than 12 architects of repute have been specially invited; each of whom will receive one hundred guineas. The three selected architects will receive one hundred guineas each. Author of design placed first will be appointed. (J. S. Gibson, F.R.I.B.A., Assessor)		Rich. J. Allen, Master, Royal Exchange, Manchester.
,,	20—Masonic Temple, Toronto (Estimated cost, about £51,400)	Five unsuccessful competitors to receive 750dol., 500dol., and 250dol, respectively	W. H. Best, 181, Avenue-road, Toronto.
Feb.	1—Municipal Technical Institute, Pool Meadow, Coventry	£1,200, £600	G. Sutton, Clerk, Education Office, 44, Bayley-lane, Coventry.
,,	15—Savings Bank, Verona (Five Assessors)		The Savings Bank, 1, Via Garibaldi, Verona.
Mar.	20—Public Museum and Art Gallery, Belfast (John J. Burnet, A.R.S.A., LL.D., Assessor)	Selected Architect to carry out work; second, £100; third, £75; fourth, £50	R. Meyer, Town Clerk, City Hall, Belfast.
April	2—Departmental and Courts Buildings, Ottawa (T. E. Collcutt, J. H. G. Russell, and J. O. Marchand, Assessors). Double Competition, five unsuccessful competitors in second to receive 3,000dol. each		R. C. Desrochers, Department of Public Works, Ottawa, Ont.
May	1—New St. Paul's Bridge, Designs for (Sir W. Emerson, P.P.R.I.B.A., Assessor)	£300, £100	The Town Clerk, Hallkeeper's Office, Guildhall, E.C.
No date	—New Secondary School, City of Bath (Henry T. Hare, F.R.I.B.A., Assessor)		F. D. Wardle, Town Clerk, Guildhall, Bath.
do.	—Defective Children's School, Blake Hall, near Durham		The Clerk, County Education Committee, Shire Hall, Durham.
do.	—Clock Tower, Queen's Park, Brighton. Cost (including Clock), £1,000		H. Talbot, Clerk, Town Hall, Brighton.

LIST OF TENDERS OPEN.

BUILDINGS.

Dec.	5—Independent Chapel, Alterations to, Bryn		D. J. Jones, M.S.A., Talbot-road, Port Talbot.
,,	5—Special Subjects Building, Edenbridge	Kent Education Committee	M. H. Robinson, M.S.A., Archt., Sessions House, Maidstone.
,,	5—Farm Buildings, Additions to, Bushton, Cliff Pypard	Wilts County Council	J. George Powell, County Sur., Trowbridge.
,,	5—Bowling Green Shelter, Walker-rd., Newcastle-on-Tyne	Town Moor Committee	The City Engineer, Town Hall, Newcastle-on-Tyne.
,,	5—Corner House, Alterations to, Dowlais	Giles and Harrap	C. M. Davies, M.S.A., 112, High-street, Merthyr.
,,	5—Houses (34), Repairs to, Kinsley, Wakefield		W. J. Tennant, Archt., Pontefract.
,,	5—Boiler House at Schools, Evelyn-street, Warrington	Education Committee	The Borough Surveyor, Town Hall, Warrington.
,,	5—Outbuildings, Westwood, near Trowbridge	Wilts County Council	J. G. Powell, County Sur., Trowbridge.
,,	5—Independent Chapel, Alterations to, Llanelly		D. J. Jones, M.S.A., Talbot-road, Port Talbot.
,,	5—Handicraft Centre, Alterations to, Milsom-st., Cheltenham	Education Committee	Chatters and Smithson, Archts., 17, Regent-street, Cheltenham.
,,	5—School, Rue de la Paille, Brussels		Collège des Bourgmestre et Echevins, Ville de Bruxelles.
,,	6—Police Station, Pontlottyn	Glamorgan County Council	The Clerk, County Hall, Cardiff.
,,	6—Two Cottages, Withycombe, Tedburn St. Mary		J. B. Mann Withycombe.
,,	6—Police Courts, Aberdare	Glamorgan County Council	The Clerk, County Hall, Cardiff.
,,	6—Ebenezer Chapel, Rebuilding, Cefn-Coed		C. M. Davies, M.S.A., 112, High-street, Merthyr Tydfil.
,,	6—Police Courts, Pontardawe	Glamorgan County Council	The Clerk, County Hall, Cardiff.
,,	6—School Extension, Camborne	Cornwall Education Committee	S. Hill, Archt., Green-lane, Redruth.
,,	6—Forester's House, Additions to, Fochabers		D. J. Cunningham, Factor, Estates Office, Fochabers.
,,	6—Y.M.C.A. Building, North Shields		A. B. Plummer, F.R.I.B.A., Newcastle-on-Tyne.
,,	6—Police Station, Additions to, Bargoed	Glamorgan County Council	The Clerk, County Hall, Cardiff.
,,	6—Debt Control Offices, Casablanca, Morocco		Président de la Commission, Dar En Niaba, Tangier.
,,	7—Pilot Station, Ostend		Service de la Cote, 4, Square Stephanie, Ostend.
,,	8—Primitive Methodist Church, Oakdale Village, Blackwood		A. F. Webb, M.S.A., Blackwood, Mon.
,,	8—Buildings for Slab-Making Plant, Mortlake	Barnes Urban District Council	G. B. Tomes, A.M.I.C.E., Sur., High-street, Mortlake, S.W.
,,	8—Pairs of Cottages for Enginemen, Bath	Corporation	W. H. Radford, C.E., Albion Chambers, King-st., Nottingham.
,,	8—Artisans' Dwellings (16), Chobham	Chertsey Rural District Council	H. E. Paine, Clerk, 80, Guildford-street, Chertsey.
,,	8—Repairs to Buildings (Three Years), Greenock	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
,,	8—Eastover Council School, Various Works, Bridgwater	Borough Education Authority	F. Parr, A.M.I.C.E., Boro' Sur., Mun. Bldgs., Bridgwater.
,,	8—Repairs to Buildings (Three Years), Edinburgh	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
,,	8—Electric Sub-Station, Port Glasgow	Greenock Corporation	J. A. Robertson, M.I.E.E., Burgh Elec. Eng., Greenock.
,,	8—Repairs to Buildings (Three Years), Glasgow	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
,,	8—Farm Buildings, Manley Estate, Helsby		W. H. Lancaster, Land Agent, 49, Northgate-street, Chester.
,,	8—Repairs to Buildings (Three Years), Aberdeen	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
,,	8—Skittle Saloon at Club, 1, The Grove, Hammersmith, W.		T. W. Biggs, A.R.I.B.A., 61, Carey-st., Lincoln's Inn, W.C.
,,	8—Repairs to Buildings (Three Years), Stirling	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
,,	9—Stable, Hayes	Great Western Railway Co.	A. E. Bolter, Sec., Paddington Station, W.
,,	9—Tuberculosis Pavilion, Chester	Corporation	J. H. Dickson, Town Clerk, Town Hall, Chester.
,,	9—Infants School (150 places), East Hetton	Durham County Education Dept.	W. Rushworth, Archt., Shire Hall, Durham.
,,	9—Goods Offices, Birmingham	Great Western Railway Co.	The Resident Engineer, Snow Hill, Birmingham.
,,	9—Grand Stand, Knowsley-road, St. Helens	Rugby Football Club	Hanson and Davidson, Archts., Hardshaw-street, St. Helens.
,,	9—Adapting Labour Exchange, Doncaster	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
,,	9—Church School, Enlargements, Hemingfield		J. Robinson, Park Cottage, Wombwell.
,,	9—Bandstand, Park-lane, Wembley	Urban District Council	C. R. W. Chapman, Eng., Public Offices, Wembley.
,,	9—Goods Shed, Alterations to, High-street Station, Swansea	Great Western Railway Co.	A. E. Bolter, Sec., Paddington Station, W.
,,	10—Penhole House, Alterations to, Coad's Green	W. Grylls	L. Scantlebury, Archt., Callington.
,,	10—House, Northwick-road, Evesham		Mrs. J. E. White, Risandene, Little Hampton, Evesham.
,,	10—Two Semi-Detached Villas, Talbot-avenue, Huddersfield		J. Berry and Sons, Archts., 3, Market-place, Huddersfield.
,,	11—Two Cottages, Backbarrow		T. Wilkinson, Backbarrow, Lancs.
,,	11—No. 9, Parr-street, Extending, Kendal	J. Dent	S. Shaw, F.R.I.B.A., Kendal.
,,	11—Four Cottages, Otterbourne	Southampton Corporation	The Waterworks Engineer's Office, 35, French-st., Southampton.
,,	12—Semi-Detached Houses (200), Blaenrhondda	Fernhill Garden Village, Ltd.	W. B. Rees, Archt., 3, Dumfries-place, Cardiff.
,,	12—Pavilion, Cleckheaton	Cricket and Bowling Club	R. Castle and Son, Archts., Bank Chambers, Cleckheaton.
,,	12—Church, Rebuilding, Leck		Austin and Paley, Archts., Lancaster.
,,	12—School Buildings, Salm-Chateau, Vielsalm		Secretariat Communal, College Echevinal, Vielsalm, Belgium.
,,	13—Shop and House, West Vale, Halifax		Walsh and Nicholas, Archts., 10, Harrison-rd., Halifax.
,,	13—Two Cottages, Ironmonger-road, Tenterden	Town Council	W. L. C. Turner, Boro' Sur., Town Hall, Tenterden.
,,	13—Council School, Alterations and Additions to, Headcorn	Kent Education Committee	W. H. Robinson, Archt., Sessions House, Maidstone.
,,	13—Public Library, Dartford	Urban District Council	W. Kay, Clerk, Council Offices, Dartford.
,,	13—Storage Accommodation, Workhouse, Cardiff	Guardians	A. J. Harris, Clerk, Queen's Chambers, Cardiff.
,,	13—Hall and Agents' Houses, Red Hills, Durham	Miners' Association Committee	H. T. Gradon, A.R.I.B.A., Durham.
,,	13—"E" Warehouse, Enlarging, Chandos-street, Portsmouth	Timothy White Co.	A. E. Cogswell, Archt., Prudential Buildings, Portsmouth.
,,	15—Houses (113), Pelton Village	Chester-le-Street R.D.C.	J. H. Mole, Sur., Chester-le-Street.
,,	15—Single-Story Transit Shed, Newcastle-on-Tyne	Trade Committee	The City Engineer, Town Hall, Newcastle-on-Tyne.
,,	15—Grand Casino, Santander	Municipality	Secretaria, Ayuntamiento, Santander, Spain.
,,	15—Eight Shops, Oakdale Village, Blackwood, Mon.	Commercial Building Syndicate	A. F. Webb, M.S.A., Tredegar Chambers, Blackwood, Mon.
,,	15—Cattle Detention Lairage, Town Quay, Southampton	Harbour Board	J. Pailthorpe, Clerk, Harbour Offices, Town Quay, Southampton.
,,	15—Church of Duthil, Alterations to, near Carr Bridge		Rev. P. Macgregor, The Manse, Duthil.
,,	15—House, Penrallt Mill, Llechryd		Miss Harries, Penrallt House, Llechryd.
,,	16—Cottages (12), Studland, Dorset	Wareham and Purbeck R.D.C.	W. Watts Fookes, North-street, Wareham.
,,	16—Club Premises, New Road Side, Wyke		Sharp and Waller, Archts., 32, Bradford-road, Brighouse.
,,	16—Council School, Alterations to, Tideswell	Derbyshire Education Committee	G. H. Widdows, F.R.I.B.A., County Offices, Derby.
Dec.	17—Rifle Range Buildings, Symondsbury, near Bridport	Dorset Terr. Force Assoc.	F. T. Maltby, Archt., Dorchester.
,,	17—Court House and Police Station, Silloth		G. D. Oliver, F.R.I.B.A., County Archt., Carlisle.

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THE BUILDING NEWS

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THE UNDEVELOPED-LAND DUTY.

The Finance Act, 1909-10, once known as the "Great Budget," contains in sections 16-19 provisions for imposing a tax or duty upon owners who keep their land unused, uncultivated, or, as the Statute says, undeveloped. In theory, the proposal made a popular appeal, for the idea put forward was that wicked landowners kept their land idle and wilfully wasted opportunities for its beneficial use, to the prejudice of a landless people. The Legislature, to stop this state of things, therefore imposed a duty of one halfpenny for every pound of the original site value of land so left undeveloped, which was made a charge upon the owner for the time being. Assuredly it is a first principle that the owner of land should not be allowed to leave it lying waste when it could be built upon, or otherwise employed to the advantage of the community. The Act declared land to be undeveloped and liable to this duty when it was not used for the erection of dwelling-houses or glass-houses, or greenhouses, or buildings, or otherwise bonâ fide used for the purpose of any business, trade, or industry other than agriculture, which is dealt with in separate sections, with certain exceptions as to small holdings, with which we are not now concerned.

Builders should in theory derive benefit from an Act which, under a threat of taxation, is aimed at compelling landowners to put their land upon the market, and develop its utility as plots for building upon. But as there are always in force living economic laws, far more powerful than any statute, pressing people to make the most of their own property, these sections of the Budget do not seem to have much effect upon the position for practical purposes. The working of supply and demand is far older and far stronger than any Legislature can ever be. If there is a demand for land on which to build, it is generally found that owners are willing to sell. The difficulty of late years has been that, even where land was wanted by those who wished to build, the price at market rates which they were ready to pay did not meet the views of the owners. So, for some time, there has been a good deal of stagnation in this form of enterprise, and owners have been keeping their land for the coming of better times. Those who are supposed to be enforcing the payment of the Undeveloped-Land Duty have been extremely slack about the business, and there are many cases of waste ground lying idle upon which the duty has not yet been even assessed, and much less collected. The recent publication of Revenue statistics showing such very poor figures as the result of these duties, when compared with the expenses, seems to have wakened up the authorities, and efforts are now being made to get in something in the way of arrears, to make the balance look better. But so small a duty can never come to much, nor is it likely to have any striking effect in encouraging building, where the ordinary action of supply and demand has failed to move owners of land that is at all worth developing.

At the same time, there are doubtless many cases in which the pressure of the Revenue in the way of assessing and collecting these duties would be beneficial to builders and the building trades. As we have noted, landowners are waiting for better prices, and are not desirous of sinking capital on roads and drainage and other expense in the laying out of estates until these are forthcoming. But the incidence and payment of these duties should sometimes be enough to turn the scale in favour of selling at reasonable rates to builders who are ready to develop land if they can do so at a fair profit. It would, therefore, often be to the advantage of the Building Trades if the Revenue authorities could bestir themselves a little more, and get on with their assessment and collections. In some districts the land is held by companies, bought by them at high market rates some years ago, and intended to be laid out in building plots, but which, at present prices, cannot be done profitably enough. Ground of this kind is often of no practical value for market gardens or other purposes, though it may be ripe for building, but is left idle until times improve. Here is the opportunity of the Revenue for pressing on with their claims to duty, to the indirect benefit of builders. Such a district, for example, as Southend-on-Sea, where, as at Leigh-on-Sea and other similar places, there has lately been a good deal of fairly successful building, but where there is room for much more, as the land is not of a high agricultural or other producing quality. No doubt there are many other localities about the country of which the same could be said.

It seems, however, that it is not always so easy to enforce the Undeveloped-Land Duty as it looks on the face of the Statute. The Commissioners of Inland Revenue have lately had a lesson upon this point in the case of the Southend-on-Sea Estates Co. (Ltd.) (*Times*, Oct. 31 and Dec. 2, 1913). There some land belonging to the company at Southchurch, Essex, was assessed for the duty, and against this the company appealed to the High Court, on the ground that they had, as owners, granted a lease of the ground before April, 1909, and therefore they came within the exemption contained in Section 17, sub-section 5, of the Finance Act. This is the clause that provides that where land has been so leased, the duty shall not be chargeable during the time granted; subject, however, to the proviso that where the lessor has power to determine the tenancy, this exemption shall not apply after the earliest date at which it could so be determined. Now the lease in this case had a clause declaring that the company as lessors could at any time enter and resume possession of every part of the land, for building or other purposes, on giving the lessees one calendar month's notice in writing. They had not done so, because they had not wanted the land for building or otherwise, and so it remained as it was, and was used agriculturally. The argument for the Revenue was that, as the lessors had power to determine the lease, the fact that they did not wish to do so, or to use the land for other purposes, could not affect their legal position. It was urged, in short, that as they could end the lease if they liked, the duty became chargeable under the Act.

Mr. Justice Scrutton, in the High Court, supported this view, holding that the object of the Statute was that land which might be used for more profitable purposes should not be kept from that use; if it was, it should pay the duty as land that was undeveloped. Then the company took the case up to the Court of Appeal, with the result of getting this ruling entirely reversed. It was there very strongly argued for the Revenue that the question was not whether the lessors wished to determine the lease, but whether they had the power to do so; and, if they had, then the Statute applied. The Master of the Rolls and two Lords Justices emphatically said that the Court had nothing to do with the policy of the Act: their only duty was to construe its clauses. Then they held that, unless the company could say they wished to resume possession of the land for purposes such as building, etc., which were inconsistent with the tenant's continued use of it agriculturally, they had no power, under the lease, to determine the holding. So the Statute did not apply, and there was no duty assessable. This case may be a useful precedent for future use, as it certainly shows that the getting in of their new land duty is not so simple as it seemed. Indeed, there is likely to be a goodly crop of litigation raised upon the soil of this confused and hastily-conceived bit of sensational legislation.

GOLD MEDAL YEAR AT THE ROYAL ACADEMY.

The architectural schools at the Royal Academy seem to be going strong as far as the number of exhibits goes. For the premier prize there are more entries than usual. The subject is "A Town-hall for an Important City," and, as the site was to be open on its four sides, there were no difficulties due to the surroundings. The Council can have had little hesitation about the award in favour of Mr. David John Chisholm. His design is the best of the ten. But the choice is one of degree rather than in favour of distinguishing merit. There are several good points in the planning, and the idea of the general lay-out is not bad; but there is a lack of good proportion and absence of charm in the elevations. The tower, of somewhat campanile-like outline, rises over the entrance-hall. An Italian feeling is expressed perhaps more by the fenestration and the columnar treatment of the façades on the first floor, than by the general aspect of the building. The rusticated arcade to the main entrance would seriously darken the committee-rooms. The design is crisply delineated, and the detail of the portal is workmanlike in execution. The plan is quadrangular, with an arched entrance for carriages to the great quad leading to the public-hall entrance, where, by the way, the lobby is rather cramped inside, with the stairs going right and left, leading up by a columned hall on the main floor to the assembly-room, a story higher. This town-hall is 120ft. by 60ft., with a recessed platform, seated orchestrawise with semi-circular seatings. At the other end is a foyer, next a smaller staircase, for public use, direct from the street. On the main front, where the tower comes, there is an enormous entrance-hall, which would be rather devoid of light, and a grand staircase beyond with a semicircular gallery at first-floor corridor level, giving a fine architectural opportunity, but leading exactly to nowhere, though below a stairway rises from a secondary entrance out of the quad. The reception-hall is reached in the centre piece overlooking the street, and measures 75ft. by 26ft. The banqueting hall, to the left, figures 84ft. by 42ft., while to the right occurs the council-chamber, 66ft. by 42ft., with anterooms and committee-rooms and offices beyond over the office wing, where the town clerk and city surveyor have their departments next the street, thus completing the quadrangle. On the other flank, on either hand of the carriage archway, are the rates and gas offices. The council-chamber is not quietly situated, and the committee rooms are open to the same objection.

Neither of the other designs is placed second; but we rather fancy that No. 191 ranks above the rest. To the rear are two smaller courts, and in front two projecting wings enclose a paved quadrangle, giving dignity to the entrance of the premises. There are many bad faults in the plans.

No. 192 has a cruciform and circular plan, with a round town-hall, having radiating gangways between segmental seating, and the height is stupendous—Brobdingnagian, in fact—and bad, too, for sound in its proportions. Architecturally in the exterior there is much to note, for the design is original, and has Greek feeling in some of its Frenchified departures from the Neo-Grec. The author shows reserve in the subordinated parts of his façades, which have columns of the Ionic Order marking the recessed pavilions where the windows occur. The plan suffers from its inordinate shape, and the trifling little court areas are not at all satisfactory.

No. 193 is a crowded performance of roughly-executed tracings, badly mounted, and showing an ill-thought-out proposal dashingly rendered. No. 194 shows a dome over a grandiose reception-hall, and four diminutive courtyards for lighting. The council-chamber is square, too publicly placed at the end of a great staircase, and it has a pediment over its clerestory attic, as seen from the street. The perspective is roughly handled. No. 195 has much too exaggerated a tower, almost detached, in front of the buildings, rising to emphasise a porte-cochère, though the foreshortening of the perspective distorts and disguises this feature of the plan. The drawings are painstaking, but the plan is faulty in many ways. No. 197 is much too crowded, and the vast cupola piles up too heavily over the assembly-room. No. 198 flatters English types more than most of the others, and the author evinces a sense of reserve, even if he fails to appreciate proportions that have merit. No. 189 is marked by a compact plan with capital details, all his large drawings being feelingly done; but his scheme is pretentious, and has a piled-up air about it. No. 190 we do not admire, though it is based seemingly on British 18th-century buildings, and the author has avoided vulgarity.

The Silver Medal drawings of the West Front of St. Mary-le-Strand Church, by Mr. H. C. Mason, do him credit; and in the architectural designs for an Opera House, a Naval College, Markets, and Entrances to a Nobleman's Park, several passable designs are shown. We have no space left to describe the decorative scheme for a public building, but the first prize in this class was not awarded, and Gold Medal Year in most other respects this time is disappointing.

THE AWARDS.

The following is a list of prizes and prize-winners:—

Historical Painting.—"The Pool of Bethesda," St. John, v.—Gold medal and travelling studentship (£200), Gerald Leslie Brockhurst.

Landscape Painting. "A Castle on a Headland; Shipping and Wet Sand" Turner gold medal and scholarship (£50), not awarded.

Landscape Painting.—"A Pebbly Brook"—Creswick prize (£25) and silver medal, Gaynor Elizabeth Bury.

Design for the Decoration of a Portion of a Public Building.—"A Boar Hunt"—First prize (£30) and silver medal, not awarded; second prize (£10) and bronze medal, Mary Wilhelmina D. Hickson.

Design in Monochrome for a Figure Picture.—"The Escape of the Spies." "Then she let them down by a cord through the window: for her house was on the town wall," Joshua ii. 15—Armitage prizes, first (£30) and silver medal, not awarded; second (£10) and bronze medal, Winifred Beatrice Hardman.

Composition in Colour.—Prize (£10) and silver medal, Victor Noble Rainbird.

Cartoon of a Draped Figure. — "A Suppliant"—Prize (£25) and silver medal, Hilda Marion Hechle.

Two Paintings of a Figure from the Life. First prize (£10) and silver medal, Madeline Graham Barker; second prize, bronze medal, Robert John Swan.*

Two Paintings of a Head from the Life.—First prize (£5) and silver medal, not awarded; second prize, bronze medal, Reginald Henry Nathan.

Perspective Drawing in Outline (open to painters and sculptors only). "A Step-Ladder in the School Corridor"—Prize (£5) and silver medal, not awarded.

Set of Four Drawings of a Figure from the Life.—First prize (£15) and silver medal, Victor Noble Rainbird; second prize (£10) and bronze medal, Johannes G. A. Pisani.

Set of Three Studies of Drapery. Silver medal, Alice Dorothy Cohen.

Drawing from the Antique. Prize (£5) and silver medal, Frances Howes Galbraith.

Painting from Still Life.—Prize (£5) and silver medal, Frances Howes Galbraith; extra prize, bronze medal, Violet Mary Barnewall.

Composition in Sculpture.—"Diana and Endymion"—Gold medal and travelling studentship (£200), Gilbert Ledward.

Model of a Design.—"David and Goliath" (the decapitation of Goliath), I. Samuel xvii. 51—First prize (£30) and silver medal, Joseph Hermon Cawthra; second prize (£10) and bronze medal, Ernest Rowland Bevan.

Two Models of a Bust from the Life.—First prize, silver medal, Edgar Allan Howes; second prize, bronze medal, Alfred Henry Wilkinson.*

Model from the Antique.—Prize (£5) and silver medal, Alexander Stiles.

Design for a Medal.—"An Allegorical Figure of Canada"—Prize (£5) and silver medal, not awarded.

Set of Three Models of a Figure from the Life.—First prize (£15) and silver medal, Peter Induni; second prize (£10) and bronze medal, Thomas Humphrey Paget.

Design in Architecture.—"A Town Hall for an Important City"—Gold medal and travelling studentship (£200), David John Chisholm.

Set of Architectural Drawings.—"The West Front of St. Mary-le-Strand"—First prize, silver medal, Harold Clayforth Mason; second prize, bronze medal, not awarded.

An Architectural Design.—Prize (£20) and silver medal. Walter Llewellyn Clark.

Set of Drawings of an Architectural Design.—First prize (£15) and silver medal, James Mollison Wilson; second prize (£10) and bronze medal, Harold Clayforth Mason.

Perspective Drawing in Outline (open to architects only).—"The West Front of St. Martin's-in-the-Fields"—Silver medal, no competition.

Original Composition in Ornament (open to architects only).—Prize (£5) and silver medal, Ernest Alexander R. Rahbula.

Architectural Design with Coloured Decoration.—"The Ceiling of a Great Hall," 100ft. by 50ft.—Silver medal, Geoffrey Philip A. Fildes.

* Disqualified owing to having received the same prize before.

Landseer scholarships in painting and sculpture of £40 a year each, tenable for two years, have been awarded—In painting, to Victor N. Rainbird and Robert J. Swan; in sculpture, to Joseph H. Cawthra and Peter Induni: and for one year in painting to James Williams.

THE PRESIDENTIAL ADDRESS.

The annual prize-giving of the Royal Academy Schools took place on Wednesday evening at Burlington House, when Sir Edward Poynter, the President of the Royal Academy, distributed the prizes to the successful students, and delivered an address in which he discussed the elements of greatness in the works of the great masters. He remarked that at the last prize distribution he made some severe remarks on some of the classes of work done in the schools and sent up for competition. It was the opinion of the members that there had been a decided improvement in some directions—in the drawings from life conspicuously—and he was glad to find some excellent work done in the antique school, for there was no better groundwork for the study of the figure than careful study of the antique. In the competition for the Gold Medal in painting, only one student had grappled with the difficult part of the subject—the angel who came down and troubled the waters—and in this the student had made a praiseworthy and successful effort. But, strangely enough, the student had completely neglected to treat the rest of his subject in accordance with the Scripture story, and instead of the sick, the lame, and the paralytic who came to the pool to be cured of their ills, there was an utterly inappropriate group of sturdy nude females. This, he feared, was only in accordance with a portentous affectation of the day that the only use of a picture was to display the painter's cleverness. In the sculpture com-

petition for the Gold Medal the standard seemed to be very high, and the prize work a remarkable example of modelling with a fine feeling for form, though here again there was some affectation in using the subject for a mere display of skilful technique. About the paintings from the head he had nothing agreeable for them to hear. The studies of a draped figure, on the other hand, though fewer in number than he could wish, were all of a high character, and the one which gained the prize was just what they wished to see. In closing, he referred to the admirable work of the last winner of the Gold Medal, Miss Lindsay Williams. He prophesied at the time a successful career for this young lady, if she had health and strength, and what he had hoped for had been more than realised, both in quantity and quality, and in the excellent choice of subjects for study, ranging from the frescoes of Raphael (of which the spirit was admirably given) to a most faithful copy of a large work by Franz Hals, and in her studies from Nature Miss Williams had afforded an example of industry and enthusiasm for her art which could not but be of advantage to other students.

ART EXAMINATION PAPERS AND EXAMINATION REPORTS, 1913.

The Art Examinations during the past year were the first of the new progressive series as originally set forth during the summer of 1911, thus giving two years for preparation, because they differ, it is said, considerably in character from all previous examinations, for, instead of the elementary standard hitherto in vogue, a much more comprehensive character, better adapted to the need of trained students who have reached a fairly advanced level in their work, was instituted. The intention of this change is to insure a proper test for individual progress, more on the lines of external examinations conducted by universities and other art-teaching bodies. The result, judging from the examiners' reports just published by the Board of Education, does not appear to have been eminently satisfactory, seeing that it was not found possible to praise the general standard of merit actually attained, especially in the subject of drawing. On looking through the list of passes, we find that only one candidate passed at all, and that was "with distinction," in the subject of Modelling (Miss Jessie M. Riding, Liverpool), while not even one pass is recorded for Architecture. In the official prefatory note an excuse is offered by way of attention being drawn to the fact that 1913 was the initial examination under this fresh régime, also that many of the best students were judiciously advised by their teachers to defer entering the new examinations till next year. Confidence, however, is expressed as to better results during the ensuing session, and this hope is several times reiterated.

At the outset, most of the drawings from the Life were found, it is said, far from sound, weak in construction and knowledge of form, leaving much to be desired as far as attachment and drawing of the extremities is concerned. Fair Antique drawings were found where Life-studies were quite immature—an evidence that students had little or even no practice in drawing from the living model, or that the master was not competent to teach this branch of work, which is by far the most important point to at once put right. Very few memory drawings of the antique or natural objects were considered good. In Anatomy, wherein intuitive artistic capacity is not so essential, the record seems more equal to the occasion, though it is hardly to be expected that students at this stage of their career will appreciate the refinements in the modelling of the figure dependent on the contrasting effects of action and repose. A good many succeeded in imparting to their drawings a feeling of life and "go"; but we have often considered this effect to be largely due to the technical representation of muscular details in the action represented, because the constructive lines of animal forms naturally impart this effect to anatomical representation as displayed of the structure in this way particularly when a violent action. Sexual differences in the proportions and modelling of the "torso" are, however, too infrequently attempted, and attention is needed as to the details on which these differences depend. One or two examples of Perspective are spoken of as excellent, several as indifferent, and a certain number as bad, though the latter do not exceed in number the good and fair exercises, so that on the whole the teaching generally is spoken of hopefully, a knowledge of the working out of ordinary problems in perspective being so far evident. Archways and exaggerated angles need practice, and it is not sufficient to find the guiding-points only, while circles need skill in draughtsmanship. All this is self-evident. But are not these examinations, as the preface reminds us, for advanced students? Some successful artists no doubt, it may be said, are always weak in their draughtsmanship and bad at perspective-lines. These examinations, notwithstanding, are supposed to test teaching which will correct such failures.

The names of the examiners in Architecture are not particularised in the tabulated list heading these reports; but these experts say that, in the first place, the test in architectural drawing is, or should be, directed to clean, decisive delineation of buildings and their ornament, such as J. W. M. Turner practised, and, secondly, to that of a knowledge of "dimensional architecture" and its relative connections that exist between plans, sections, and elevations. This knowledge is exemplified in the report by reference to the Dutch masters, while further it is suggested that every decorative artist must have these conditions at his fingers' ends. No candidate, however, attempted to show any technical construction—of which, by the way, a knowledge is not asked for in any of these examinations, and no credit is given on account of it, either. Therefore, we must understand that architectural drawing is only here taught for the equipment of art students generally, and it is not intended for those who hope to practise the art, which, instead of being handled as the Mistress Art, is here relegated to the rank of an accessory for the painter, sculptor, or decorator. In this sense, presumably, a fair degree of competency has been shown by the exercises sent in. The use of the pencil-point for the conventional rendering of the ornament of buildings and the boundaries of the architectural masses of buildings is recognised, though slovenly execution, it seems, occurs still, and meanwhile the "decisive stroke" has not been sufficiently developed. The knowledge of the Orders, particularly the details of entablatures, has not been grasped, and this fault is set down to the newness of the test—an excuse that, at best, hardly passes muster, because the most elementary students, ever since architecture was professed at all, in modern times, were invariably set to study "the five Orders." It is true that the examiners here tell us that these advanced students with whom they deal show some appreciation of the proportions of columns. Nevertheless, the facts of columnar and ornamental relief have most often not been recognised at all. In most cases they have found that the candidates possessed no definite conception of solidity in the drawing of architectural items, for they work as if they were "simply drawing patterns." Sketching actual buildings in this novel code, of which we have heard so much, is recommended, and surveys of exemplar buildings are advised, so that measured drawings may be made. The curious point is that in all these intimate relationships advised as desirable between the student and existing buildings, no knowledge of architectural construction is asked for, and no credit would be given for any such inquisitiveness on the part of the student in this regard. Again we contrast this amateurish view of this matter of architecture with the constructional insistence so rightly underlined in respect to anatomy in figure-work for painters and designers.

We have no space left for the subjects of Painting, about which, as a whole, the examiners are by no means satisfied.

THE LONDON COUNTY COUNCIL.

At Tuesday's meeting of the London County Council an application by the Chelsea Borough Council for sanction to the borrowing of £6,000 for paving the portion of Chelsea Embankment between Albert Bridge and Battersea Bridge with creosoted deal wood on 9in. concrete, in place of macadam, was received; and also one from the Islington Borough Council for sanction to the borrowing of (i.) £5,020 for repaving works in Highbury-grove (between St. Paul's-road and Kelvin-road), Highbury Park (from Highbury-grove to Hamilton-road), and St. Paul's-road (between Highbury-grove and Corsica-street); and (ii.) £720 for repaving Canonbury-lane. The existing paving is of Jarrah wood, and is in bad condition. The proposed work consists of thickening the existing concrete foundations and substituting creosoted deal wood blocks, granite asphalte, and Trinidad asphalte for the Jarrah wood blocks.

The Establishment Committee presented a report on the question of the organisation of the staffs of the chief engineer's department. This staff consists of a deputy chief engineer (a position created in March, 1912, and now vacant), fifteen officers (some with special titles), each in receipt of salaries of more than £400 a year, one chief clerk, eleven senior assistants, thirty-nine assistants in the first class, eighteen assistants in the second class, four assistants in the minor establishment, and thirteen assistants at weekly rates of pay, making a total of 102 officers. The committee recommended—

(a) That the ultimate establishment of, and the scale of salary attached to positions in, the chief engineer department, other than the staff engaged exclusively on maintenance work at main drainage pumping stations, sewer outfalls, and tunnels, be fixed as follows: a chief assistant engineer at a salary of £800 a year, rising by annual increments of £50 to £1,000 a year; five assistant engineers, one at a salary of £700 a year, rising by annual increments of £50 to £1,000 a year, two each at a salary of £600, rising by annual increments of £50 to £800 a year, and two each at a salary of £500 a year, rising by annual increments of £50 to £700 a year; ten principal assistants, two each at a salary of £500, rising by annual increments of £25 to £600, and then by annual increments of £50 to £700 a year; one at a salary of £400 a year, rising by annual increments of £25 to £600 a year; five each at a salary of £400 a year, rising by annual increments of £25 to £500 a year, and two each at a salary of £400 a year, rising by annual increments of £25 to £450 a year; a chief clerk at a salary of £400 a year, rising by annual increments of £25 to £550 a year; fifteen senior assistants each at a salary of £300, rising by annual increments of £25, eleven to £400 a year, and four to £450 a year; thirty-five assistants in the first class, eighteen assistants in the second class; seven minor establishment assistants; and ten non-classified assistants at maximum weekly rates of pay as follows:—two at 63s. each, three at 60s., one at 50s., two at 45s. each, and two at 42s. each.

(b) That pending the filling of the position, referred to in the foregoing resolution (a), of assistant engineer with a maximum salary of £1,000 a year, and one of the positions of principal assistant with a maximum salary of £700 a year, there be instead two positions of assistant engineer, each with a maximum salary of £800 a year.

(c) That the position of deputy chief engineer be abolished.

The ultimate cost on the final organisation of the department will be about £280 a year more than the ultimate cost, inclusive of £1,500 for a deputy chief engineer, of the present establishment.

In reference to this recommendation, the Main Drainage Committee recommended that the services of Mr. J. E. Worth, assistant engineer in charge of main drainage works on the north of the Thames, one of the officers affected, who will attain the age of 60 years on March 19 next, be retained for twelve months after that date.

The Housing of the Working Classes Committee asked for the approval of expenditure estimated at £88,620, in connection with the development of the eastern section of the Old Oak estate, Hammersmith. The scheme provides for the building of 353 cottages and two shops on the southern portion of the section. These cottages will comprise 26 of five rooms, 24 of four rooms and a small additional bedroom, and 122 of three rooms. All will have sculleries, and 244 will be provided with bathrooms.

The Council passed a vote of condolence with the relatives of the late Mr. Walter Emden, Past-President of the Society of Architects, who represented the Strand division on the Council from 1892 to 1901.

THE ARCHITECTURAL ASSOCIATION.

The fortnightly meeting of the Architectural Association was held on Friday evening at 18, Tufton-street, Westminster, Mr. W. Curtis Green, F.R.I.B.A., the President, occupying the chair. Messrs. C. R. Galsworthy, R. J. Jezzard, and J. J. A. Murphy were elected as members. Mr. G. L. Elkington, hon. secretary, announced that the next meeting of the Camera, Sketch, and Debate Club will be held on Thursday, December 18, when papers will be read entitled "The Present Relation of the Three Arts." The President proposed votes of thanks to Mr. Lawrence Weaver for presenting copies of "Gardens Old and New" and "In English Homes" to the library of the Association, and to Mr. W. H. Ward for a generous gift of a collection of negatives of Renaissance buildings at home and on the Continent to the Lantern-slide department.

THE ARCHITECTURE OF PORTUGAL.

Mr. W. H. Ward, M.A., A.R.I.B.A., read the following paper on "The Architecture of Portugal." It was illustrated by a large number of lantern-slides from photographs taken and plans made by the lecturer and by Mr. Crum Watson, some of which are reproduced herewith and in our illustration pages:

Portugal, like most of the lesser States of Europe, has never (remarked Mr. Ward) stood in the direct line of development in Western civilisation and art; but its civilisation and art is not, for that reason, without interest. Like other small countries, it has borrowed largely from greater neighbours, but has modified in borrowing in accordance with its national bent, and in obedience to the various peculiar influences under which it has come from time to time. From one point of view, both the architecture and the language of Portugal may be regarded as merely provincial varieties of those of the Iberian Peninsula as a whole, sharing with Aragon and Navarre, Leon and Castile, and the other Spanish kingdoms, not only the language and heritage of Rome, but also the stimulus of a national struggle against the Moors and contact with a brilliant Mohammedan civilisation. But the fact that the Portuguese have, with the exception of short interludes, succeeded in maintaining their independence as against the rulers of Spain also raises their language and arts to something more than provincial importance, while the peculiarity of their geographical position—shut off from all land neighbours but one, and forced to expand, if at all, by way of maritime enterprise—has brought them into contact with very varied, and in some cases very remote, civilisations, and given them the opportunity of playing a part in world-history out of proportion to their numbers. It was they who discovered the sea route to Asia; their colonial empire rivalled those of Spain and England, and is still considerable; and they possess in Camoens, the author of the Lusiad, one name in literature of European fame, which is more than can be said of many of the more highly-organised lesser States, such as, say, Sweden, Holland, or Switzerland.

A brief outline of the history of Portugal will help to make her architecture intelligible. The territory which now bears that name was conquered by the Romans in the second century B.C., and remained under their rule till the barbarian invasion of the fifth century A.D. At the end of the sixth it was absorbed in the Visigothic kingdom of Spain, with which it was conquered by the Moors early in the eighth century. The history of the State of Portugal begins with the grant of the Courtship of Portucalia, at the mouth of her Douro, by Ferdinand of Castile to his son-in-law, Henry of Burgundy, in 1095. Henry's son Alfonso took the title of King in 1139. The dynasty of Burgundy lasted for nearly 300 years, during which a constant fight was kept up with the Moors, who were gradually driven further and further south till the whole of the present territory was won, though large numbers of the Moorish population remained and accepted Christianity. In 1383 the House of Burgundy became extinct in the legitimate male line, and, in order to avoid being absorbed in Castile by the marriage of the heiress, Dona Brites, the Portuguese elected an illegitimate prince, John I. of Aviz, as king. He defeated the Spaniards in the decisive battle of Aljubarrota and strengthened himself by alliance with England and marriage with Philippa of Lancaster, daughter of John of Gaunt. Under the House of Aviz Portugal reached her period of greatest prosperity and success. Early in the 15th century Prince Henry the Navigator promoted exploration and overseas conquest in Africa. Later on, the Cape of Good Hope was rounded, trade opened up with the East, and a colonial empire was founded both in the East Indies and Brazil. The reign of Dom Manoel the Fortunate, the contemporary of Francis I. of France and of Henry VII. and Henry VIII. of England, a magnificent patron of arts and learning, and, in fact, a typical prince of the Renaissance, but more virtuous and disinterested than most, saw Portugal at the summit of her fortunes. After him the Court grew priest-ridden and helpless. The kingdom fell a prey to Philip II. of Spain in 1580, and, becoming involved in his war with Holland, Portugal lost her naval power and many of her colonies to the Dutch. Independence was recovered, the house of Braganza was placed on the throne in 1640, and the long-standing alliance with England was revived, which proved more profitable commercially to us than to Portugal. This alliance, however, by giving us a foothold on the Continent, became the means of delivering Europe from the yoke of Napoleon through Wellington's Peninsula campaigns. The subsequent career of Portugal, whether under the monarchy or the republic, has been neither glorious nor remarkably progressive, though by no means uneventful. Though Portugal was for 600 years a part of the Roman Empire, and has remained Latin in language, the remains of Roman architecture are scarce, and not very important. The interruption of the barbarian and Mohammedan invasions was so complete that no independent development of a Romanesque style was possible. The Visigoths were not builders, although they had a fine decorative art of their own, as may be judged from the Visigothic jewels in the Cluny Museum in Paris.

MOORISH INFLUENCE ON THE ARTS.

It was otherwise with the Moors, who built largely and well. Few buildings, however, actually dating from the period of the Moorish dominion have survived, and they consist chiefly of fortifications, such as the ruined Castello dos Mouros on the heights above Cintra, but, on the other hand, there are a considerable number of buildings built or adorned by the Moriscos, or converted Moors, for their Christian conquerors, who had almost everything to learn in the way of civilisation from the foes they had overcome. Moorish influence in structural methods and decoration thus left an enduring mark on Portuguese architecture and crafts. Side by side with Moorish work came the introduction of various phases of Romanesque and Gothic from abroad, principally from France and partly through the medium of Spain; each phase came independently from outside, as happened with Gothic in Italy, and did not develop each out of the last, as was the case in France and England. The result of this is that types often appear in Portugal half a century, or even more, later than elsewhere—sometimes when they were already obsolete in their native countries—and that types belonging to different periods at home appear simultaneously in the same Portuguese building—a fact which often makes Portuguese Mediæval architecture an extremely puzzling one to date. In the course of the 14th and 15th centuries the influence of England, with which there was a close alliance, and of the Low Countries, and even Germany, with which there was much commercial intercourse by sea, is often traceable side by side with that of Spain and France, while through all runs an Oriental strain.

THE NATIONAL STYLE.

Towards the end of the 15th century Portugal developed her single national style, called Manoelino, though it began rather earlier than the reign of Dom Manoel. It consists essentially in an extremely exuberant and naturalistic form of Late Gothic, analogous to the Flamboyant of France and the contemporary Gothic of Germany, with certain Moorish reminiscences. But soon there were grafted on to it motives derived from Indian art on the one hand, and that of the Italian Renaissance on the other, the combination making a very curious and decorative, if over ornate, result. From the 16th century onwards architecture ran much the same course in Portugal as in other Southern countries. The delicate and fanciful Early Renaissance was followed by a severer Palladian phase, and that by various types of Baroque in the 17th and early 18th centuries, and those again by a more correct but duller Classic in the later 18th, while the modern architecture of Portugal, if it has any recognisable tendency at all, seems to hesitate between a revival of "Arte Manoelina" and French "Art Nouveau."

I propose now to give a short account of some half-dozen of the most important architectural monuments of Portugal, such as the collegiate churches of Alcobaça, Batalha, and Belem, the old Cathedral and the churches of Sta. Cruz at Coimbra, the buildings of the Knights Templars at Thomar, and the Palace at Cintra. But before doing so it will be interesting to trace the effects produced by Moorish traditions of building and decoration on Portuguese architecture.

MOORISH TRADITIONS.

The Portuguese borrowed from the Moors a peculiar method of walling, and forms of chimneys, arches, windows, and battlements. Most of these are found in the old Palace at Cintra (illustrated elsewhere). The older walls there are built in the Moorish method of rubble stonework, strengthened at intervals by the introduction of bands of brickwork three courses thick. The chimneys over the kitchens form huge cones not unlike the Kentish oast houses, rising high above the roofs to carry off the fumes of cooking, and originally covered externally with a decoration of glazed tiles. Such chimneys are still found in Morocco at the present day, and similar ones of the 17th century occur in the monastery of Alcobaça, where they rise from cast-iron columns in the centre of a marble-lined kitchen, through which a clear brook runs in marble channels. The Moorish form of arch, of horseshoe shape, or with cusps, with a cusp resting on the capital, is pretty frequent, as also is the Moorish type of window, consisting of two cusped arched lights, often stilted, rising from slender shafts, sometimes twisted, with abaci moulded on the side but not on the face, the whole being enclosed in a rectangular moulded frame. The Moors also used various types of battlements, serrated or of other peculiar forms, and the strange battlements of the 15th-century castle at Belem, in which the merlons take the form of shields, are perhaps a relic of these. Moorish tradition is also probably visible in the curious tracery of some of the Portuguese Gothic churches. This does not grow out of the planes of the moulded window jambs, as in Northern Gothic, but consists of geometrical patterns set in the openings and unrelated to its mouldings, being derived probably either from the pierced wood-screens familiar in Cairene work, or the Oriental method of filling window-openings with patterns of brightly-coloured glass set in plaster. Again, the Moors were skilful carpenters, and excelled in richly-wrought woodwork. They had a peculiar method of constructing timber roofs with coupled rafters connected by crossed strips of wood arranged decoratively, and they sometimes covered the whole inner surface of the roofs with a decoration of interlacing laths in star and other patterns richly coloured. An example of this occurs in the Palace chapel at Cintra. The Portuguese carried on this tradition for centuries, substituting moulded panel-work of various designs, but usually retaining the colour, as in the Halls of the Shields, of the Magpies, and of the Swans at Cintra, and the Hall of Degrees in Coimbra University. The Moorish fondness for elaborate cabinet-work

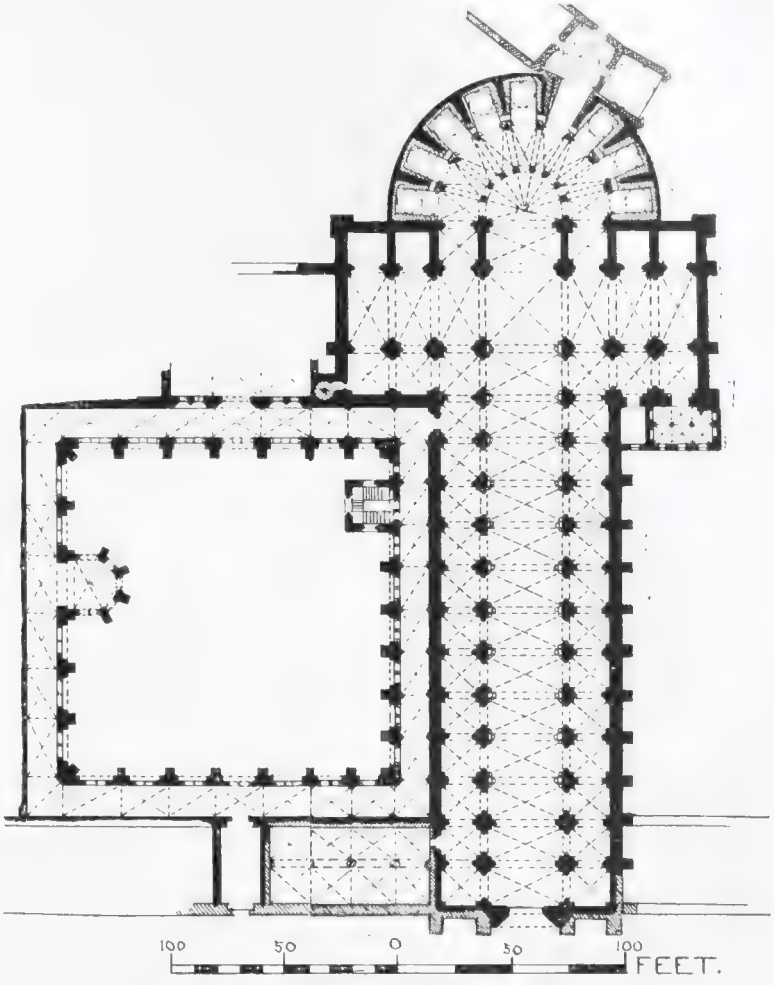
also survived in the church screens and railings, with turned wood balusters of the Renaissance period, such as those of Santa Cruz and the new cathedral at Coimbra, and perhaps in the extraordinarily worried decoration of some of the Baroque churches of the type known in Spain as Churrigueresque, such as that of Sao Francisco at Oporto.

TILEWORK DECORATION.

Perhaps the most obvious and enduring effect of Moorish tradition lies in the use of tiled linings. The manufacture of coloured glazed tiles in the East is almost as old as history. It was introduced into Spain by the Arabs, perhaps as early as the 8th century, but no existing examples can be proved to be earlier than the 13th. Their beauty of colour, and the cool expanses of floor and wall surface which they provide, so grateful in the torrid heats of summer, earned them a wide popularity in the Peninsula which they have ever since retained. In the earliest examples the tiles are self-coloured—either bluish-green, brown, dark violet, or milky-white, and of various shapes, and they are laid in geometrical patterns. Later on, a process was invented of producing a pattern on single tiles, by cutting a design in incised lines on a wooden stamp, which was reproduced in raised lines on the soft clay; colour was then run into the intervening spaces. The designs were usually of the star type, but grotesque animals and flower and foliage motives were sometimes introduced; a little later embossed tiles, especially in vine patterns, came into use. At Cintra are several rooms decorated with high dadoes of some of these kinds of tiles, some of them being finished with cusped and crocketed crestings. The tiles used are mostly self-coloured, or nearly so; but the old cathedral at Coimbra exhibits fine examples of patterned tiles of the 14th century clothing the walls, and, till the recent restoration, also the piers, with a bewildering variety of richly-coloured devices, producing a tapestry-like effect. At the Renaissance the star patterns were supplemented by scroll and other flowing ornamentation, and the range of colour became more varied, being painted on the tiles without bounding ridges. The patterns are sometimes continuous, sovering the whole walls, as in the 17th-century sacristy of Sta. Cruz, or enclosed in architectural borders, as at Sao Amaro at Alcantara. About the same time lustre tiles—first pale gold and, later, red gold—also came into use. But after the expulsion of the Moors in 1609 the art of the tile-maker gradually declined, the colours lost in brilliance, and their range became restricted to blue designs on white grounds, with purple and yellow as occasional variants. The blue-and-white technique seems to have arisen simultaneously at Delft and in Portugal, and in each case seems to be the outcome of a desire to imitate Chinese porcelain, then becoming known in Europe. Many of these tiles had a single flower vase or figure subject on each. But the practice of making large figure subjects in ornamental borders, with a portion only of the total design painted on each individual tile, came in in the 16th century and continued till the early 19th. An example occurs in the nave of Sta. Cruz at Coimbra. Tile linings were applied, not only to rooms, but to cloisters, tanks, steps, garden-seats, and even roofs, but their use for entire house-fronts, now common in Portuguese towns, seems to be no earlier than the 19th century; and that is, it came in when both the colour and the design of the tiles had sunk to insignificance.

ROMANESQUE ARCHITECTURE.

We may now turn to the Christian architecture with which these various Mohammedan traditions and influences are interwoven. The earliest examples are naturally found in the North, and consist of an exceedingly simple and rude type of Romanesque churches of the 11th and 12th centuries, with rectangular naves and chancels, and occasionally a Northern porch. After the foundation of the cathedral of Santiago de Compostella, which was probably modelled on S. Sernin at Toulouse, a more developed basilican plan, with a transept projecting beyond the aisles and apses on the east side of it, became established as the national type, varied in a few of the more important Later Gothic churches, such as the cathedral of Lisbon, by a chevet with radiating chapels. An admirable example of the Romanesque style, though dating from quite the close of the 12th century, is the old cathedral ,or Se Ve Velha, at Coimbra (see central illustration), with its austere fortress-like exterior almost unpierced by windows and crowned by battlements, and its long, dimly-lit nave, culminating in the glory of an apse rich in carving and gilding. All the light comes from the high west window and two in the domical lantern at the intersection, which, externally, is still clothed with



PLAN OF ABBEY CHURCH, ALCOBACA.

(From "Portuguese Architecture," by W. Crum Watson. Constable.)

a mosaic of self-coloured tiles; internally, the aisle walls retain the patterned tile lining which has been stripped from the piers during a recent "restoration." The piers have half-round engaged shafts with capitals of Byzantine character. There is no clerestory, and the barrel vault of the nave is buttressed by half-barrel vaults over the quadripartite aisle vaults. It is curious that the Portuguese, who in the early stages were very timid in their attempts, eventually developed some of the boldest and more enduring vaults in the whole of Europe. The three apses of the old cathedral are enriched with altar-pieces, probably the work of a colony of Flemish artists, who were employed by Manoel the Fortunate. The central one (see illustration) is in wood, and consists of exuberant Late Gothic canopy work gilded on a blue ground. Those in the side apses are of stone, and of the Early Renaissance, executed by Flemings or Frenchmen. The beautiful font near the west end appears to be the work of Jean de Rouen—a Frenchman who came to Portugal about 1521, after having worked upon the monument of Cardinal of Amboise at Rouen. The

TRANSITION FROM ROMANESQUE TO GOTHIC

has its finest example in Portugal—as it has in London—in a church of the Knights Templars. This circular, or, rather, polygonal, church at Thomar was built about 1165, and therefore probably earlier than the still fully-round-arched cathedral at Coimbra. The most important building of Early Pointed architecture in Portugal is contemporary with the last two. This is the great Cistercian Abbey Church at Alcobaça, founded in 1165, and finished 1211, and begun at least by Frenchmen. Its plan, given herewith, is, to some extent, modelled on the mother church at Clairvaux, having a semicircular aisled choir, with nine radiating chapels. But the rest of the church shows a wide departure from Northern practice. The Portuguese, left to themselves, were afraid of continuing the French vaulting system of the choir with its relatively slender piers and flying buttresses. They made the nave piers so excessive that they almost concealed the arches, and buttressed the main vault by carrying up the aisle vaults and thick outer walls to the same level. The interior of this huge nave was the largest in Portugal, was once rich with stall-work and other embellishments of various ages, but all this was systematically destroyed by Masséna's soldiers in 1819, and its gaunt grey perspective now contrasts oddly with the faded colours and tarnished gildings of the florid Baroque decoration of the choir, which, however, provided a not unpleasant splash of colour amid the gloom.

The influence of Northern Gothic was for a long time very slight in Portugal, and the 13th century, which was such a splendid building age in Northern Europe, was almost barren here. Most of the earlier Pointed buildings date only from the 14th century. To this period belong many of the beautiful cloisters which offer one of the great charms of Portuguese churches. They are not, as a rule, placed, as with us, on the south side of the church to catch the sun, but rather on the north, to obtain the shade, though sometimes also to the east or the west; and they are planted with palms and roses, flowering shrubs and creepers, and aromatic herbs set

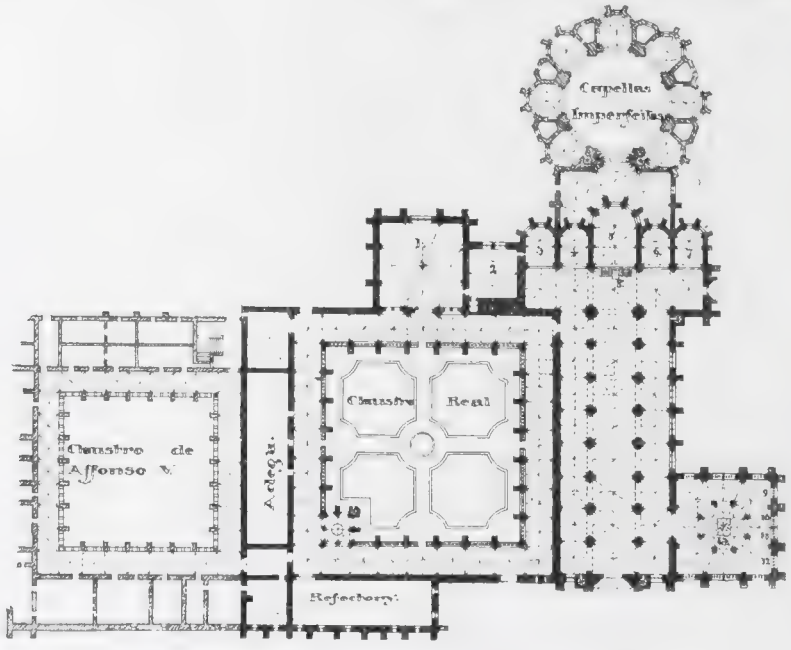
in box borders and refreshed with fountains plashing in marble basins. Alcobaça possesses one of these, which, though not begun till about 1310, would, except for its national peculiarities, pass in France or England as 13th-century work. Like most Portuguese cloisters, it is in two stories, the upper one being of a somewhat later period, and has a lavatorium or fountain-house, in which, for some unexplained reason, the curious polygonal fountain is set askew with the walls. The fine church of Sta Clara at Coimbra, now half silted up by the floods of the Mondego, is another example of 14th century building, which, from its massiveness and simplicity, and the absence of tracery, looks as if it belonged to the 13th, or even the 12th. Much, too, of the picturesque castle of Leiria and its beautiful ruined chapel was built in the 14th century by King Denis the Labourer, who earned his name by his unremitting efforts to reclaim large tracts of waste land and plant the sand dunes. One of the first symptoms of Portuguese Gothic getting abreast of that of other countries is to be found in two beautiful altar tombs at Alcobaça, made about 1390, almost certainly by foreign, and probably by French, craftsmen. They are the tombs of Dom Pedro I. and his mistress, Inez de Castro, who was murdered in the garden near Coimbra, called, in consequence, the Quinta das lagrimas, beside the romantic Fonte dos Amores. The effigies of the Royal lovers lie facing one another on sarcophagi, whose sides are enriched with elaborate canopy-work. The sculpture is for its accomplishment unparalleled up to that time in Portugal, while the decorative portions, though embodying some favourite Portuguese motives, has none of the luscious barbarism of the later native style.

BATALHA.

Dom Pedro's son was the last of the legitimate Burgundian line, and the opening of the era of the House of Aviz which followed was signalised from the first by a successful struggle for national independence against the Spaniards. Dom John III., whose wife was a granddaughter of our Edward III., and one whose sons was to be distinguished as Prince Henry the Navigator, determined to commemorate the glories of the national history and of his house by the foundation of the splendid church and monastery, Sta Maria da Vittoria,* on the spot where the battle of Aljubarrota began, and hence known as Batalha. The church (see plan herewith, and also a perspective view elsewhere, taken from the east) was begun in 1385, and the Royal mausoleum was completed in 1430. It is built of white limestone, which turns a golden yellow with age, and stands in a valley surrounded by woods of pine and cork oak. The plan is the traditional basilican one, with a transept and five apses beyond it. The use of such a plan disproves the fable that the design was obtained by Queen Philippa ready made from England, and it is probably the work of a Portuguese, Affonso Domingues, who seems to have carried the eastern portion up to a considerable height. The remainder was carried out by Huet, who succeeded him in 1402, and is said to have been an Irishman. The mixed characteristics found in the church make its origin a most difficult problem to unravel, and some of those which give it an English look may be due to other causes than English influence. For instance, the long lines of its label-traceried and pinnacled roofs, which recall a Perpendicular church or college chapel, may be only the outcome of the method of roofing common both in Spain and Portugal, by covering over the vaults with a thick coat of accurately fitted stone slabs. But I admit these, the great western entrance-doorway resembles the same feature at King's College Chapel, Cambridge, and is flanked by the ridge rib to the nave, and the lofty arcade, with no triforium to divide it from the clerestory, and the clustered shafts

* A plan of the church, cloisters, and chapter-house, in one sheet of Mr. Ward's admirable series from the south east, and the entrance to the Capella Imperfeita. A double page drawing of the chapter-house, by Maurice B. Adam, was published in our number for January 2, 1901.

and the chapel, are all English features. On the other hand, the great height of the vault, 106ft. high and 25ft. wide, the bases of the nave shafts, and the square abaci of their capitals, suggest French influence; other features are purely native. The south portal (also illustrated), with its great heraldic panel, is like Portuguese examples of much earlier date. The elaborate and minute tracery which fills some of the windows and divides up the lancets of the apses into panels is, perhaps, due to Moorish tradition, and is intended to block out the excess of light; an end which might have been attained by smaller windows. Of Moorish origin, too, are the cusped arches in the Founders' Chapel. This chapel is square externally, but its central space is octagonal, and was formerly



PLAN OF STA MARIA DE VITTORIA, BATALHA.

(From "Portuguese Architecture," by W. Crum Watson. Constable.)

surmounted by an openwork stone spire like that attached to the north transept, and resembling that of Freiburg, in Germany. The explanation of these contradictions seems to be that the work, as a whole, was carried out by Portuguese, who had a fairly free hand as to details and particular features under the superintendence of an Englishman, or of a man familiar with English work, who had travelled in France and Germany, or was assisted by French and German craftsmen. The impression produced by the great abbey is as mixed as it is original. Externally, the proportions are imposing, and the elevations show in parts considerable beauty in features and detail, but the effect is marred, as is too often the case in Portugal, by a florid treatment full of ill-digested and ill-assorted foreign elements. Internally, the result is far more successful. Few nobler or more impressive interiors can be met with anywhere, swept though it is of all its splendid fittings by the vandalism of the French in 1809. A very remarkable feature is found in the chapter-house, a square chamber 60ft. in diameter, and yet vaulted in a single span. It is the largest room of the kind known that is vaulted without any central support, and its vault is so strong as to have withstood repeated earthquakes. In view of the timidity of earlier Portuguese vaults, this feat is in itself almost sufficient to prove the presence of an accomplished Northern architect. King John III. and Queen Philippa, with four of their sons, including the Navigator, are buried in their southern chapel, but the tombs are plainer, and the sculpture less fine, than those of Alcobaça. Their grandson, named Edward, or Duarte, after his English grandfather, desired an even more splendid sculpture, and Huet planned for him an octagonal mausoleum beyond the east end, which it was intended should be surrounded by light radiating chapels, and light smaller chapels interpenetrating one another, and several Orders of traceried cusping of opposite direction. The compound vaulting piers, so mighty that in their unfinished state they look like towers, are treated as bundles of reeds interlaced and bound together by cables and ribbons, the hollows being filled with foliage and heraldic devices. All this is merely the extravagant virtuosity and naturalism of the last stage of Gothic carried to extremes, but here and there Renaissance ornament is also introduced; while John of Castile's last addition consists in a pure Renaissance screen of two arches in the clerestory, whose relatively single forms are in refreshing contrast to the orgy of contorted and worried lines around them. Dom Manoel also embellished the cloisters of Batalha by filling the older plain openings with tracery of two alternating types, both composed of branch work, one of a regular reticulated pattern, and the other, a lace-like screen of flowing design, probably suggested by Indian examples. At Alcobaça is an extraordinary doorway, which is interesting as showing the affinities of Manoelino, with the naturalistic tendencies of Late Gothic in Germany, and the timid irruption into the midst of this flamboyance of Italian motives diametrically opposite tendency. An opening with reversed cusps is framed in by two trees, with roots and stems and leafy boughs complete, and under their shadow nestle Italian arabesques.

(To be continued.)

The President, in inviting discussion upon the paper, said he had not been nearer than Spain to the cities mentioned by Mr. Ward, whose description of kitchens lined with Moorish tiles and running streams in marble channels, and of cloister gardens filled with roses, palms, and aromatic herbs tempted one to make Portugal the objective of a future holiday. He could not follow the construc-

tion of church roofs with coupled rafters. The point of the lecture was the great width of the churches contained under one span of roof, which seemed to offer suggestions for planning for great congregations of worshippers.

Mr. H. M. Fletcher, in proposing a vote of thanks to Mr. Ward, said an architectural student ought not to visit Portugal until he had formed his own style, or he might bring back in his sketch book some of the Baroque and Chirrugueresque details which would appear more remarkable than beautiful when placed in juxtaposition with English work. The Portuguese seemed to run riot in their details, but their real strength lay in their original and very clever plans. The internal effect at Belem and at Batalha was very splendid. He had remarked in churches in the South of France the influence of Spanish and Portuguese art, notably at Bordeaux and at Toulouse, where an effect of great amplitude, given by the lofty masses and the wide, unobstructed plan, was very impressive. The curious influence of English art was also obvious in Bordeaux and other cities in the south-west of France. The free use of tiles and the Baroque treatment in these Portuguese was paralleled, to some extent, in the 17th-century churches of Mexico, as recently made known to us in some photographs reproduced in the *Brick Builder*, a United States publication. Probably they were influenced by Portuguese art. As for the Manoelino art, such rich work was manifestly unsuitable to our sunless climate.

Mr. V. C. Batalha Reis seconded the vote of thanks. It was true that architects and sculptors were imported at all periods into Portugal, but a distinctively national style ran through all the work with a characteristic and almost barbaric touch. As Mr. Fletcher had said, the Manoelino style was only suited for a land of intense sunshine, where one could appreciate the fine effect of isolated masses of coloured tilework or of rich rope decoration confined within formal outline upon masses of plain, unbroken walling. There was less of Gothic work than might be expected, and this was probably due to the fact that in later days Gothic work was destroyed and replaced by current Renaissance work. The unfortunate craze for restoring away historical work of great beauty was still prevalent in Portugal. The rope pattern in ornament, although sometimes used to a wearisome extent, was characteristic of Portuguese art, and was, he thought, often charming in its boldness of treatment. The picturesque effect of the tilework, of the deep verandahs, and tile cornices to the houses, and the numerous fountains and wells, was, he held, delightful.

Mr. P. Cart de Lanfontaine referred to the similarity between the beautiful tilework decoration of Portuguese walling to that to be seen in Algeria, Tunis, and, indeed, throughout the Mediterranean coasts once overrun by the Moors. The use of cord-work, or ropework, as a decorative feature was, however, almost entirely confined to Portugal.

Mr. A. G. R. Mackenzie considered that the artistic use of beautifully-coloured tilework in decoration constituted more than half the charm of Portuguese architecture, as it did also in the buildings of Spain.

In replying to the vote of thanks, which was passed by acclamation, Mr. Ward explained that in many Portuguese church roofs two rafters were placed side by side on either side of a beam, and were united to it by strap laths in cross-patterns, giving the effect of a kind of truss. The lofty churches of wide span, and often devoid of fittings, were exceedingly fine in effect. Many of the early churches in Portugal were, on the other hand, exceedingly narrow, and formed a remarkable contrast to the later ones. There must be many examples of colonial Portuguese architecture, not only in Mexico, but also in the Azores, Madeira, and Brazil, but he had not visited those countries, nor had been able to examine any photographs of the buildings. As Mr. Batalha Reis had said, the rage for church restoration in Portugal was very great, and its results were to be regretted. The rope ornamentation was characteristic of the country, but whereas in the cloisters of Santa Cruz the tracery was entirely carved to represent coiled rope, the effect was bizarre rather than beautiful. He had been struck with the influence of Indian art, often indefinable as to detail, which was evident in many of the buildings of Portugal.

"BUILDING NEWS" DESIGNING CLUB.

A CLASSICAL TOWN HOUSE.

The chief feature of this problem was definitely unusual, inasmuch as the reception-rooms of the house were to be located at the back of the premises overlooking a public park, and the open space on the site, instead of being left as a mere yard, as commonly done, was to be treated ornamentally as part of the residence and made available for sitting-out purposes. The subject had to be architecturally handled inside as well as out, and the façades were specified to be in stone ashlar and designed in a Classic manner. We realised that no little ability would be needed to work out the project. The brief statement, as set out in the conditions, clearly made evident our intentions, which were specifically defined in detail, with the result that the length of the instructions no doubt tended to restrict the competition to the comparatively few, the majority of students funking serious work such as this, particularly when the immediate reward, on the face of things, happens to look so inadequate. Added to this contingency it was possibly too much to expect elementary students to embark upon relatively monumental work, even when asked for within the four walls of so limited an undertaking as this design for a comparatively small house. Its very limitations, no doubt, helped to increase the apparent difficulties to be worked out and overcome. Nevertheless, it ranks as a capital essay in self-improvement on which to test one's taste, industry, and skill. "Enfant" has risen to the occasion, and so well has he succeeded that we are devoting a double-page illustration to his design, which is capitally set out on his sheet, and so clearly arranged for publication. This, of course, is not the chief thing to be considered; but a good planner for the most part may be trusted to contrive his delineations in a presentable form for reproduction, recognising the condition that space has to be utilised to advantage. His design is very superior to all the others submitted, and on his merits alone he is accorded the place of honour. To rightly understand the genesis and lay-out of his plan it is necessary to read the conditions, of which the following is a reprint:—

A Classical Town House, faced with stone, architecturally complete in itself, though forming one of a row of similar buildings. It is to be four stories high, including the ground floor, the level of which is to be 2ft. above the ornamentally-paved forecourt, which is to be 6in. higher than the public footway. The forecourt is to be enclosed by stone posts and chains. No gates or drive-in for motors, etc., are required. The building-line of the front elevation is to be set back 14ft. from the street frontage line. The principal apartments are to be located at the back of the house, overlooking a park, this aspect being towards the south-east. The ordinarily speaking so-called "back-yard" is to be laid out ornamentally with an architectural mural treatment of a simple sort on its three walled-treatment of a simple sort on its three walled-in sides, and thus it will furnish a worthy open-air adjunct to the ground-floor reception-rooms, which will open on to it by French casements. The rear end of this paved space, which is 3ft. above the level of the park garden land, is to be enclosed with a wrought iron screen, 7ft. tall, with a wicket-gate in it, made to match, and giving a private access to the park, and opening outwards. A dwarf stone wall to uphold this terrace, or oblong enclosed "yard," and the iron grill will stand on this wall. The steps down to the park gardens must be mainly inside the fence, though two steps may project beyond the rear building line. The dining-room wing will extend from the main body of the house at its rear, and reach back to the limit of the site, which is 60ft. deep from the line of the street façade, exclusive of the forecourt. The width of the site throughout is 40ft. in the clear, reckoning from the centre of the party-walls. The end window, or windows, of the dining-room are to overlook the park, and the usual architectural features, such as bays, cornices, and columns, may project into or oversail the public-garden land if necessary. The ground plan will include a morning-room or library, a cloakroom with lavatory accommodation for men, an outer vestibule, an inner hall, a main staircase, all laid out architecturally. Possibly an "ante" to the dining-room wing may be arranged. There must be a small service-lobby. Should an internal-light area become unavoidable, reckon that the next adjoining house plan may be a repeat of this one, only reversed in the lay-out, thus doubling the width of such area. A servants' staircase is essential, the kitchen and offices being placed at the top of the house, and this fourth floor may be partly in the roof. The basement to consist of a moderately sized coal-cellar, a wine-cellar, boxroom, and cool-room larder. The tradesmen's door and servants' entrance to be in the main front, set on one side, the principal entrance being central. Put open-grated small areas to light the basement, but not one continuous open area. Generally speaking, the secondary rooms are to face the street. The drawing-room may come over the dining-room; but this back wing is not in its major part to be more than three floors high, the flat at top being partly used as a house-service yard. A lift will be needed from basement to top floor, and it is to be located between the service lobby and tradesmen's entrance vestibule, so as to be handy for general purposes, with a dual carriage, one being for fuel and rougher goods. The detail of this need not be worked out so far as the actual lift is concerned. The boudoir may be distinct from the drawing-room; but a rather spacious landing on the first floor is essential. The distribution of the rooms to be dignified; but it is left to the competitors to fix their sizes and their number, provided there are two bedrooms for the servants, and on the second floor one best bathroom and w.c., as well as a h.m.c. elsewhere. The problem is to plan the best house within the given space. The ground-floor and first-floor main rooms to be 12ft. high, second-floor main rooms 10ft. high, and the third generally to be 8ft. 6in. high, though the kitchen should be more lofty. The front elevation (which should not be over-elaborated in design) to be drawn to the scale of 4ft. to the inch. The rear elevation and section from back to front, showing return elevation of the dining-room rear wing, and three chief plans, to be drawn to scale of 8ft. to the inch. Other plans, as space allows on the sheet, may be to scale of 16ft. to inch. An elevation of the back-fence grills is desirable. No view is needed; but an elevation of the flank-wall at rear of next adjoining house would be an advantage, if room can be had to show it.

By thus recapitulating these instructions, we shall be saved the necessity of going over the ground again to enable the reader to follow, if he cares to do so, why "Enfant" did this, that, and the other; above all, how it was that he did not use the internal space next the street in the ordinary way. The reason is simply because we told him to do the other thing and locate his chief rooms at the back. It may not, at first sight, appear to be so, but actually this reversal of things is far less easy than the regulation plan, and, besides, the kitchen had to be at the top, and not in a basement.

The central hall with the well-light over in "Enfant's" plan makes a commodious feature, and we get square-set steps in an easy-going staircase. The tradesmen's entrance lobby is ample, with a well-screened staircase adjacent to it for the use of the servants. The lift is central, and the service space is well lit and amply large enough, without waste. The loggia alongside of the dining-room probably would have been better omitted, though possibly the balcony above

was thought to be good enough to warrant this feature below. The mural treatment with the niches on the other side of the paved courtyard may have suggested the loggia as a complementary contrivance. More than likely this is true; but the increase of the open space would have been preferable, and an oversailing balcony, all the same, might have been put. A central door at the rear end of the vista, in front of the entrance and beyond the "ante," would have been so much more satisfactory as a matter of plan, and better for its architectural effect. That is what we had in mind. The bedrooms are not a strong feature in "Enfant's" house. Nos. 1 and 4 are the best. No. 2 would have been better if the door had been set anglewise, with the corner of the open area eased off to give space; or the door might have been put in the other wall, facing the fireplace, so leaving the alcove end of the room for the bed to stand in. No. 3 would have been preferable without the columns, and in Nos. 2, 3, 4, and 5 the fireplaces might have been gathered in towards a central flue-stack, and put in the angles next staircase-wall with advantage, so as to mollify the awkward and available proportions of these apartments. The servants' rooms are nicely isolated from the rest, and the kitchen is somewhat detached from the centre of things, with advantage, directly opening into the yard. The bath is quite close enough to the pantry; but food is not to be kept there, the larder being in the basement. Still, cooks are human beings, and are liable to run risks to save trouble. In a town house of such a limited size, one cannot have everything, and the domestic service put up in the air, as here shown, must be less objectionable than in a stuffy basement, with all the cooking smells rising through the building, as they are apt to do even in the best-regulated families.

The front elevation is really quite good, and overcomes the difficulties of the internal contrivances very adroitly in a self-contained way. It was, in a sense, a bothersome thing to insist on the tradesmen's door, located on the ground floor, being set directly opening on to the forecourt. "Enfant" makes it almost appear a most natural thing to do, and, anyway, the treatment adopted is straightforward and sensible. The loggia at back of the house, with the double columns on pedestals, we would prefer to omit. The big-pilastered treatment of the dining-room end-block wall only helps to make this twin-column business look more small and fussy. Some good consoles projecting on the return front, and an iron-balustraded balcony from end to end, might have obviated this lack of proportion; and, besides, the iron grille next the park could then have been made with advantage one bay larger. The steps project more than we intended, and look commonplace. Two steps curving inwards and three steps curving outwards suggest a better solution. The mural treatment in the section is a minor matter; but if we carried out the house, a revise would be desirable, and changes would be easily possible, as "Enfant" does give a chance for a good treatment.

"Keystone" is second, and "Youngster" comes third.

"Keystone" takes the tradesmen's door down into the area, where there is a hall; but to get the goods round to the lift, the boxroom (so-called) has to be traversed. This is not satisfactory, and the hall on the ground floor is not particularly good. The second hall, which we did not ask for, encumbers the reception-room badly, and the lift is not needed off the hall. The word "lounge," to emanate the cramped space next the main hall, would be hardly convenient for people to lounge in, while the staircase itself has not been worked out properly. The palatial entrance from the "paved garden" at back, and leading into this awkward combined "lounge" under the stairs, is quite out of character with it. The cloakroom and lavatory for gentlemen is big enough for a club. The drawing-room is a fine apartment, though by placing a doorway in the middle the room is bisected badly. The w.c. on the second floor is much too small for comfort, and the landing is not roomy enough as an adjunct to such spacious reception-rooms. The landing is much larger on the floor above, where it is not wanted so urgently, and the lighting is poor. A bedroom opening out of a scullery is scarcely ideal, and the kitchen should be nearer the yard, on the flat. The second lift, spoken of before, is accessible only from a bedroom on the top floor, and that one belonging to the household, and is quite apart from the servants' use. The elevation passes muster; but the porch is disproportionate, and is needlessly broad. All the coal would have to be carried in through the tradesmen's hall to the coal-cellar—a most awkward business.

"Youngster" washed-in and shaded his drawings contrary to the rules and regulations. If that settled everything, he would have been thereby ousted, and, as it is, we cannot publish his drawing, though he ranks third. That position he secures because no other remaining competitor sends in a better plan, or, at any rate, one more nearly complying with the Conditions. His plan is not remarkably good. In some respects it is clumsy, and items in it are inadequate—such as the men's cloakroom, with the exposed w.c. on an inner-screen wall. This w.c. is minus a door, so that no one could enter the cloakroom while the w.c. is in use, indeed the whole provision is neither select nor becoming. The main staircase, none too architecturally managed, sweeps out awkwardly from the oblong and very dark hall. There is no predominating dignity or centre-line. Three rooms are provided on the ground floor—a dining-room, a morning-room, as well as library—both the latter communicating. The first-floor w.c. is in the bathroom. The reception-rooms on this story are very good, and the drawing-room is over the dining-room. There are five bedrooms, and two more for domestics. The kitchen, with clerestory lights, is a good one, though it is not near the yard. The lift is well placed, and an inner area lights the upper part of servants' staircase, also the first-floor landing—which latter, however, is ungainly on plan. The façade has a centre-piece distinguished by fluted Ionic pilasters set on a rusticated ground story. Pedimented dormers come out flush and break the balustraded parapet in a picturesque, if fussy, manner.

"Punch" encumbers his house by telescoping the end of his dining-room at the rear to make room for a pergola—unless, indeed, he put the latter as an afterthought to fill up the site, which course seems the more probable. The library cuts the hall off from the paved rear terrace. The hall sets forward as far as the frontage, and much space is lost in this inconsequential manner on both the main floors, without much regard to the available means of lighting. The plans, in fact, look more commodious than they really are. The music-room is larger in area than the drawing-room, and the boudoir leads to a bedroom, as well as to a lavatory and w.c. The latter, perhaps, would be thus made very private. The fault is, the boudoir becomes in this way too much of a passage, and it is much too important a room for that, with its balcony in front over the porch below. The elevation is cut up vertically too nearly into three parts, with Ionic columns. The extremities extend beyond the limits of the plot, which is contrary to the conditions, the cornices projecting. No r.w. pipes are shown, and the rain must find easement somewhere. "Punch" is a neat draughtsman, and arranges his material well. He therefore should do better, and will if he perseveres.

"L. L." sends an old-fashioned looking façade, with enormous fluted columns of the Corinthian order. In execution it is not unlikely that this front would look very well, recalling details of 18th-century work. The author has ignored our instructions, and placed the dining-room on the first floor front, looking over the street. The plan is sacrificed to the vast hall and its front vestibule, while the paved open-air space, called "A Garden Court," is covered in below the drawing-room, which is parallel to the frontage, a lounge pairing with the library on the ground floor. The grand staircase has an oval well, and would be more in scale in a public building. The steps are at right angles with the wall, the quarter spaces being square without any radiating reference to the oval well. Twin arcades occur at ends of the hall, which thus extends the whole width of the site, and wastes an enormous area of space badly.

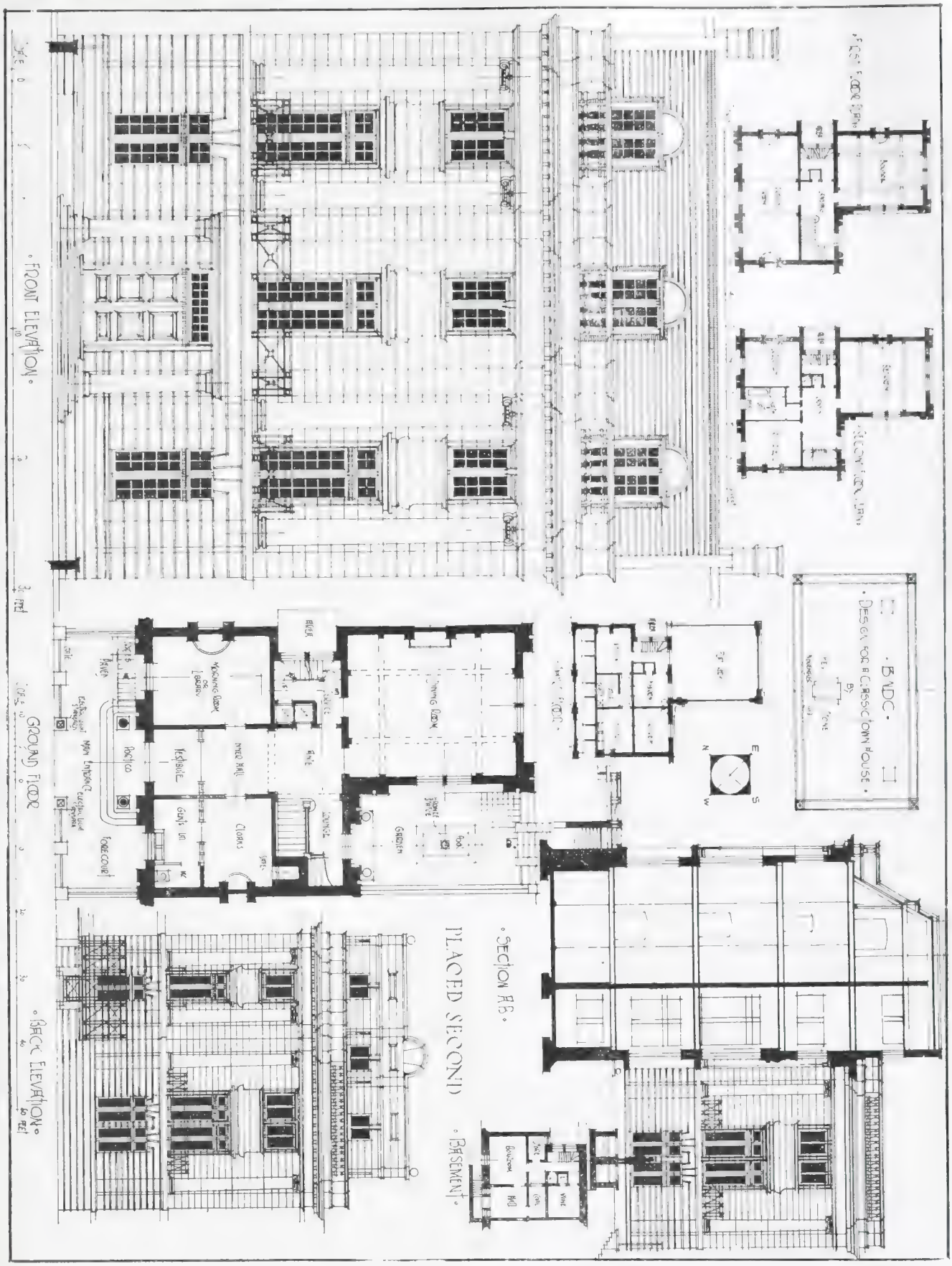
"Because" is extremely neat, and sends a pavilioned façade with a portico cleverly devised, the tradesman's door at side being nicely subordinated. The plans are spoiled by the rambling big halls, with a meaningless "ante" situated awkwardly midst very thick walls curved out on plan, and with doors crowding this approach, which would never be used, as there is a second door hard by direct out of the inner hall, saving the fuss of going through this oddment called an "ante." The "ante" on the first floor is really a circular little room anterior to nothing, save that perambulating guests might, if so minded, make a return that way after traversing the pair of drawing-rooms. They need not, however, go so far, because a door direct on to the landing intervenes, and is much more handy. The landing is repeated on the second floor to the same size, which is wasteful, and it has no light whatever at one end, save what can be got from the staircase area windows round the corner. This plan has points of merit, and so have the elevations, but with all his care and neat drawing, over which much pains have been properly expended, the author falls short of success. He makes folks go through a bedroom to reach the bathroom, and through the bathroom to get at the w.c. This awkwardness of contrivance also happens in the bathroom at the back of the second floor, in so far as the w.c. is concerned. A little thought would have obviated such initial faults.

"Norvic," thus low down, deserves no higher place. He puts the staircase in front of the house, and drops it at the first floor level, duplicating the service-room on the same floor, and curtailing the upper hall or landing by a passage which could have been far better left out. The elevations are indifferent, and the gentlemen's cloakroom is small, with a very capacious w.c. beyond it quite out of proportion.

"Sherwood" is not good, cutting up his rooms badly, with an inordinate fancy for ingle-nooks set far from the light. The tradesmen's door is put back a long way from the frontage line, with a narrow outdoor passage in consequence, curtailing the site badly just where space is invaluable. The elevations are extremely poor, but as to the author's industry and endeavour to do well, we have no doubt whatever. His mistake is that he works on wrong lines. He inks in carefully and prints nicely, but he wants teaching by a competent master.

"Amo" arrived late. His drawings are awkwardly put on his sheet—we can scarcely call them arranged—one plan overlapping the other with confused results. He breaks forward the façade by carrying the porch up to the parapets cornice. The walls are enormously thick. Too much space is lost in the ground plan on service provisions, and cramping one bedroom badly on the first floor. A great feature is made of an elliptical staircase, and passages waste space on the upper floors. The elevations lack interest and style. The ironwork screen behind is very indifferent.

Later to hand still, and consequently recorded at the end of this report, is a clean-cut and by no means indifferent scheme by "Roy," who forgot to fill in the staircase on his second-floor plan, though he leaves the space for same and finishes it all right at the top story level. He misses the point of the project in so far as the tradesmen's entrance lobby goes by placing it in the centre of the building instead of towards the front. This involves a loss of valuable room, owing to a long dark passage by the side. Anyhow, the tradesmen must wait in the lobby, if not in the passage, and so they are brought too intimately into connection with the adjacent back staircase, in the well of which the lift is placed.



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This latter arrangement is awkward, owing to the lift opening at its several stages directly on to the steps of stairs instead of on half-space landings, though on the top floor it comes properly on a level floor. The hall is roomy, but not very architecturally devised, with the chief stairs set on the front wall turning sharply to the left of the entrance vestibule. The windows bear no reference to this staircase, and on the first floor landing they would look very out of character in consequence. The internal area is too diminutive to be of much use for lighting, and the serving hatch is not roomy enough for effective service, there being too little space round about it to move in. The w.c.'s on the two upper stages are inclosed in the bathrooms, while on the first floor the w.c. is made somewhat capacious and called a "lavatory," there being a basin fixed on the drawing-room wall. The juxtaposition of this w.c. with this main apartment obviously devoted to receptions strikes one as most objectionable. The drawing-room itself is a good one, set as it is over the dining-room, but the latter is made unshapely by the intrusion of the area wall and the service hatch. The bedrooms are much better than in many of the plans, and so are the steps from the paved terrace, which is spacious, though not laid out befittingly, because the paths suggest grass plots, cutting up its area badly. The front elevation is not self-contained, the cornices running on, and the treatment ranks as indifferent. The façade towards the park is extremely poor and nondescript in style.

COURAGE IN COLOUR.*

DEFINITION OF COLOUR TERMS IN PRACTICE.

Very often confusion arises through the carelessness or vague application of terms in describing colour and its qualities. It may be advisable here to explain briefly the theory of colour production and to make clear the exact meaning of the terms employed in dealing with the subject. A spectrum shows the component parts of a ray of light separated from one another so that each part or colour may be seen separately. In the rainbow or glass prism each colour may be seen separately, although they merge together by indeterminate gradations in the following manner: From reds to oranges, to yellows, to greens, to blues, to violets. These form the spectral colours. From this it will be seen that a white ray of light can be resolved into the colours of the rainbow, and that all the colours of the rainbow together produce a white ray of light. This unity of white is produced by a combination of the three primary colours. The primary colours are those which cannot by any known process be further resolved. They are not produced by the combination of other colours. The primary pigments of the palette—red, yellow, and blue—are not the true primaries of the spectrum, inasmuch as they only produce a pale grey-white. As pigments, however, they are employed as primaries for the production of other colours. Therefore, in this work the primary colours are taken as red, yellow, and blue. Secondary colours are combinations of two of the primaries—for instance, red and yellow = orange, yellow and blue green, and blue and red violet. These secondary colours may incline more or less to either of the primaries, thus producing what may be termed intermediate secondaries. They may be called red-orange, yellow-orange, yellow-green, blue-green, blue-violet, and red-violet. Pure colours are the pure washes of the three primary, the three secondary colours, and their six intermediate tones. It will be seen that not more than two of the primaries are employed to produce any of these colours or tones. If a third primary had been employed, it would have dulled their purity. Broken colours are the pure colours broken up by the addition of white, or broken down by the addition of black. Broken colours, therefore, are the dulled tones of pure colours. Not only is the purity affected, but in some degree the tone also. For instance, black added to yellow gives it a greenish tone. Tertiary colours are combinations of nearly equal proportions of two secondaries, thereby introducing some of the third primary. Thus, orange and green—citrine, green and violet-olive, and violet and orange russet. Citrine, therefore, although composed principally of yellow, has a due share of blue and of red. Olive and russet, it will be seen, are also composed of the three primaries. Every mixture of the three primaries is a step towards blackness until, with balanced proportions, actual black is produced. The tertiary colours may incline more or less to either of the secondaries. Tertiary colours in their lighter tones are called greys. Complementary colours are those which contain the completing or finishing colour or colours necessary to form the spectrum, or white light. For instance, we know that the primary pigments red, yellow, and blue produce a pale grey-white; therefore, the complementary colour of red would be the completing colour green (yellow and blue), the complementary colour of yellow would be the completing colour violet (red and blue), and the complementary colour of blue would be the completing colour orange (red and yellow). So much depends upon the perception and appreciation of the complementary colours that some care has been taken to devise a means of adjusting the differences between the complementary colours of the palette and complementary colours of the spectrum. Twelve pure colours may be arranged in a chromatic circle. A circle is divided in its circumference into 360deg. The complementary or completing colours of the palette are found to be on the opposite diameter; in other words, they are separated by 180deg., or half the circumference of the circle. For instance, green is found opposite red, yellow opposite purple, and blue opposite orange. A more near approach to the true complementaries of the spectrum is found in those colours separated only by about 150deg., or those colours to the left of the opposite diameter. By using a revolving disc within the limits of the slot and pin, fixed at a certain point, the following combinations are successively seen:—Blue and orange-yellow; violet-blue and yellow; violet and green-yellow; violet-red and green; red and green-blue. These may be taken, for all practical purposes, as the most effective complementary colours. Seen in pairs, they produce in each other the most satisfying effects and the strongest contrasts. Those colours in which red or yellow predominate are called "warm" colours, and those in which blue predominates are called "cold" colours. For instance, green-yellow and violet-red are warm colours, and also the yellows and reds between them. It is possible to use the term "warm" or "cold" to an individual colour; for instance, a violet-blue might be termed a warm blue or a cold violet, a yellow-green might be termed a warm green or a cold yellow, etc. "Gradations" are the gradual changes from colour to colour, and from light to dark. "Shades" are the gradations of a colour from light to dark by the addition of white or by the addition of black. "Tones" are the gradations of a colour by the addition of another colour. A whole scale of red shades may be altered in tone by the introduction of blue, thereby making the reds more violet, or by the introduction of yellow, thereby making the reds more orange. "Hue" has a similar meaning to that of tone; but the word is mostly confined to popular speech and poetry, and is mainly significant of brilliant colouring, as the hues of the rainbow or the hues of the flower-garden. "Tints" is similarly employed for pale shades; it is mainly significant of soft colouring, as the tints of autumn leaves. "Scale" is a collection of the tones of a colour, including its shades and its tints. "Chromatic scale" is the entire gamut of the primary and secondary colours, with all the intervening tones and shades. "Chromatic circle" is an arrangement of the colours in a circle so that the reds join with the violets. "Brightness" of a colour depends upon the amount of light that it reflects, and is independent of its purity. The lighter tones or tints possess more brightness than the darker tones or shades. "Intensity" is the quality of a colour in which the greatest purity and the greatest brightness unite—so much so that if the brightness were increased, the purity would decrease. "Contrast" is the effect produced by the nearness of two or more colours, tones, or shades. For instance, if red and yellow be placed together, they will affect each other: the red will acquire a slightly violet tone, and the yellow will acquire a slightly green tone. If a dark and a light shade of any colour be placed together, the dark will appear darker, and the light lighter. "Simultaneous contrast" is the effect produced when two shades or colours are seen together. For instance, they will appear as dissimilar as possible, both in the composition of the colours and the height of the shade. The results may be harmful or beneficial to each other. "Successive contrast" is the effect produced when two shades or colours are seen after each other. For instance, having looked for a certain length of time on one colour, it will be found that the next colour looked at will be affected by the complementary of the colour of the first. The result may be harmful or beneficial. "Harmony" has a different meaning when employed in reference to musical matters to that which it has when employed in reference to colour and design. Harmony of colour consists in a combination of many qualities subjected to the same influence to secure one pleasing purpose. For instance, the harmony of colour by gradation, the harmony of colour by contrast, the harmony of tone, the harmony of proportion or balance, etc.

BEAUTIFUL COLOURING.

The theory of colour-production depends upon the combination of the primary colours in different proportions, and it must be noted that true value of the colours depends upon the juxtaposition of one to the other. Colours are so altered by the manner in which they are seen together that it becomes essential for all users and sellers of coloured goods to acquire some knowledge of the theory of colour-production and colour-selection. They will, in their everyday occupation, easily realise how to obtain the best advantages from colour, whether in the manner of presenting coloured goods in windows or showrooms, or in securing the best combinations for wearing apparel, or for the decoration of the home. There is a great difference between appreciation of colour and manipulation of colour. Anyone can be schooled to a proper appreciation of colour. In Tropical and sunny latitudes less courage is required in using bright colours, because the brilliancy of the sun subdues them, and the people in these countries have rightly appraised the value of this property of light. Northerners, however, require stimulating colours more than those who live in warm sunshine, and fortunately bright colours have a greater force in dull climates. We have been so accustomed to the dowdiness of drabs and the gloominess of greys that it is even assumed that people of taste should admire dull colours, and that only vulgar persons like bright ones. The love of colour, however, is now awakening, and we can expect with certainty a greater luxury of pure colour inside our houses. In time more of it may peep out of doors, and then show itself quite bravely, to cheer the greyness of our towns. In considering the application of brighter colours in our homes and surroundings, the two main attributes of beautiful colouring should be insisted upon: gradation and contrast. The sellers and users of coloured materials will realise the importance of grasping these two essentials in their everyday application.

GRADATION IN COLOUR.

The first essential of beautiful colouring is "gradation." No entirely beautiful colour exists without the quality of gradation. Plain-coloured surfaces, under most conditions, emphasise the most beautiful attribute of colour—that of gradation. The play of light on a surface produces a far finer and more luminous gradation than any made by pigments. The effect is almost as fine on the plain-coloured walls of a room as on the folds of a curtain, or on those of a robe. The difference between the deepest shade and the lightest tint is truly amazing. These gradations are a constant delight to those who look for them.

CONTRAST IN COLOUR.

The second essential of beautiful colouring is that of contrast. Practically all gradations are beautiful. All contrasts are not. It is the bad contrasts that usually constitute bad colouring. The everyday application of beautiful colouring requires that the theory of contrasts should be appreciated and understood. Contrasts are known either as simultaneous or successive contrasts. There are contrasts of shades, contrasts of tones, and contrasts of shades and tones. These are the qualities of contrasts. Contrasts are bad either in quality or quantity. The sellers and users of coloured materials will realise that to safely employ courage in colour, it is necessary for them to understand and avoid bad contrasts. With that object, it will be helpful here to consider a few simple experiments: (1) Place in a good light, about twelve inches apart, two squares of a lightish grey paper or a material without gloss. Take two other squares of dark grey, and place one of these next to one of the lighter grey squares. Place the other dark one about twelve inches away from its companion in the opposite direction to the lighter one. Gaze at them for some seconds, and it will be seen that the light and dark squares together in the centre are either

* By R. Goulden Lovell Varley, Vice-President S.A. A paper illustrated by coloured diagrams and charts, read before the Society of Architectural Students.

much lighter or much darker than their companions twelve inches away. The two squares side by side have not a uniform difference over their entire surfaces; but the greatest contrast is seen where they touch together. The foregoing is an example of simultaneous contrast in shades. (2) Place a black square on a red ground, gaze at a corner of the black for some time, and jerk it away with a piece of thread, keeping the eyes fixed upon the space it occupied. It will be found that this space then acquires a more intense red than the remainder of the ground, which will be dull, as if it had been broken down with black. This is an example of successive contrast in shades. (3) Take two squares of the same red paper or material without gloss, place one square on a ground of similar red, and one square on a ground of green of about the same intensity. The difference in the two red squares will be so great that they give the impression of entirely different colours. This is an example of simultaneous contrast in colours. (4) Place a blue square on a red ground of similar intensity, gaze at it for a time, and then jerk away with a piece of thread. In the place occupied by the blue square will appear an orange-red image. This is an example of successive contrast in colours. (5) Place two squares of the same red material or paper about twelve inches apart. Take two squares of the same yellow material, and place one of these next to one of the red squares. Place the other yellow square about twelve inches away from its companion in the opposite direction to the red ones. Gaze at them for some seconds, and it will be observed that the outside squares will appear normal red and normal yellow, while the same colours placed together will appear to have mixed with them the complementaries of the one beside it. The red will become purplish and darker, and the yellow will become greenish and lighter. The foregoing is an example of simultaneous contrast in shades and colours. (6) Place a small square of red in the centre of a ground of grey, remove with thread as before described, when an image of greenish blue will take the place of the red square. This is an example of successive contrast in shades and colours. (7) Place a small square of grey in the centre of a large ground of green paper or material. Notwithstanding the much larger surface of the green, unless one stares for some time, very little change is apparent. Cover the whole with a sheet of white detail-paper or white tissue paper, and immediately the small square of grey becomes a pale red. This example shows that the contrasts of intense colours are less evident than the contrasts of lighter shades. These seven experiments are typical of hundreds of others which can be made with various combinations. All of these experiments prove that if two colours are seen together, either at one time or within a very short interval of time, they will appear as dissimilar as possible, both in regard to their shades and colours. To appreciate the development of the chromatic scale, an interesting experiment can be made with an ordinary prism of common glass. Hold this to the light, and turn until the spectrum is seen red on top and violet below. Turn until these colours join in forming a band of bright red, green, and violet. Slightly turn the prism again, and the band broadens to reds, oranges, yellows, greens, blues, and violets. These, and the innumerable gradations existing between all of them, are the spectrum-colours which we strive to imitate with pigments. All pigment colours are dirty compared with the spectral colours. The nearest approach to them is to be found in fine stained glass held to a bright light.

COURAGE IN COLOUR SELECTION.

To revert to the consideration of contrasts, colours may be chosen so that they are mutually helpful, and appear precious and beautiful, or they may be mutually harmful, and appear either glaring and gaudy or dull and dirty. It is evident that the complementary colours appear the most complete and lustrous. It will be further observed that colours other than the complementaries, when they are brought into contrast, appear to be moved farther apart. For instance, with red and yellow in juxtaposition, the red is moved nearer to purple, and yellow nearer to green. This is proved by the fifth experiment. In this case the contrast is somewhat harmful, and produces a gaudy effect, particularly if used in nearly equal masses.

CONTRASTS OF TONE.

We know the most helpful contrasting tones to be the complementary colours. Bad contrasting pairs of colours are those closely related or those standing near each other on the chromatic circle without any gradation between them. For instance, red and orange, blue and violet, green and blue, are all bad contrasting pairs of colours, particularly in the lighter shades. A good method of obtaining an uncommon and effective contrast is by pairing related colours not less than 90deg. apart. For instance, red with yellow-orange or orange with violet-red will make a courageous combination that could be well employed to produce a striking effect. The same may be said with all the other colours similarly placed: blue and violet-red, or violet and green-blue and green and violet-blue, or blue and green-yellow. The names employed are used arbitrarily to cover a group of colours, tones, and shades which owe their origin to these primary or secondary colours. A very small proportion of actually pure colour is seen in Nature; it is usually surrounded with its own tones and shades, and they in turn are supported by the greys and broken colours of the same or other groups of colours.

CONTRASTS OF SHADES.

Having considered in a general way the contrasts of tones, we may now consider contrasts of shades. These are very frequently ignored, and this must be held responsible for most of the bad colour contrasts and combinations. Different shades on the same scale make good contrasts. It will also be found that in any pair of complementary colours the different shades in each, used indiscriminately, will contrast well. These observations apply not only to the pure colours in the chromatic circle, but also to the broken colours and the tertiary colours and greys. The bad contrasts are usually those in which the contrasts are mixed—that is, a contrast in tones and a contrast in shades is found in the same combination. Some æsthetic skill is required before making good mixed contrasts in tones and shades.

THE USE OF PURE COLOUR.

The foregoing are considerations upon the qualities of contrasts. There only remains the consideration of the quantities of contrasts. In most colour schemes it is desirable to have a dominant tone, which should be supported with a small proportion of a good contrasting colour, or with a small proportion of a purer colour of the same group. The nearer this supporting colour is to a primary, or the nearer it is to a pure colour, the less there is required of it. What is given up in mass is gained in brilliancy. Thus, only a very small proportion of the primary blue is required as a contrast to the orange-citrons, and a somewhat large proportion of the yellow-orange secondary is required; or take the olive-green as the dominant hue, and the same observations apply: more of the yellow-orange secondary as a contrast, or less of the blue primary, which belongs to the same group as the olive-green. Only pairs of colours have been considered at present; but if, as a basis, these are well chosen both in qualities and quantities, it is not a difficult matter to determine upon another colour to provide balance or sparkle. This cannot be arrived at by any rule: feeling and judgment must be employed. Examples will be given in describing the various decorative schemes. It is desirable to make careful observation, judging and comparing both with black and with white. Also, make the tests in bright daylight, dull light, and night light. Note the observations, and apply them to one's daily work, using the charts as often as possible. This will lead to attempting the use of more pure colour and more striking contrasts in our surroundings.

GENERAL RULES TO BE OBSERVED.

The following general impressions of colour-combinations will be noted, and others should be added as they are observed. (1) The best contrasting colours are the complementaries. (2) Similar shades of two complementaries make excellent combinations. (3) Any shade of two complementaries makes good combinations; but care must be taken that they are shades of the same tone. (4) Any shades of one colour make excellent combinations; but care must be taken that they are shades of the same tone. (5) Colours more than 90deg. apart make good combinations, but should be only used together in similar shades, excepting the complementaries. (6) Colours only 90deg. apart make risky but striking combinations, and should only be used together in similar shades. (7) Colours less than 90deg. apart make bad combinations, unless in small gradations. (8) Different shades of all contrasting colours, excepting complementaries, make bad combinations. The primary colours en masse are too vivid for a dull climate, and the tertiary colours are too dingy; therefore, the primaries should only be employed in small quantities, to give sparkle. If tertiaries are employed, they should be associated with some bright colour of the same group, or of the complementary group. (9) It is always risky to use three primary colours alone in a decorative scheme; never attempt it if they have to be of about equal proportions. (10) Many pure or bright colours seen together have usually a bad effect. There is one method, however, by which a very beautiful and striking result may be obtained—that is, by using the pure colours in comparatively small quantities against a mass of black. A draper's window, for instance, might be draped with folds of a dull black material, and pure or bright colours could then be shown in small proportions quite indiscriminately, and they will appear to sparkle with brilliancy. (11) Pure colour should be used sparingly to produce a good effect as, for instance, a bright coloured trimming upon a broken colour or tertiary of the same range. A superior effect is secured by using the lighter shades for the principal articles, and the deeper shades for the accessories. (12) A pure colour can always be used on black with good effect; the black may assume a slight hue of the complementary. (13) A pure colour on white appears brighter and deeper, and faintly tints the white with its complementary. (14) A pure colour on grey of a proper height usually appears purer than either on black or white. The grey assumes a stronger hue of the complementary than either black or white. Care should be taken that the grey (which is a light tertiary) should be preferably of the same group, or of the complementary group of the colour used. (15) Do not be afraid of using black: it is far more helpful than either white or grey, particularly with striking contrasts. A striking window-display—say of white straw hats—can be obtained by draping black velvet or cloth as a background. This represents a contrast in shades. (16) To make a range of textures into a striking window or showroom display, use as a background a mass of the complementary colour. For instance, a range of blue textures could have as a background a deep yellow-orange. This represents a contrast in tones. (17) Contrasts are more pronounced with cold than with warm colours. If deep and pale colours are placed together, the latter is generally injured, unless the two colours happen to be complementary. (18) If similar-coloured goods are seen together they appear duller, and if a succession of goods of one colour be shown, the last will appear quite faded and dirty. This is most important to all persons showing colours. If a buyer is to have a true appreciation of colours shown in succession, an excuse must be found to introduce the complementary colour occasionally, even if in another material. For instance, if the last of the series of bright-red books is not to appear faded and dirty, a piece of green-blue cloth or a green-blue book should be looked at. (19) In dressing windows or showrooms, complementary colours should always be

shown together if the best value of each is to be obtained. (20) A successful window or showroom treatment is to dress them either in gradations of shades or in gradations of tones. This gives a breadth and boldness which is bound to attract. (21) If a window or showroom is to be dressed in shades of one colour, the shades should be placed to grade from lightest to darkest, or vice versa. If it be dressed in gradations of colour, then the goods should be placed to grade through the different tones from colour to colour—say from purple through blues and greens to yellows; but the gradations should be of small intervals. (22) If figured goods of a similar tone are to be shown, they should be separated by contrasting self-colours, or by black or white or grey. (23) Masses of different colours should be shown in the same shades. Try not to show mixed contrasts of shades and tones. (24) It is easier to combine deep broken colours than pure colours or light colours. (25 In colour-combinations, endeavour to obtain balance: avoid one colour in a scheme attracting the eye. This can frequently be done by lowering the shade of the offending colour. (26) In all combinations it is necessary to introduce at least one warm colour. Some of the aniline dyes have a degree of intense purity which is very undesirable, and when seen in strong daylight they appear to jump into the eye so as to give a painful impression, and produce an extremely gaudy effect. This applies particularly to intense colours in large surfaces, such as walls and complete dresses, etc. In smaller articles these intense colours are more allowable, and if associated, for instance, with black, they frequently produce an almost jewel-like effect. (27) To minimise a harmful contrast, use a smaller amount of one of the colours, or introduce a third colour of considerable distance in the chromatic circle. (28) Greens are most difficult to manage together: a combination of various tones of green alone, even if carefully graduated, is not pleasing. It is necessary to introduce another colour to relieve the combination from dullness. (29) Bits of blue do not look well; blue should always be used to the fullest extent possible. (30) Avoid realistic representations of natural objects; don't attempt to imitate Nature: you can't. Use conventional substitutes instead. (31) Dull rooms require bright colours, and in bright rooms use dull ones. A sparkle can be introduced into the dull colour by a small proportion of its complementary. (32) The treatment of a room, or of a window, should be considered as a whole. Every colour introduced will have its effect upon the other colours. (33) Great repose and dignity is obtained by plain surfaces. It is amazing to find what satisfying results are obtained by plain-coloured surfaces; only, care and courage are required in selecting the tones. Far more effect can be obtained by colour than by ornament, and, in addition to this, there is far greater economy in the cost.

ECONOMY OF COST.

It is the purpose of the schemes shown in the recently-published books on "Home Interiors" that they should entail little or no extra money to that usually expended on similar rooms if they had been treated in the orthodox manner—that is, with ornamental cornices and centre ornaments, exaggerated architraves and mouldings, stained-glass windows, and heavy venetian blinds, ornate stoves and mantelpieces, and a decent quality of wallpaper. The carpets, curtains, furniture, and fittings might all be comfortable and lasting, but possibly mixed together without any proper consideration for the general effect of the whole. A well-appointed room is one where nothing particular is in evidence excepting an agreeable sense of comfort and utility. To obtain this requires far more thought and knowledge than is generally supposed. Not only must the room be a pleasing unity in itself, but the best results must be secured from its component parts, and the general effect of the room must accord well with its surroundings. This a large field to cover. Many features have to be considered, and controlled by definite guiding principles. They have to be co-ordinated into one agreeable whole, and expert knowledge of the various industries has to be applied before reliable advice can be offered. A well-considered scheme appears to be worth far more than its actual cost. In this respect alone a great economy is effected, and will repay the time and thought required in considering the matter.

HEALTH GIVING COLOURS.

There is one other aspect to be constantly borne in mind in the employment of colour. I leave this to the last, as it may be considered of the most dominating importance—that is, the selection of colour from a scientific standpoint. The scientific influence which colour has upon life generally has been but little understood. It has been conclusively proved that, whereas blue has a most stimulating and health-giving power, green produces entirely the reverse. Anybody can prove this for themselves if they will take a series of cloches, or the glass bells used in French gardening. These should be of all colours, and if placed over any living object—such as plants, insects, etc.—it will be found that those under the blue cloche will increase in size, vigour, and vitality, and those under the green cloche will wither away rapidly. It will further be found that the colours between the blue and the green will run in the following order of life-giving properties: blues, violets, yellows, reds, and greens. You will further realise how, in the selection of the colour decorations of our homes, this aspect of the question should be constantly borne in mind, and how much more so in the hospitals and sanatoria—and these, unfortunately, frequently err in this respect. Whereas a patient will have a hopeful, stimulating outlook on life if lying within blue surroundings, an entirely opposite effect will be obtained if surrounded by greens and reds.

CHARTERED ARCHITECTS OR STATUTORY REGISTRATION.

Mr. Edwin T. Hall, in the current "Journal" of the R.I.B.A., suggests revision of the Council's proposals on the following lines:—

"(1) That all Fellows, Associates, and Licentiates of the R.I.B.A.; all members of any Allied Society whom the Council of that Society shall certify are engaged in the bona-fide practice of architecture; all members of the Society of Architects who shall be similarly certified; all architectural members of the Royal Academies of England, Scotland, Ireland, and Wales; all graduates in architecture of the United Kingdom; all other architects who have been in practice eighteen years; and all persons who, after the granting of this Charter, shall have been examined and duly passed by the Council of the R.I.B.A., shall have the exclusive right to use the distinctive title of 'Chartered Architect.'

"(2) That the Royal Institute shall be empowered to form and maintain a register of all persons entitled to use the title of 'Chartered Architect.'

"(3) That, subject to By-laws for the time being, the Council of the R.I.B.A. shall formulate, and from time to time alter and amend a scheme of examinations to be held to qualify for the title of 'Chartered Architect,' and to appoint examiners for the conduct of such examinations; to pay the Examiners such fees as the Privy Council may approve; to fix the fees payable by candidates for such examinations, and, subject to the approval of the Privy Council, to alter such fees from time to time.

"(4) That the Council of the R.I.B.A. shall be composed as follows:—

(a) The Fellows of the R.I.B.A. shall be represented by 21 Fellows:

(b) The Associates shall be represented by 10 Associates;

"(c) The Licentiates shall be represented by 5 Fellows of the Institute who shall have passed to that rank by examination from the Class of Licentiates, such representatives to be annually elected by the whole body of Licentiates;

"(d) The Society of Architects shall be represented by two of its members, one of whom shall be the President of that Society, and both of whom shall be Fellows of the R.I.B.A.;

"(e) The Allied Societies shall be represented by their Presidents as at present;

"(f) The Architectural Association shall be represented by its President, who shall be a Fellow or Associate;

"(g) The four Standing Committees of the Institute shall be represented by the Chairman of each, ex-officio, who shall be a Fellow;

"(h) The Board of Education shall be similarly represented by its Chairman, ex-officio.

"(5) That the R.I.B.A. shall be empowered, subject to the approval of the Privy Council, to issue a scale of fees payable to 'Chartered Architects.'

"(6) That the R.I.B.A. shall be able and capable in law, notwithstanding the Statute of Mortmain, to receive, purchase, possess, hold and enjoy to them and their successors a Hall and any messuages, lands, tenements or hereditaments whatsoever, the yearly value of which, including the site of the said Hall, shall not exceed the sum of £5,000 per annum.

"That subject to the provisions contained in this Charter, the existing Charters shall, so far as unrepealed or varied, have full effect and validity and be confirmed accordingly.

"By this scheme it will be seen that while the purview of the Institute is broadened in a manner commensurate with its greater responsibilities (a) the constitution of the Institute remains unaltered; (b) the principle that only corporate Members shall sit on its Council is maintained; (c) the Educational basis of Membership is not affected; (d) the class of Licentiates is represented by its own nominees in the management of affairs; and (e) all Societies of Architects, whose numerical strength is considerable, have a voice in the direction and control by the central Council of all matters pertaining to architecture and to architects on the Register."

"I hold," concludes Mr. E. T. Hall, "and always held while I was in office, that it is the duty of the Council to endeavour to give effect to the Resolution of March, 1907, in favour of applying to Parliament for Statutory Registration as soon as practicable. I believe it has tried to do so, and I note the Council has anew given its assurance that that Resolution shall in no way be prejudiced by the adoption of any present proposals, but shall be put into force at a time when Parliamentary business affords a prospect of success. That being so, it has recommended as an intermediate step the application for a new Charter; and, personally, as one who has been long and intimately connected with the progress of the Institute, I think it is wise to follow that advice, always provided that the Charter is drafted with jealous regard to the rights of all parties and with a statesmanlike outlook to the future."

We may say something about these proposals next week and the week after, when we shall review the whole situation.

The Birmingham Town-Planning Committee have appointed Mr. F. O. Nash, assistant to the city engineer of Newcastle, to the post of chief assistant to the Birmingham city engineer in the town-planning department.

At the annual meeting of the Washington State Chapter of the American Institute of Architects, the following officers for the ensuing year were elected: President, Charles H. Alden; vice-presidents, J. F. Everett, G. F. Cove, K. K. Cutter; secretary, Arthur L. Loveless; treasurer, A. C. P. Willatzen.

What will be Vancouver's second tallest building is rapidly taking form. The structure will be fifteen stories in height, and will cost over 700,000dol. The building is of steel frame construction. In finishing the building the novel system will be adopted of treating each two stories as a separate building, which will mean that many more men will be able to work at once, and every floor will be completed simultaneously. The architects are Messrs. Russell, Babcock, and Rice.

Current Calamo.

Apparently the proposal to revise the existing scale of architects' charges has little interest for members of the Royal Institute. Those who object to the scheme seem too languid to attend at 9, Conduit-street to express their opinions, and the advocates for the suggested changes in the rate of remuneration are still more indifferent. A specially-convened special general meeting called for July 7 failed, as we reported at the time, for want of the quorum required under By-law 67—viz., "at least forty members, of whom at least twenty-one must be Fellows." An adjourned meeting was convened for November 24, and was duly advertised by papers sent to each member, and in the Lists of Meetings of our own and other professional papers. The Institute Journal states: "The chair was taken at eight o'clock by Mr. Ernest Newton, A.R.A., Vice-President; but only seventeen Fellows and sixteen Associates having assembled by 8.30, the business could not proceed, and the chairman, after an expression of regret to those attending for the useless trouble to which they had been put, declared the meeting void, and left the chair." The Council have decided to bring the subject forward again at the business meeting to be held on January 12.

We confess, in spite of Mr. Reginald Blomfield's sub-acid reply in the *Times* of Wednesday to the protest in Monday's issue of that journal against the removal of the embellishments of the old Ceramic Gallery at the Victoria and Albert Museum, in which it is now proposed to house works of art of the period of Louis XIV. and Louis XV., we are inclined to hope that the remonstrance of the 120 leading artists, architects, and amateurs, including Lord Redesdale, Lord Crawford, Sir T. Graham Jackson, Sir George Frampton, Sir Thomas Brock, Mr. John Sargent, Sir William Richmond, Sir Hubert Herkomer, and Sir Aston Webb, may receive some attention. If we are to clear out the embellishments of every gallery at South Kensington each time the objects on view therein are changed, at the will of successive committees, whose opinions in regard to "incongruity" may not always be as infallible as Mr. Blomfield evidently thinks his own and those of Professor Image and Professor Moira are, it will doubtless please the lovers of variety. But we shall certainly lose, from time to time, other very good things besides "the glories of Middle Victorian pottery," at which Mr. Blomfield sniffs, but which were really good work of some of the best men of the time. The mere man-in-the-street, if he dares to differ from the edicts of a South Kensington conclave, may possibly wonder whether a little forethought might not rehouse or rearrange the treasures of the museum without rebuilding or redecorating a gallery every time—especially when the room itself is no mean specimen of the art of its period.

"It seems irrational and absurd, but the language is too strong." Thus spoke the Master of the Rolls in giving the judgment of the Court of Appeal (*Times*, December 9) reversing, with regret, the decision of Mr. Justice Scrutton, who had arrived at an opposite conclusion when trying to construe this same language by the light of common sense and equity. It all arose from the rare and courageous action of a lady taken to obtain a fair assessment of the "substituted site value" of two houses at Hove which were mortgaged in 1898 for £800, and were therefore, she argued, now worth £1,200. If this latter figure were taken as the starting-point, the substituted site value came out at £273. But the Commissioners would not adopt this view, and made the value £190, which would leave a nice margin for increment-value duty upon any sale. The problem had to be worked out upon the words of the special clause relating to mortgages, and which the Court stated set up a new variety of valuation. The Master of the Rolls, in his judgment, mentioned "imaginary value," "fictitious price," and "illusory" as suitable expressions for part of this chaotic statute. He also said there was no pretence for ascertaining, however roughly, the real value at the time of the mortgage. The changes on many and various technical values are rung all through the Act. But the Court of Appeal had in the end to admit that the "irrational and absurd language" of this "great Budget" was too strong for them to do justice as they said it should be done, and so the Revenue wins.

We are glad to see that the Hendon District Council has successfully upheld, in the Court of Appeal, the decision of the Railway and Canal Commissioners against the Postmaster-General, who wanted to spoil three of the roads within the council's jurisdiction by erecting his wires and poles there. We are not much concerned with the technical points the council raised before the County-court Judge and the Railway Commissioners; but the Court of Appeal on Monday sustained them and held that they were valid. The Postmaster-General, therefore, will have to take his disfiguring poles and wires elsewhere, or carry them underground; and we hope that every local authority will be as fortunate as Hendon, Birmingham, and other authorities which have successfully fought against the disfigurement of their roads.

At Oldham last Saturday, Mr. Asquith said, in his own opinion, the time had come for a complete re-examination of the income-tax, alike of the system of exemption, abatement, and graduation, which had grown up in a most haphazard fashion, and might well be replaced by provisions which should make the tax wider and more equitable in its incidence and more productive in its yield. Such provisions would certainly receive the cordial consideration of men of all shades of politics, for no tax is more unjustly or more harassingly levied. A really bold and skilful finance minister would immortalise his name if he matured and passed such a reform. But Mr. Asquith must know that no one has any real confidence in Mr. Lloyd George's financial ability, the results of which have been so disastrous. It would seem, therefore, that either Mr. Lloyd George will not be Chancellor of the Exchequer in the next Liberal Ministry, or that Mr. Asquith is merely doing a little bit more window dressing in preparation for the General Election.

Mr. John Burns's letters to the Somerset County Council on Rural Housing are, on the other hand, the most complete testimony yet borne to the paralysing effect of Mr. Lloyd George's land-bursting campaign on the endeavours of local authorities to grapple with the passing problem, and on the other, the most autocratic attempt to override the future action of Parliament, we have yet seen. For four years Mr. Lloyd George has crippled the building trades, and discouraged the County Councils from starting house-building schemes. He laughs at the plight of our own industries, and sneers at the local authorities. His own panacea is—legislation in the next Parliament—that is to say, not till 1916! Mr. Burns, notwithstanding his own dictum that the remedy for the lack of houses is higher wages, is at last obliged to face the fact that stagnation has lost us four years, and will last three more. He, too, at last has to swell the hallelujahs of Mr. Lloyd George. But he is far too shrewd to believe in it all, and he pitches a characteristic note of his own. "Build on," says Mr. Burns to the local authorities, and "*when* the necessary powers to enable it to provide cottages in rural areas have been obtained," the State will take over the cottages. "Go ahead," hints Mr. Burns, "Lloyd George and his ideas may or may not come to anything, but I am still the Local Government Board, and shall be; and it will take good care Parliament shall bear you harmless and leave me to look after you!"

Sir Daniel Burnett has made another appeal for £30,000, which it seems is still needed to complete the purchasing of the Crystal Palace. He states that he has a promise of £10,000, if the rest is speedily subscribed. The deficiency is due to the reluctance of several of the Metropolitan Borough Councils to subscribe the amounts asked for. At that reluctance, as we have said before, we are not surprised. The policy outlined in the general scheme for the management of the Palace of creating a mortgage on the ground-rents of the estate, it seems to us is not unlikely to prejudice the future rights of the public in the Palace and the Park, and it is small wonder that the contiguous boroughs are of that opinion. No one can feel otherwise than grateful for the time and labour Sir David Burnett has devoted to the project of saving the Palace; but there are certainly not a few people who are not so assured as the rest that caution is unnecessary if in the end, after all, is not to be failure.

Mr. W. R. M. Lamb, who has been appointed secretary to the Royal Academy, is the lucky one out of an amazing number of men who applied for this post. He is a Fellow of Trinity and a classical scholar of some distinction. He is the son of Professor Horace Lamb, of Manchester, and the brother of Mr. Henry Lamb, the artist who has been associated more or less with the anti-Academic movement in English art, so the new secretary, at any rate, will be more in touch with outside opinion as regards the doings of the Royal Academy than Sir Frederick Eaton was. Whether that will make any difference at Burlington House remains to be seen.

It is possible that there is one other book that is oftener referred to than "Who's Who," and that is the Telephone Directory. But it is certain more of our time is wasted nowadays in connection with the latter than on most books; and seldom or ever is the complete satisfaction experienced which always follows recourse to "Who's Who," the edition for 1914 of which reaches us from Messrs. Adam and Charles Black, Soho-square, W., price 15s. The first is a book all

must have; and none of us like the word; the second is the book of all others of its kind we *will* have, whichever else is done without. The mere reminder of its issue will be sufficient for every purchaser in the past; and if any belated reader has not yet bought it, let him take our word for it that he never laid in such a supply of such absorbing reading matter at twenty times the cost. Of equal value to all whom they concern are "The Englishwoman's Year Book and Directory," issued at half a crown; "The Writers' and Artists' Year Book," 1s.; and the "Who's Who Year Book," 1s. With these four volumes on one's shelves one is again ready for every questioner. Without them, one shudders at the thought of the time and labour that would be wasted in futile search elsewhere.

The Bakewell Rural District Council have appointed Mr T W Mawer, of Gainsborough, highway surveyor for the southern division of their district

The Hemel Hempstead Rural District Council have instructed their surveyor, Mr. T H. Lightbody, M.S.A., to prepare a housing scheme of 34 cottages and road works at King's Langley.

Mr. Peter Wordie, of Millersneuk, Lenzie, Lanark, head of the firm of Messrs. Wordie and Co., railway contractors, Glasgow, who died on June 27, left personal property of the value of £137,017.

The corporation of East Ham are seeking from the Local Government Board sanction to borrow £1,992 for widening and improving Station-road, Manor Park, and £1,188 for duplication and paving the tramway track in that thoroughfare.

The town council of Southport have decided to increase the salary of the borough engineer, Mr. John Bond, from £650 to £800 a year. It was stated he had received an offer of double his present salary from the corporation of a Yorkshire town.

The Territorial Service Club at the Duke of York's Headquarter's, Chelsea, was opened on Wednesday by Prince Arthur of Connaught. The building accommodates twelve different units, representing in actual strength 4,082 officers and men.

Mr. Lloyd George has expressed his willingness to receive a deputation of North Welsh quarry-owners and others interested in the slate and building trade, to consider the effect on the slate trade of the increased duty. If possible, the Chancellor of the Exchequer will receive the deputation at Festiniog.

The administrative committee of the Middlesex Memorial to King Edward VII., in their first annual report, announce that the bust of the late King for the new Middlesex Guildhall has been completed by Mr. P. Bryant Baker, and will be unveiled by Prince Arthur of Connaught on the occasion of the opening of the building on the 19th inst.

Mr. R. H. Bicknell, an inspector of the Local Government Board, held an inquiry at the council-house, Birmingham, on Monday, into an application by the city council for approval of the appropriation of a piece of land situated at the junction of Corporation-street and Potter-street, as a site for new weights and measures offices. The council also desired the sanction of the Board to the borrowing of £3,563 for the erection of the building.

The Liverpool Housing Committee have instructed the city surveyor and medical officer of health to prepare a report on the tenure of certain property at the South-end, with a view to the subsequent formulation of a scheme of housing and open spaces. The property in question comprises two blocks bounded by Pitt-street, Gilbert-street, Kent-street, and Greetham-street, and a third between Gilbert-street and Kent-square.

The Bishop of Winchester has dedicated new choir-stalls and pulpit at St. Mark's Church, Woolston, Southampton. The stalls and pulpit are of oak, and 15th Century in style. The choir fronts are panelled, traceried, and moulded. The pulpit is octagonal in plan. The cornice is enriched with foliated carvings, and the panels below are sunk and traceried. The additions are from the designs of Mr. B. D. Cancellor, architect, of Winchester, and have been executed in the studios of Messrs. Harry Hems and Sons, of Exeter.

PROFESSIONAL AND TRADE SOCIETIES.

THE CITY GUILDHALL. A lecture illustrated by lantern views was given on Saturday night by Mr. Charles Welch at the Jewish Institute, Whitechapel. The Guildhall dated back only to the close of the reign of Henry IV., but long before this period, however, the civil government of the City was centred in or near the site of the present structure. The executors of Sir Richard Whittington established a library at the Guildhall, one of the first libraries set up in this country for the free use of the public. Unfortunately the Protector, the Duke of Somerset, borrowed the books and never returned them. In order to build his famous Somerset House, in the Strand, the Protector pulled down the Guildhall library and other beautiful buildings. The crypts at the Guildhall, which escaped the Great Fire, were unique examples of their kind. The stones forming the crypt of Gerrard's Hall in Basing-lane had been transferred to the Crystal Palace, where they were later used in making the prehistoric animals which now adorn the lake at Sydenham. The well-known figures of Gog and Magog were carved by Captain Richard Saunders in 1708, and replaced two wicker giants previously carried in the Lord Mayor's processions.

THE DEVELOPMENT OF THE ENGLISH HOUSE.—Mr. Lawrence Weaver, F.S.A., delivered a lecture on "The Development of the English House" at the College of Art, Edinburgh, on Friday night. Mr. Weaver emphasised the marked difference between the type of the English and and Scottish dwelling. Whereas the Scottish house continued until the middle of the 17th century as a development of the defensive tower, the English dwelling-house, from the earliest times, grew from the germ of the hall. In Scotland the house developed vertically, and in England horizontally. Mr. Weaver showed certain tower houses of England, such as Oxburgh, which approximated to the Scottish type, but they were not to be regarded as typical. He sketched the general expansion in English house-plan consequent upon a growing standard of comfort throughout the reigns of the Tudors, and laid great stress upon the effect of material on the development of local types of design. About half the series of lantern slides was devoted, however, to the more strictly Classical house, of which the first was Raynham, Norfolk, designed by Inigo Jones, and the lecturer sketched the growth of Classical motives as they were developed by John Webb, Wren, Hawksmoor, Sir John Vanbrugh, Colin Campbell, Carr, and the brothers Adam. A vote of thanks was accorded to the lecturer, on the motion of Mr. Washington Browne, R.S.A.

LIVERPOOL ARCHITECTURAL SOCIETY.—At the meeting on Monday evening of this society at the rooms, 13, Harrington-street, Mr. Lionel B. Budden, of the Liverpool University School of Architecture, read a paper on "Originality in Classical Architecture." By means of a closely-reasoned address and a rapid passage of many slides through the lantern, he traced what he described as the "grammar of architecture" through the earliest Grecian and Roman to the latest English and American examples. He defined as originality the doing excellently of what before had been done but fairly well. In opening a discussion on the paper, Professor Bosanquet suggested that the Classical portico and the colonnade might be adapted to the needs of a severe climate, and thus form a comfortable intermediate stage between the open air and the interior of churches, courts, libraries, and theatres. The ornamentation, he thought, might discard the now meaningless wreaths, and embrace, in a port, refined forms of lifebuoys and steering wheels, while he would like to see, also, the introduction of ships. Mr. W. E. Willink considered the Liverpool School of Architecture not sufficiently catholic. The school could not teach what it did not believe in, and, therefore, it did not teach Gothic architecture, but he predicted that the Gothic style would have its day again. Professor C. H. Reilly joined in a plea for a still more liberal equipment of the school library, so as to compare with American architectural school equipments. Professor Stanley D. Adshead deprecated too much attention to climatic conditions, which should be subordinated. He stood for character in architecture rather than what was called beauty. The President (Mr. Hastwell Grayson) expressed his sense of the debt which the society owed to the School of Architecture. The University had been taking of late a much larger part in the life of Liverpool, but he had not realised how much until that evening. He hoped that the lord mayor's advocacy of a largely-increased expenditure on books at the University would be made practicable, and that the School of Architecture would benefit according to its considerable requirements. Mr. Naseby Adams said the paper would tend to lift architecture above the sordid considerations which were wont to prevail. In reply to an enthusiastic vote of thanks, the lecturer argued that there could be no fear of architects becoming too academic. As to the Gothic style, he believed there was in the Renaissance a complete case against its revival.

THE IONIC ORDER IN ASIA MINOR.—In his lecture at the British Museum on Monday, Mr. Banister F. Fletcher described the Ionic Order, with special reference to its Colonial use in Ephesus and other cities of Asia Minor. He traced the probable influence of Egypt in the curled Ionic capital, which was now placed over the echinus moulding, and pointed out that a base was added to give an appearance of stability to this lighter and more graceful Order, which, invented in the 6th or 7th centuries B.C., holds its own to-day, and may be seen in the British Museum portico, in the church of St. Pancras, and in the columns at Hyde Park Corner. Mr. Fletcher examined the delicate, gem-like temple of Niké Apteros, perched on a bastion of the Acropolis rock, and the Erechtheion, a triple temple on the site of the old city memorials of Athens. Then there was the vast temple of Apollo Didymaeus at Miletus, with its mysterious avenue of seated figures, and, greatest of all, the Temple of Diana of the Ephesians, one of five successive temples on the same site. The dramatic incident in the Acts of the Apostles occurred after these Greek Colonies had passed under the rule of Rome, and when St. Paul had broken the power of the worship of Artemis. The grand architectural fragments of the temple formed together one of the last living pictures of the Pagan world.

THE ROYAL TECHNICAL COLLEGE ARCHITECTURAL CRAFTSMEN'S SOCIETY.—At the fortnightly meeting of this society, held in the society's room in the Technical College, on Friday evening, Dec. 5, Mr. Thomas G. Gilmour, A.R.I.B.A., president, in the chair, Professor Charles Gourlay, B.Sc., A.R.I.B.A., delivered a lecture, illustrated by lantern slides, on "The Great Church of Santa Sophia, Constantinople." He referred to the interesting fact that this church, the greatest monument of the Byzantine style of architecture, was erected within the area comprised in the site of the ancient town of Byzantium, whence the style derived its name. The professor then showed illustrations of plans and interiors of Greek, Roman, Early Christian, and previously-erected Byzantine buildings, to allow of a true appreciation of the great advance made by the magnificently-conceived plan of Santa Sophia, with its beautiful interior, upon those of any other building then in existence. Because of its size, the church was known as "The Great Church," and it was erected for the Emperor Justinian by the architects Anthemius of Tralles and Isidorus of Miletus, between the years 532 and 537, when the Byzantine style was at its culmination; hence its composition and details are of the choicest design and execution. The plan of the church was fully studied, including its nave, aisles, narthexes, and gallery; then followed views of the exterior and interior, and also of details, which were all fully described.

COMPETITIONS.

BOARD OF TRADE NEW OFFICES.—The Commissioners of Works desire us to announce that they have appointed Mr. Ernest Newton, A.R.A., to be one of the assessors in the competition of architects for the new public offices (Board of Trade, etc.), in the place of the late Mr. John Belcher, R.A.

COVENTRY.—The R.I.B.A. advise us that the Competitions Committee are in correspondence with the promoters of the competition for a technical institute at Coventry, and that meanwhile Members and Licentiates are requested to abstain from competing.

DONCASTER.—In the competition recently held for the Morley-road U.M. Church and Schools, Doncaster, the designs submitted by Messrs. George Baines and Son, 5, Clement's Inn, Strand, London, were placed first. The portion of the scheme to be erected at present is estimated to cost about £4,500.

GLAKE HALL.—Members of the Society of Architects are advised that the conditions of the Residential School Competition, Glake Hall, are at present unsatisfactory in certain respects, and that they should not take any part therein under the present conditions. A similar notice reaches us from the R.I.B.A.

KING EDWARD VII. MEMORIAL, NORTH WALES SANATORIUM.—Competitors who have submitted designs may do well to respond to an advertisement which appears this week in the usual column.

LONDON HOSPITAL ESSAY PRIZE.—The College Board of the London Hospital offer a prize of the value of £120 for the best essay on "The Ventilation of Schools and Public Institutions." The essay, set under the will of the late Dr. John Liddle, is to be typewritten or printed, in English, and delivered at the London Hospital not later than May 31, 1914. The number and importance of original observations will be considered principal points of excellence. Full particulars may be obtained from the Dean, the London Hospital Medical College, Mile End, E.

MOTOR EXHIBITION POSTER.—A prize of 100 guineas is being offered by the Society of Motor Manufacturers and Traders, of Maxwell House, Arundel-street, W.C., for a sketch suitable for a poster, for the purpose of advertising the Olympia Motor Exhibition.

MURAL PAINTINGS IN SCHOOLS.—The Mural Decoration Committee, recently formed with the object of promoting the decorating of schools and other public buildings, held a competition for designs to cover a wall in the hall of the London County Council Commercial-street Schools, Whitechapel. The successful competitor was Miss L. R. Jacobs, a student of the Royal College of Arts, whose painting represents the granting of the Commune to the citizens of London by Prince John in 1191. Mr. Cyril Cobb (Chairman of the London County Council) unveiled the painting on Wednesday. Mr. C. Aitkin (Keeper of the National Gallery of British Art) and Mr. W. Walter (joint secretary with Mr. Aitkin of the committee) spoke of the great educational value of mural paintings.

A new restaurant in Pilgrim-street, Newcastle-on-Tyne, was opened last week. The architect is Mr. Arthur Stockwell, M.S.A., and the contractor Mr. George Douglas.

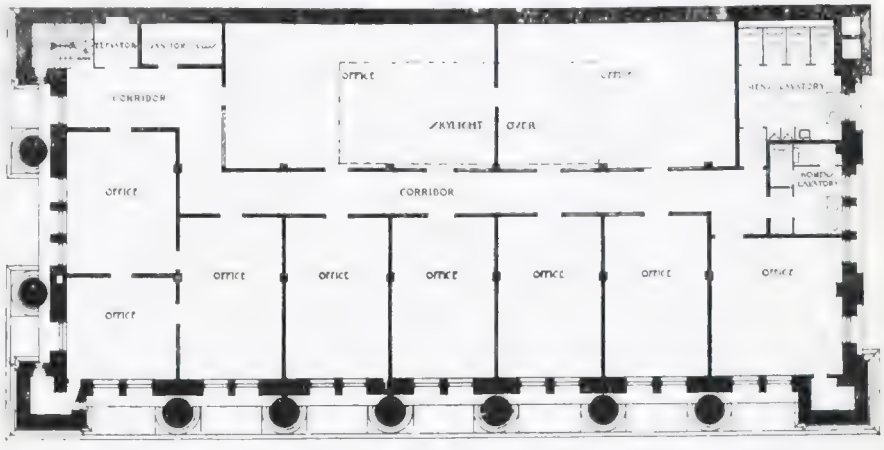
The Fitzwilliam Museum Syndicate, of Cambridge University, have appointed Mr. F. H. Marshall of Emmanuel College, as Honorary Keeper of the Greek and Roman Antiquities.

Sir Alfred Cripps, Chancellor of the Diocese of York, held a Consistory-court at Doncaster on Saturday, to hear an application by the rector and churchwardens of Sprotborough for a faculty to carry out the restoration of the fine parish church. A memorial against the scheme was presented by 28 parishioners, who said they did not object to necessary repairs, but wished to retain the quaint character of the church, which was one of the most interesting in South Yorkshire. The Chancellor said he would take time to consider his decision.

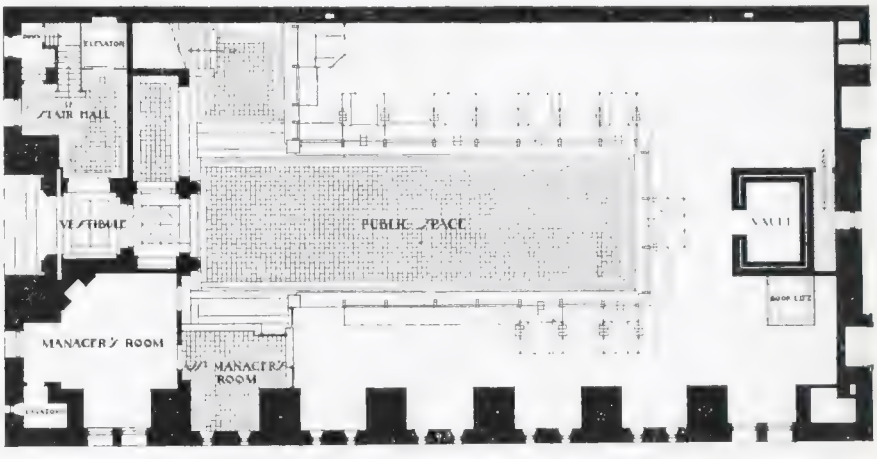
Our Illustrations.

THE CANADIAN BANK OF COMMERCE, VANCOUVER, B.C.

This fine commercial building, of which we give a view with plans to-day, has been erected in granite in a handsome scale of the Ionic Order, boldly handled, the site being set at the corner of two main thoroughfares in the best part of Vancouver. The great Banking Hall makes the chief feature, of course, on the ground floor. The staircase hall to offices above flanks the main entrance, the manager's room corresponding in position on the other side of the portal. The drawing reproduced was hung on the line at the Royal Academy last summer. Messrs. Frank Darling and John A. Pearson, of Toronto, are the architects.



SECOND FLOOR PLAN



BANKING ROOM FLOOR PLAN

THE CANADIAN BANK OF COMMERCE, VANCOUVER, B.C.

MESSRS. FRANK DARLING and JOHN A. PEARSON, Toronto, Architects.

PORTUGUESE ARCHITECTURE.

(Photographs illustrating lecture by Mr. W. H. Ward, M.A., Cantab.)

We report Mr. Ward's interesting lecture, printed on page 822, delivered on Monday last before the Architectural Association on this subject, and the accompanying views were chosen by him specially to illustrate his subject. The plans given with the text of Batalha and of the Abbey Church of Alcobaca are lent us by Mr. W. Crum Watson, from his standard work on "Portuguese Architecture," published by Messrs. Constable. We reviewed this book in the BUILDING NEWS for May 15, 1908, when a plan appeared of O Mosteiro dos Jeronimos de Sta Maria de Belem, also views of Capellas Imperfeitas and the entrance to the same church at Batalha.

STREATHAM CAR-SHED EXTENSION.

This building is situated in the Streatham High-road, opposite Telford-avenue, and forms an adjunct to the car-shed previously erected on the site of the old cable station. The new building contains accommodation for forty-nine double-truck cars, etc., of the standard type, and has continuous longitudinal inspection-pits leading to a traverser for moving the cars from track to track. The whole of the walls are built of stock bricks, portions of the elevation to Streatham Hill being faced with "Crowboroughs" and Portland-stone dressings. The roofs are covered with Bangor slating, and the floors with granolithic paving. Considerable care had to be exercised in the construction of the foundations, owing to the proximity of the Metropolitan Water Board's reservoir, which adjoins the east end of the site. The building was designed by Mr. W. E. Riley, F.R.I.B.A., the Superintending Architect to the London County Council.

CHURCH OF ST. JOHN THE DIVINE, NOTTINGHAM.

This water-colour drawing was exhibited at the Royal Academy last summer by Mr. Charles Gascoyne, of Gray's Inn. Professor E. S. Prior, M.A., was the assessor in the limited competition which was recently held, when Mr. W. Curtis Green, F.R.I.B.A., was appointed the architect.

A CLASSICAL TOWN HOUSE OVERLOOKING A PUBLIC PARK AT THE REAR.

(For the assessor's award in this BUILDING NEWS Designing Club competition, see pages 826-7.)

In the New Year an exhibition will be held at the Whitworth Institute, Manchester, of original drawings, engravings, and other reproductions, books, etc., of William Blake, and already promises have been received of most of the important works now at the Tate Gallery show.

B A N

CLASSICAL TOWNHOUSE

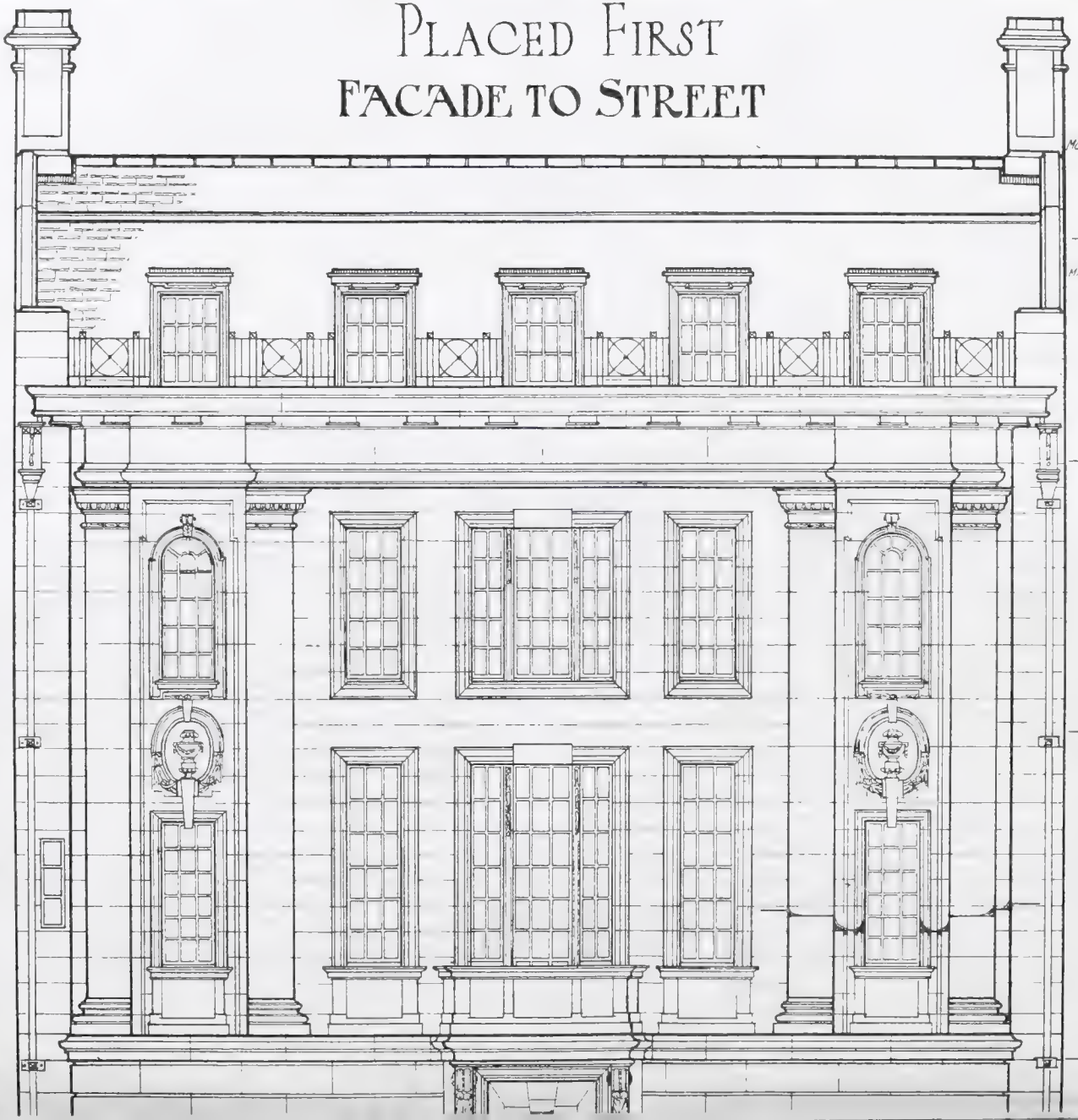
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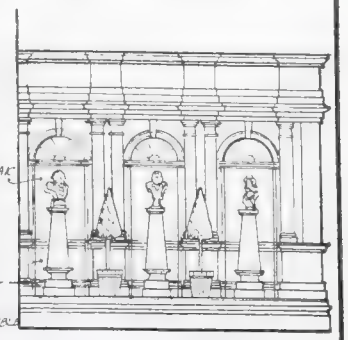
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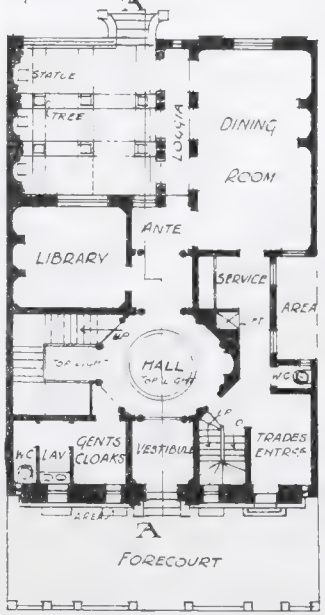
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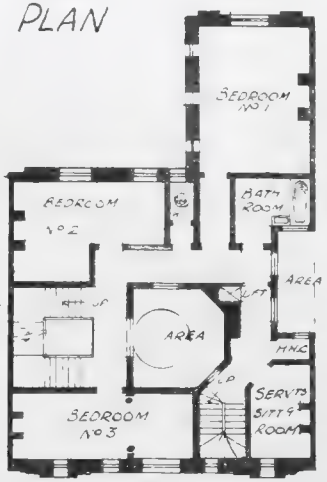


ELEVATION OF FLANK WALL

GROUND PLAN



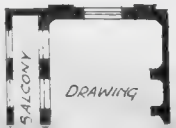
SECOND FLOOR PLAN

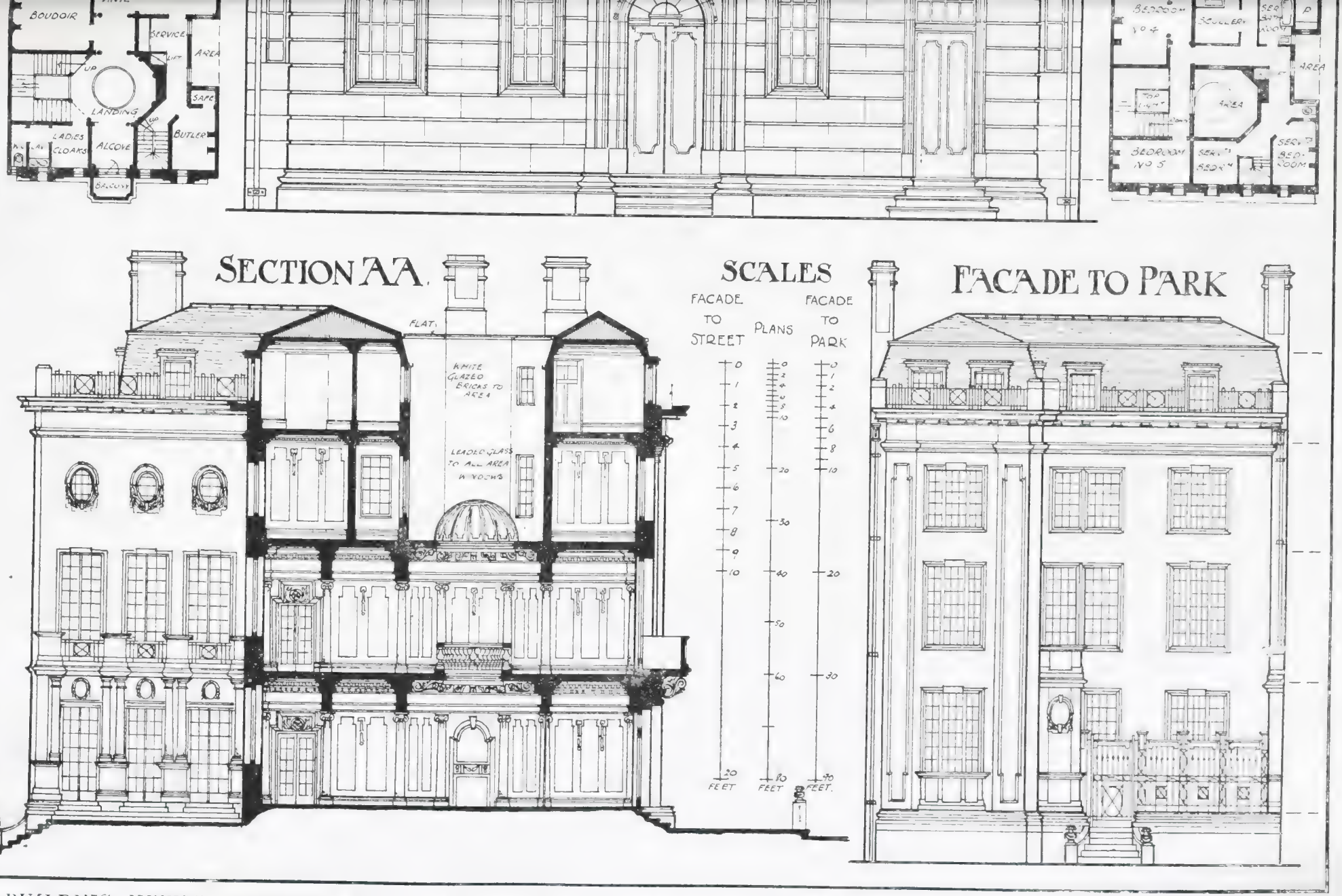


KITCHEN FLOOR PLAN



FIRST FLOOR PLAN





"BUILDING NEWS" DESIGNING CLUB: A CLASSICAL TOWN HOUSE, OVERLOOKING A PUBLIC PARK AT THE REAR.

Building Intelligence.

GALASHIELS.—At a meeting of Galashiels Town Council last Monday night, the works committee reported in connection with the communication from the Secretary for Scotland relative to the accommodation for the police at the Burgh Buildings. They were of opinion that as alterations on the buildings would be necessary in order to provide proper accommodation for the police, advantage should be taken to so reconstruct the buildings as also to provide additional and better accommodation for the council and for the officials, as well as to improve the elevation towards the Corn Mill-square. The burgh surveyor was asked to develop a plan which he outlined showing how the existing buildings, including the new vacant ground on the west side, could be utilised. While thus engaged a local gentleman offered to obtain a sketch free of charge to the council from the architect who laid out the Corn Mill-square. This offer the committee accepted, and a sketch-plan had been prepared by Sir Robert Lorimer at a probable cost of £7,000. The committee considered that this sum could be modified, and they were inclined to believe that were a suitable plan forthcoming contributions might be offered, so as not to place the whole cost upon the rates. A letter was submitted from Mr. John Hall, architect, requesting that, if plans for new buildings were prepared, he might have an opportunity of submitting designs, seeing that he had submitted designs when the question was before the council ten years ago. In view of this letter, it was decided to delay consideration of Sir Robert Lorimer's plans for another month to enable Mr. Hall's designs to be also considered.

NEW COUNTY OFFICES, CHELMSFORD.—On Friday last a meeting of the Essex Standing Joint Committee was held at the Shire Hall, when the sub-committee appointed to consider a request from the County Council for a report upon additional office accommodation at Chelmsford, reported that they had submitted plans for the proposed new county offices to Sir Aston Webb, R.A., also adding that the committee had adopted practically all his suggestions. They now submitted plans and elevations as finally settled and approved by them. The sub-committee were satisfied that the whole of the accommodation shown in the plans was necessary to meet the requirements of the county staff, and such additional requirements as must be expected in the future, and were also satisfied that while the proposed buildings were in no way extravagant, they would be worthy of the county. It was estimated that the cost of erecting the proposed buildings would be approximately £46,000. The design for this scheme was prepared by the county architect, Mr. F. Whitmore, of Duke-street, Chelmsford. The drawings of this so far approved design will go before the County Council in January for confirmation. Last week it was reported that a competition had been held, but this is entirely incorrect. Sir Aston Webb, R.A., having been engaged in advising the sub-committee as to the suitability of Mr. Whitmore's design and general provisions of his plans, with the result that he has given a very favourable report after the suggestions above alluded to were incorporated for the proposed undertaking.

Mr. J. F. Northcote, surveyor of Rothwell, has been appointed by the urban district council of Heshaw [illegible] sanitary inspector and [illegible]

Mr. C. A. Mellon, of Rome, who is the engineer of the scheme for draining the lowest of the three crutches supporting the building of San Clemente, in Rome, that the present position of the [illegible] was begun in June, 1912, and [illegible] the cost of the American Cardinal Council [illegible] It is now possible to enter the room near the Oratory of San Clemente [illegible] the floor is uneven and slopes down towards the centre there are about 20in. of water in the middle. Boards have been laid down to enable visitors to look into the door of the Mithræum, which since 1870 has been waterlogged.

LEGAL INTELLIGENCE.

WHAT IS A PUBLIC HIGHWAY?—Rowle v. Tottenham Urban District Council.—A case illustrative of the manner in which a person may be unconsciously dedicating his property to the public was decided by Lords Dunedin, Atkinson, Parker, and Sumner in the House of Lords on Friday. The matter came before their lordships in an appeal by Mr. Rowley, a builder, from the decisions of the Courts below, whereby it was held that by the laying out, kerbing, and channelling a certain Keston-road on a building estate he had purchased at Tottenham, and allowing it to be used by the public, he had dedicated it to the public as a highway. The action was commenced by the Tottenham Urban District Council, who claimed damages for obstruction. Mr. Justice Joyce held, when the case came up in the King's Bench Division, that the uninterrupted use of the road by the public was sufficient to justify the inference of an intention on the part of the appellant to dedicate the road throughout its whole width to the public as a highway, and, therefore, that the respondents were entitled to succeed. This decision was affirmed in July, 1912, by the Court of Appeal (the Master of the Rolls, Lord Justice Farwell, and Lord Justice Kennedy). Mr. Younger, K.C., and Mr. Joshua Scholefield appeared for the appellant; and Mr. Macmorran, K.C., and Mr. Cartwright Sharp for the respondents. Without calling upon the respondents' counsel, this order of the Court of Appeal was unanimously affirmed, Lord Dunedin observing in the course of his judgment that the question raised by the appeal was a pure question of fact, as to which four judges had already come to the same conclusion. The appeal was therefore dismissed.

KINGSWAY ASSESSMENT APPEAL.—Mr. John Oakley, arbitrator, heard at the Surveyors' Institution on Tuesday an appeal by Mr. Lyon, lessee of 112 and 112a, High Holborn, against the increase of £4,400 in the assessment of his premises by reason of the Kingsway improvement. It was stated that three other occupiers of premises had withdrawn their appeals. Mr. Morton appeared for the London County Council, and Mr. Dalby for the lessee. Mr. Dalby submitted that the County Council must show that there was a substantial rise in value consequent upon the new thoroughfare. He contended that that new street had not improved his client's property. The original site value was £10,800, including the additional strip, and this proposed increase of £4,400 was nearly 40 per cent. It was argued that the building of the modern blocks in Kingsway had injured the letting capacity of buildings in Holborn, as people much preferred offices in the fine new street. In support of the assessment evidence was given that the Kingsway improvement had greatly enhanced the value of property in Holborn. The arbitrator reserved his decision.

LANDLORD'S LIABILITY.—Dobson v. Horsley.—In this action heard by Mr. Justice Ridley and a common jury on Friday in the King's Bench Division, the plaintiff was an infant who had been injured by falling through a gap in area railings, sued through his father as next friend, the father being a tenant of one room in the house where the accident occurred. The negligence alleged was that the area railings were not kept in a proper state of repair, and the plaintiff's father alleged that the attention of the landlord's surveyor was called to the defects in the railings, and that he promised to have them repaired.—The jury returned a verdict that the railings were defective, but announced that they were unable to agree as to what notice was or was not given to defendant. They assessed the damages at £137 15s.—Mr. Justice Ridley treated the case as to notice as not being made out.—For defendant Mr. R. O. Blane contended that there could be no liability on the part of the defendants, either in contract or tort, as the premises were let to the father without any contract to keep them in repair. He cited "Cavalier v. Pope," "Ryall v. Kidwell," "Lane v. Fox," and the cases of "Martin v. Watkinson" and "Huggall v. McKean" proved, he said, that notice was necessary in order to make a defendant liable. He further quoted the actions of "Cameron v. Young," "Harrold v. Watney," "Miller v. Hancock," and "Huggett v. Miers."—Mr. Ashby contended that the plaintiff was entitled to succeed on the authority of "Miller v. Hancock," which was distinguishable from "Cavalier v. Pope. The counsel also referred to "Hargroves, Aronson, and Co. v. Hartopp."—Mr. Justice Ridley, in his judgment, said that it had been established beyond doubt by "Cavalier v. Pope" that in cases where there was a letting between people without any obligation to repair, an action could not be brought in respect of damages accruing to persons owing to the improper condition of the premises except by those who were parties to the agreement. It had been argued on behalf of the plaintiff that there was an exception to this rule, and that "Cavalier v. Pope" did not apply where there was some part of the premises which was kept under the control of the landlord, and in such cases there was an obligation on the part of the landlord for the benefit of all the tenants in the house that he should keep that portion of the premises in good repair; there being that implied obligation, he was answerable, as in the present case, for damages happening to people because he had not fulfilled it. The authority relied on in support of that proposition was "Miller v. Hancock." The decision in "Huggett v. Miers," and the observations by Lord Atkinson in "Cavalier v. Pope," led him to the conclusion that he ought to decide in favour of the defendants. It might be that the Court of Appeal would decide that the case of "Miller v. Hancock" applied to the present case.—A stay of execution was granted on the usual terms.

COUNCILLOR AND SURVEYOR.—At the Leeds Assizes, before Mr. Justice Darling, on Friday, Cecil Gustav Bradley, 34, surveyor to the Goole Urban District Council, pleaded guilty to a charge of common assault upon William Jackson, a member of the council, on October 29, the original charge of unlawfully wounding having been reduced. Mr. Compton said that the trouble arose over a letter which the prosecutor alleged at the council meeting had not been sent. The surveyor had been instructed to write to a Liverpool firm, Messrs. E. F. Blakeley and Co., with reference to a contract for a slaughterhouse. Mr. Jackson, doubting that the letter had been sent, wrote to Messrs. Blakeley, who stated that they had not received the letter—a mistake which the firm at a later date rectified. Mr. Jackson, however, said the letter had not been posted. At the council meeting, Mr. Jackson refused to apologise when the letter-book with a copy of the letter was produced, and therefore prisoner struck him some severe blows on the face. Prosecutor was a man of sixty, and was absolutely helpless. Mr. Mitchell-Innes, in mitigation of the assault, said that the prosecutor, after receiving a reply from Blakeley's—which they subsequently hastened to correct—kept the reply in his pocket some days without telling the surveyor anything about it, and then produced it at the council meeting. Bradley still persisted that his letter had been posted; but the prosecutor remarked: "The surveyor can't bluff me like he has bluffed the council, and he is deceiving you all." The imputations, added counsel, that were involved in the attitude assumed by Jackson were that the surveyor had disobeyed the council in not posting the letter; that he had lied; that he inserted a faked letter in the copy-book; that he suborned his postage clerk to enter in his book that he had posted the letter; and that he had further suborned his postage clerk to say that he had posted it. "I can't conceive," commented counsel, "provocation more overpowering than that." Only one blow was struck. Jackson's conduct was intolerably provocative. His Lordship, in summing up, said that the conduct of Mr. Jackson towards the defendant was absolutely unreasonable, and was calculated to make anyone excessively angry. A charge of dereliction of duty was made against Bradley, and he was quite certain, from the evidence of Mr Bowles that Jackson had used the expression, "What, apologise to that!" when asked to express his regret. Mr. Jackson had done Bradley a wrong, and he ought, as a gentleman, to have apologised. But, instead, he used a very offensive remark. Bradley, of course, had no right to commit the assault. He should have controlled himself, and left the matter to develop, as it would have done, when the discovery was made that he was absolutely right, and Mr. Jackson absolutely wrong. Bradley received very grave provocation, but still he broke the law. Accordingly, he would be fined £10, and be bound over in the sum of £50 to be of good behaviour. His lordship refused to make an order for defendant to pay the costs of the prosecution.

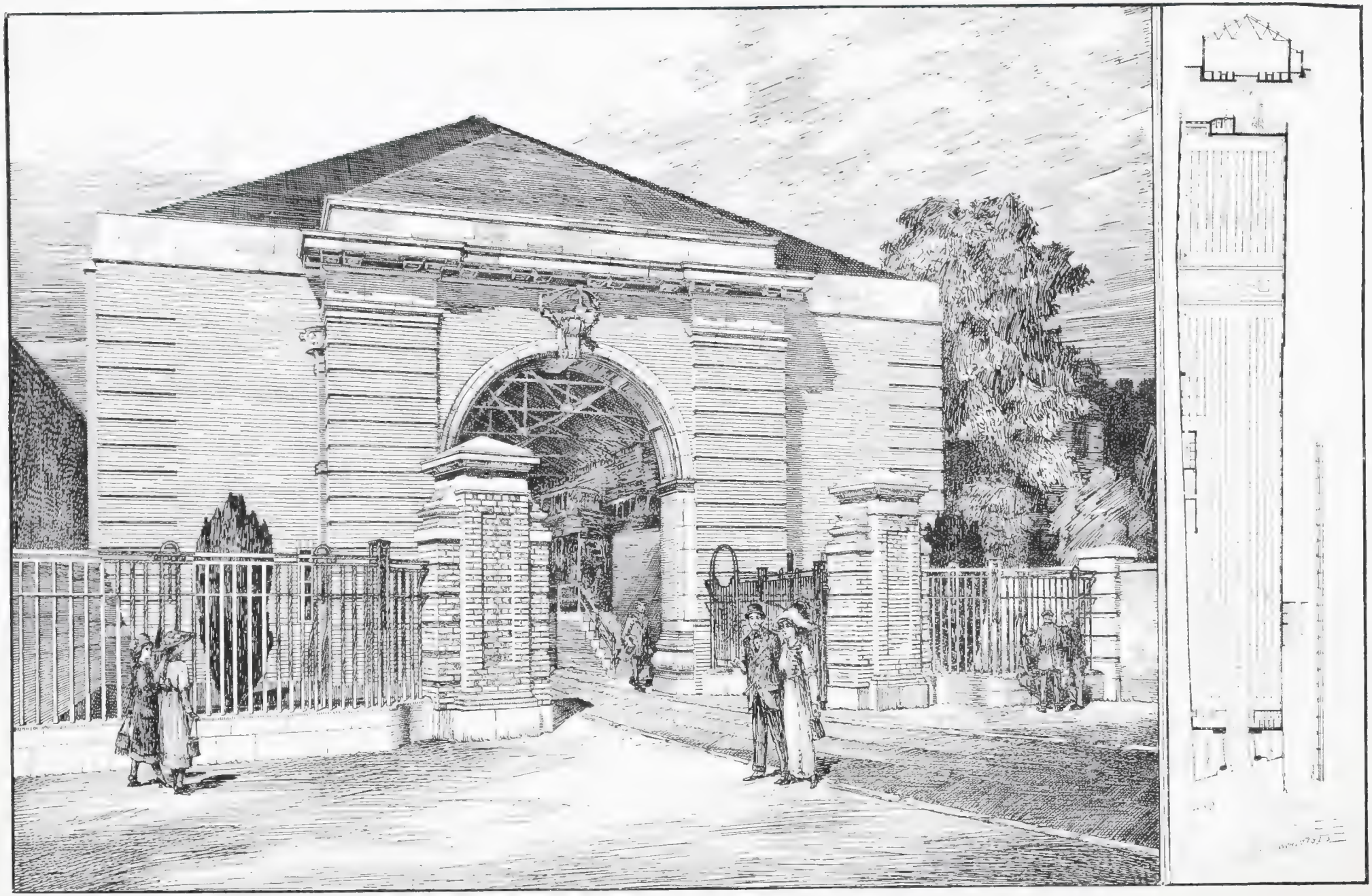
ACTION FOR DIVERSION OF WATER SUPPLY.—In an action which occupied the attention of the Lancashire Chancery Court last week, in which the Blackrod Urban District Council sought to restrain the John Cronkshaw Company, Limited, brick and tile manufacturers and coal-owners, Horwich, from diverting water which they had tapped in a tunnel made for the purposes of the mine, and which would otherwise have gone direct into the plaintiffs' reservoirs, the Vice-Chancellor, Mr. Stewart Smith, K.C., gave judgment on Monday against the district council. He held, in accordance with reported decisions, that the water which had percolated from the surface, and collected in volume behind a "fault" in the mine was not

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CHURCH OF ST. JOHN THE DIVINE, NOTTINGHAM.

Mr. CHARLES GASCOYNE, Architect.



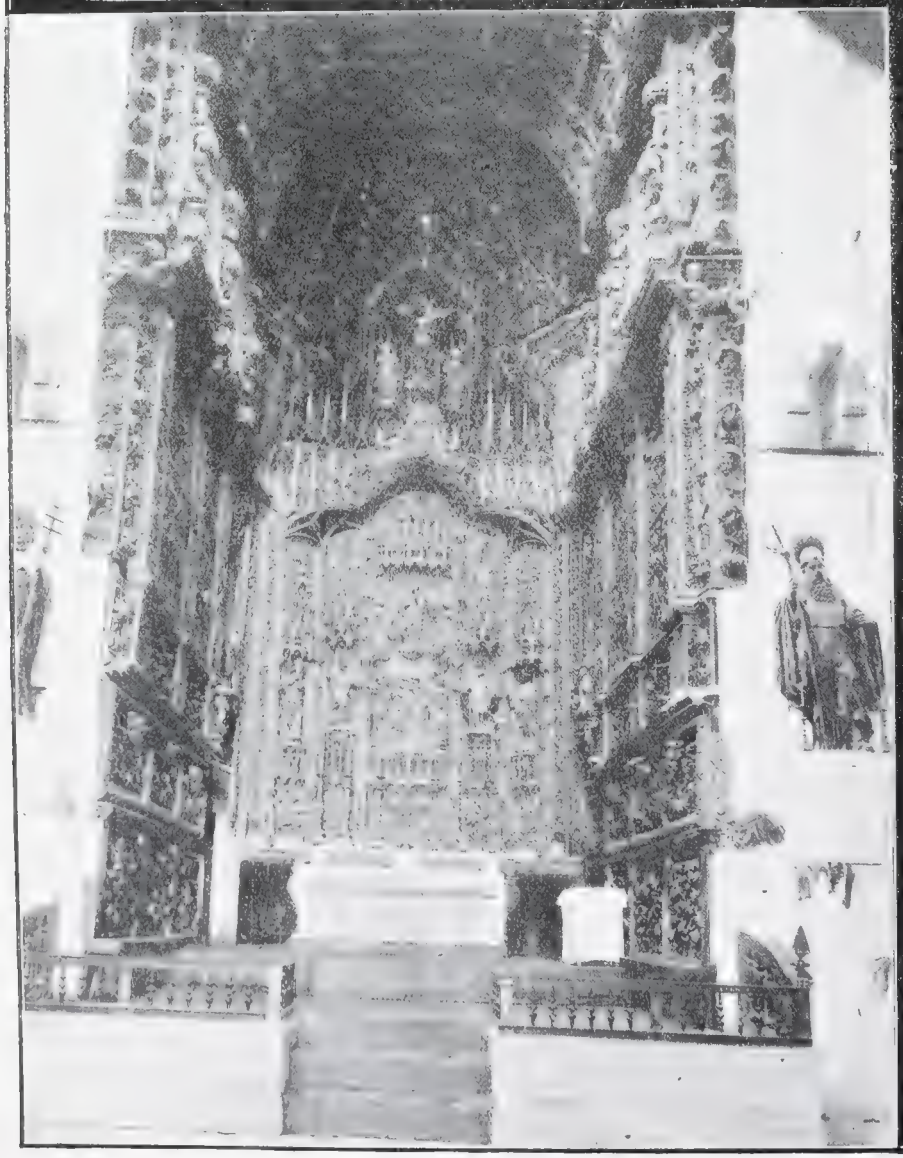
STREATHAM CAR SHED EXTENSION FOR THE LONDON COUNTY COUNCIL: VIEW, SECTION, AND PLAN.

Mr. W. E. Riley, F.R.I.B.A., Superintending Architect.

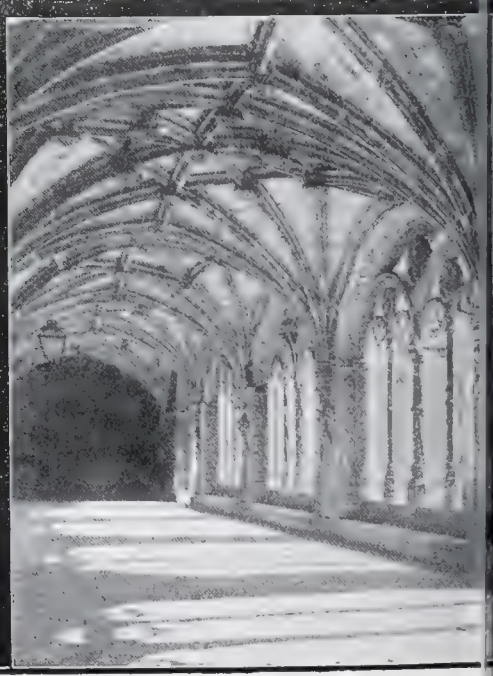












ABBEY CHURCH OF ALCOBACA.
APSE OF THE OLD CATHEDRAL, COIMBRE.

THE OLD PALACE AT CINTRA.
THE CLOISTERS OF THE HI

"PORTUGUESE ARCHITECTURE."—Illustratin











THE OLD CATHEDRAL, COIMBRE.

NYMITE CHURCH, BELEM.

THE ABBEY CHURCH OF BATALHA.

SOUTH PORCH OF THE HIERONYMITE CHURCH, BELEM.

cture by Mr. W. H. WARD, M.A. Cantab., A.R.I.B.A.



THE CANADIAN BANK OF COMMERCE, VA



JVER, B.C.—Messrs. DARLING and PEARSON, Architects.

the property of the plaintiffs under their water rights. The defendants, having got water into their tunnel by operations which they were entitled to perform, could deal with that water as they thought fit, there being no riparian property in the water when collected. Judgment must be recorded for the defendant, costs to follow the event.

CHIPS.

Mr. J. B. Williams, borough surveyor to the Daventry Town Council, has been presented by the officials and members with a silver salver on the occasion of his marriage.

Mr. John Wyatt, of Somerton, has been appointed by the Bridport Rural District Council district surveyor of highways and inspector of nuisances for the whole of their district.

The Local Government Board is being asked by Newquay Urban District Council to sanction a scheme for borrowing £3,753 10s. for the purpose of erecting workmen's dwellings.

Mr. L. R. Fraser, district surveyor, Uganda Protectorate, has been promoted deputy director of surveys in that Protectorate, and Mr. J. G. Strickland has received promotion as a district surveyor.

The United States Congress has appropriated 350,000dol. of the half-million to be spent in the erection in Washington City, D.C., of the memorial building to the women of the North and South.

A new London County Council School for mentally defective children was opened on Wednesday night in Bravington-road, Harrow-road, Paddington. The school is a one-story building, with accommodation for 85 children in four classrooms. The work has cost £3,550.

The Gloucester City Council have settled details of a scheme for the provision of housing accommodation at Northfield-road, Tuffley. The plan adopted comprises the acquisition of land for buildings and allotments, and for the erection of 24 dwelling-houses in six blocks of four each, at an estimated total cost of £6,500. The corporation will let the dwellings at a rent of 3s. and 3s. 6d. a week, according to accommodation.

At the Chester Consistory court last week, the vicar and wardens of St. Stephen's-in-the-Banks, North Meols, applied for permission to take down the present church, and to build in lieu thereof a new and larger church upon the same site. The ornaments and furniture of the present church are to be preserved and placed in the new church. Application adjourned to next court, in order that the accommodation of new church be considered by the bishop.

Concerning Hawkmoor Sanatorium, the public health and housing committee report to Devon County Council that, it being considered undesirable to proceed with the proposal to adapt a portion of the existing farm buildings, draft plans have been submitted to the Local Government Board for the erection of new buildings in four blocks—one for forty males, one for forty females, one for various purposes, and a separate ward for twenty children, at an estimated cost of £18,000.

The general purposes committee of the Brighton Corporation have reported upon the proposed utilisation of the Aquarium site. The scheme involves not only the building of a concert-hall, but the widening of the Marine-parade, and the extension of Madeira-road-terrace westward from its present point to link up with the Aquarium. It is proposed that the concert-hall shall be erected on the eastern half of the Aquarium site, that a portion of the site be retained as an aquarium and biological museum, and that provision be made for baths. The estimated expenditure on new buildings is alone £75,000.

Some years ago the Great Northern Railway Company prolonged its Enfield Branch to Cuffley by a double railway four miles in length. It is now engaged on an extension of this line passing to the westward of Hertford, and having a connection with the existing line in that town, and proceeding from thence to join the main line again at Stevenage, a distance of over 13 miles. The new line is being laid as a full main railway, and with a ruling gradient of 1 in 198. There are two tunnels, one—the Ponsbourne—2,684 yards long, and the other—the Molewood—364 yards long, and two viaducts, the one over the River Lea, and the other over the Minram stream on the Hatfield-Hertfordshire line. The contract for the section between Cuffley and just beyond Hertford is being carried out by Sir Robert McAlpine and Sons, of Glasgow and London, and that between Hertford and Stevenage by Messrs. H. Arnold and Son, of Doncaster.

Our Office Table.

Earl Beauchamp, the First Commissioner of Works, has decided in M. Rodin's favour the question of the site to be allotted to his statuary group, "Les Bourgeois de Calais." The group has been presented to the nation by the National Art Collections Fund, and there was a proposal to place it in the centre of the Victoria Gardens at Westminster. M. Rodin, however, who had been consulted in regard to the site, and who visited London in May last to inspect various suggested positions, was greatly in favour of placing the group in such a position in the Victoria Gardens that the magnificent Gothic work of the Victoria Tower might seem as an immediate background instead of erecting it in a central position in the gardens. The work of erection will be completed by the end of next March, when Earl Beauchamp will perform the unveiling ceremony.

Power is sought in the General Powers Bill to be promoted by the London County Council next session to enable the council to make regulations with regard to celluloid stores, and such regulations may prohibit the use for the purpose of a celluloid store of any part of a building situate beneath rooms in such building used for residential purposes, or of any part of a building not provided with adequate means of ready escape from fire; make subject to the consent of the council the keeping of large quantities of celluloid on premises situate beneath living-rooms or workrooms, and provide for the safety of persons in any building used partly as a celluloid store and partly for other purposes; prescribe precautions to be observed in storing and handling celluloid; make requirements as to the provision of fire-extinguishing appliances; and deal with such other matters as may be deemed expedient with a view to the prevention or diminution of danger to life and property arising from fire or explosion. It is also provided that in the case of any building to which the provisions of the London Building Acts (Amendment) Act, 1905, or of section 14 of the Factory and Workshops Act, 1901, with respect to the provision of means of escape in case of fire apply, any requirement on this subject made under the powers of the Bill shall be made and enforced by the council (to the exclusion of the City Corporation), subject in all respects to the provisions of the Acts of 1905 and 1901.

Under the miscellaneous and financial provisions of the Bill powers are sought to enable the council to appropriate land no longer required for the purpose for which it was acquired, such appropriation being subject, except where otherwise provided by statute, to the consent of the Local Government Board; to empower the council to appropriate the disused tramway depot in Portland-avenue, Stamford Hill, for the purposes of the stores department; to extend, until 1917, the time limited by the L.C.C. General Powers Act, 1909, for the construction of a light railway connecting various parts of the council's Horton Estate at Epsom with the London and South-Western Railway at Ewell; to enable the council when acquiring insanitary property to take advantage of the procedure under the Housing of the Working Classes Act, 1890, whereby the compensation to be paid shall be assessed in accordance with the principles laid down in that Act in acquiring insanitary property, the exercise of the power being confined, however, to cases in which notice has been given to the persons interested before application is made for compulsory powers; to enable the council to charge part of the cost of acquiring insanitary property for the purposes of a new school site as expenditure incurred under the Housing Acts in respect of insanitary areas. In arts. II. and III. authority is sought to enable the council to construct a tramway extension to Farringdon-road from Charles-street to Ludgate-circus, and new tramways from Aldgate to Trinity-square, and from Lee-green to the High-street, Eltham. Authority is also sought to carry out a number of street widenings in connection with proposals for new tramways, and also to effect a widening at Piccadilly. The estimated cost of the proposals in the Bill is £241,350, which exceeds the original estimate by £6,000.

Further discussion occurred at the meeting on Tuesday of the Chelmsford Rural District Council concerning the model cottage built at Great Baddow by Mr. Arnold Mitchell, F.R.I.B.A. A letter was read from Mr. Mitchell explaining that, in view of the decision that his cottage was a building and not a model, he formally asked for approval of the plans, and offering to provide drainage, water supply, and an ash-bin. He suggested that the council should not enforce the by-laws as to the height of rooms and the paved area at the rear. The buildings and works committee reported that they were unable to advise the council to waive the by-law in respect of the paved area, but with regard to the height of the rooms they recommended that the full requirements of the by-laws be not insisted upon.

The collection of Old English Pattern Books of the Metal Trades in the Department of Engraving, Illustration, and Design at the Victoria and Albert Museum, is described and illustrated in a catalogue published this week. These pattern books were issued by manufacturers in metals, in order to advertise their wares, during a period of about 75 years, embracing the last half of the 18th and the first quarter of the 19th centuries. Reproductions in 24 plates are given of designs in ornamental brasswork of various kinds. An historical introduction is supplied by Mr. W. A. Young, by whom the catalogue was compiled. The books themselves are on view in the students' room of the department (No. 71) at any time when the Museum is open, except on Sundays.

Lord Rosebery formally opened on Friday as a municipal museum Lady Stair's House, which, after restoration, he presented to the Corporation of Edinburgh in 1907. The house is situated in Lady Stair's Close, which stretches between the High-street and the Mound. On the lower floor has been assembled an interesting collection of sculptured stones from old Edinburgh buildings of various kinds long since demolished. In the dining-hall a beginning has been made with a costume museum; while on the walls of the other rooms have been placed the Bruce-Home collection of drawings of old Edinburgh houses and engravings and pictures, with views of Edinburgh and its environs.

At the meeting on Friday of the Royal Society, under the presidency of Sir William Crookes, a paper was submitted by Dr. A. P. Laurie, Mr. W. F. P. McLintock, and Mr. F. D. Miles, relating the results of a research undertaken to decide the conditions under which the blue manufactured and used in Egypt from the Fourth Dynasty to Classical times was produced. They confirmed the conclusion reached by Fouqué that the blue was a double silicate consisting principally of calcium and copper, but in which these metals could be partially replaced by alkalies. The pigment was found at the Palace of Cnossus, giving evidence of the relations between Egypt and Crete, and it seemed to have been the universal blue throughout the Roman Empire. Samples of it had been found in Uriconium at Shropshire, and the secret of making it was evidently lost between 200 and 700 A.D.

Professor Flinders Petrie has sent to the Royal Scottish Museum at Edinburgh several choice examples of Egyptian art, excavated by him during the past season at Riggeh, about forty miles south of Cairo. The gift, which is exhibited in case 69 in the Egyptian room, consists of the contents of the grave of a lady who lived about 3500 years ago. There are four objects, all of them belonging to her toilet equipage, and evidently transferred from her bedroom to her tomb. Three of them are in perfect condition—a necklace of 160 gold beads, alternately spherical and flattened, with a central gold plaque, a group of three gold hair-rings, and a kohl-pot. The

fourth object, a bronze mirror, has suffered considerably by incrustration of the metal.

At the Northern Polytechnic Institute, St. John-street, Clerkenwell, the annual prize distribution and students' conversazione was held on Friday evening last. The distribution of awards was made by Mr. Cyril S. Cobb, M.V.O., the Chairman of the London County Council. Demonstrations were arranged in the lecture-rooms and the workshops and laboratories were all on view as equipped for ordinary work. Lecturettes were given by Mr. John Williams, head of the Artistic Craft Department on "Picture Books"; by Mr. S. D. Chalmers, head of the Technical Optics Department, on "Mirrors"; and by Mr. Samuel Field, head of the Technical Chemistry Department, on "Artificial Nitrates."

The annual report of the 117th session of the Royal Technical College of Glasgow, just issued, states that last year the day classes were attended by 610 students, and the evening classes by 4,298 at the college and by 161 at the country centres. In the continuation classes affiliated to the college there were 9,641 students. The classes in architecture and the building trades were last year attended by 637 students. On the completion of the term of office of Mr. T. L. Watson as representative of the Glasgow Institute of Architects, he was succeeded by Mr. James M. Monro, F.R.I.B.A.; but Mr. Watson retains his connection with the college as a member of the committee on architecture and building and of the joint committee on the School of Architecture. The council express their indebtedness to Mr. Watson for designing a new official seal, which has been executed by the Bromsgrove Guild. The balance-sheet hows a total revenue for the year of £34,698.

An outline of a special report, not yet given out by its author, Mr. W. B. McKenzie, right-of-way engineer of the Intercolonial, was presented at the recent convention of the American Railway and Bridge Association, held in Montreal. Mr. McKenzie stated that all along the part of the Atlantic Coast affected by frost concrete in salt water scales off between high and low tide, giving a figure of ½in. per year as about the rate at which it chips off. The remedy proposed by him was a facing of salt-glazed vitrified brick, which is not affected by sea water. He would use hollow bricks with tongue-and-groove joints, so that the blocks could be laid, without mortar, under water, and would lock to serve as a form for the concrete. This facing would be continuously hollow from top to bottom, and additional openings 4in. square in the back of each block would allow the concrete to flow in and bond the entire mass.

"Valuations and Compensations," by the late Professor Banister Fletcher (London: B. T. Batsford, 7s. 6d.) has reached a fourth edition, which only needs our mention. It has been thoroughly remodelled and revised to bring it abreast of recent developments in practice and legislation. The number of pages has been more than doubled, owing to the introduction of several new chapters, such as those on Valuations for Rating, for Mortgage, and in connection with the Finance Acts, 1909-12. The full text is given in the Finance Acts of 1909, 1911, and 1912, and the Agricultural Holdings Act of 1908, as well as of the Rules and Orders of the Commissioners and of the Supreme Court relating to Land Values Duties, and the Inland Revenue Instructions to Valuers. The most recent cases down to the last month have been summarised, and the results of their decisions incorporated. Fresh Valuation Tables have also been added, and all these additions have been made without detracting from the handy character of the book, or greatly adding to the price.

Messrs. Robt. Ingham Clark and Co., Ltd., must earn the gratitude of their thousands of friends all over the world, to whom they despatch their own edition of that reliable standby, the "British Almanac and Cyclopædia," for the coming year. With its most generous of all diary insurance policies and its well-arranged store of information, it has as few compeers as the firm that thus adopts it, and adds in really efficient fashion to the beneficial diffusion of useful knowledge. No volume on the office desk or bookshelf will be oftener picked up during 1914, and no satisfied gleaner of information will replace it without a grateful thought of its donors, as their kindly message on the back of the volume reawakens the memory of their courtesy.

The Hove Seaside Villas, Ltd., who own a large stretch of foreshore, found there was a growing demand for shingle, beach gravel, etc., and had for some time disposed of it to contractors, builders, etc., throughout the district by the cubic yard, came to the conclusion that stoppage of the leakage, or, in plain words, the overweight which has been given, would amply repay the cost of an up-to-date weighbridge in six months. One has now been installed, and accuracy and reliability avoid all disputes, in addition to which a ticket is printed at the time of weighing, showing the exact load, so that seller and buyer can have no trouble afterwards in settling accounts. Messrs. W. and T. Avery, Ltd., of the Soho Foundry, Birmingham, have made and fixed one of their recent model machines having a capacity of six tons, and being constructed on the three-lever principle, which avoids all torsional stress, and allows the platform to move slightly in the direction of the traffic, preventing undue shock and wear of the machine, and prolonging its working life and accuracy. The machine is fitted with a steel-notched protection bar, which preserves the accuracy of the graduation grooves on the steelyard. The ticket-printing is effected on Avery's new patent revolving disc principle, and by placing a ticket in the slot at the head of the pillar and lowering the small lever, the actual weight is indelibly printed, while the weight can be read off the steelyard at the same time. There is little doubt that selling bulk by weight is becoming more universal, and the installation of this machine will doubtless help along the general adoption of the principle.

At the corner of Tenth-avenue and Thirty-sixth-street, New York City, the architects, Goldwin, Starrett, and Van Vleck, have provided plans for a twelve-story skyscraper, in which the entire front of the building and its interior sides are to be of glass. In fact, 78 per cent. of the walls will be of this material. There will be no openings in the glass façade except those in the front of the building for emergency purposes, but which will not be visible from the street. It is estimated that the structure will cost approximately 600,000 dollars, of which amount 78,000 dollars will cover the cost of the glass. On the interior the glass will be a specially polished plate, and for the exterior surface will be specially treated plate that will not transmit heat-waves into the interior.

Artificial stone is made, according to a patent by W. Laufer, 4, Gertruda, Cracow, Austria, as follows:—Granite or greywacke, basalt, porphyry, or the like in coarse and in fine granulations, are mixed with aluminium phosphate and sodium carbonate in about the following proportions: 40 parts of coarse porphyry, 50 parts of fine porphyry, such as porphyry tuff, 6 parts of aluminium phosphate, and 4 parts of sodium carbonate. The mixture is moistened, pressed into blocks, and heated to about 1,000°-1,200° C. Silica and lime may be added in quantities of from 5 to 10 per cent., to regulate the clinkering. To increase the cementing power of the mass, colloidal alumina may be added in the proportion of from 2 to 8 per cent. aluminium hydroxide in the whole mass.

A scheme for the provision of additional plant at the corporation electricity works, at a cost of £24,000, was approved by the Carlisle City Council on Tuesday night.

The Apostolic School of the White House at Bishop's Waltham has been blessed by the Bishop of Portsmouth. The building contains schoolrooms, refectory, dormitories, kitchen, scullery, bathrooms, and lavatories. It has been erected from the plans of Mr. Sanders, architect, the work being executed by Mr. Draper, of Fareham.

MEETINGS FOR THE ENSUING WEEK.

Friday (To-day).—Northern Polytechnic Institute, Holloway. "The Architectural Treatment of Colour in Building," by Ivor Beaumont, A.R.C.A. 8 p.m.
Glasgow Camera and Sketching Club. "Pictorial Composition," by A. G. Watson. 8.15 p.m.

Saturday (To-morrow.) Institution of Water Engineers. Third Annual Meeting. 10 a.m.

Monday.—Royal Institute of British Architects. "The Repair of Ancient Buildings," by W. A. Forsyth, F.R.I.B.A. 8 p.m.
Surveyors' Institution. "Modern Science and Modern Agriculture," by Professor Ainsworth Davis, M.A., Principal of Royal Agricultural College, Cirencester. 8 p.m.
Royal Society of Arts. "Measurement of Stresses in Materials and Structures," Cantor Lecture No. 3, by E. G. Coker, M.A., D.Sc. 8 p.m.

Tuesday.—Illuminating Engineering Society. "Some Problems in Daylight Illumination, with Special Reference to School Planning," by P. J. Waldram. Royal Society of Arts Room. 8 p.m.
Institution of Civil Engineers. "Cyclical Changes of Temperature in a Gas-Engine Cylinder," by Professor Ernest George Coker, M.A., D.Sc., and Walter Alfred Scoble, B.Sc., Assoc.MM.I.C.E. 8 p.m.

Wednesday.—Society of Architects. Students' Social. Music, Smoking, Books. 6 p.m.
St. Paul's Ecclesiological Society. "Southwark Cathedral," by E. W. Harvey Piper. St. Paul's Chapter-House, E.C. 8 p.m.
Royal Society of Arts. "The Channel Tunnel," by Arthur Fell, M.P. 8 p.m.

Thursday.—A.A. Camera, Sketch, and Debate Club. Papers on "The Present Relation of the Three Fine Arts." 8 p.m.

Friday (Dec. 19).—Institution of Civil Engineers. Students' Meeting. "Air-Filtration, and the Cooling and Ventilation of Electrical Machines," by W. E. Gurry, Stud.Inst.C.E. 8 p.m.

The rural district council of Ulverston have appointed Mr. J. F. Elwood as surveyor for Hawkshead and High Furness divisions, and Mr. G. Brocklesbury as surveyor for the Cartmel and Low Furness divisions.

Lieutenant-Colonel David Gaillard, of the United States Army, who was in charge of the engineering work in the Culebra Cut division of the Panama Canal, died on Friday in the Johns Hopkins Hospital at Baltimore from an illness contracted in the Canal zone.

The parish church of Kedington, near Haverhill, South-West Suffolk, is about to be repaired under the direction of Mr. Detmar J. Blow. From the number and importance of its monuments to members of the Barnardiston family, Kedington Church has been grandiloquently termed the "Westminster Abbey of Suffolk."

At the offices of the Royton District Council on Thursday in last week, Mr. M. K. North, M.I.C.E., an inspector of the Local Government Board, heard an application for sanction to borrow £1,248 on account of private street works in Industry-street and Schofield-street; and £5,074 for the reconstruction of a portion of Rochdale-road.

The city council of Newcastle-on-Tyne has formally adopted the plans prepared by Mr. Alfred W. S. Cross, M.A., F.R.I.B.A., of London, for three sets of public baths, to be constructed in Wharrier-street, Walken; Biddlestone-road, Heaton; and at Benwell. The plans by Mr. Cross were selected in competition some time since, by the assessor, Mr. H. W. Wills.

Penscot, Shipham, Somerset, which was formerly an inn, is to be enlarged to serve as a Guest House in connection with the National Council of Adult School Unions, by the addition of a large dining-hall, dormitory and bedrooms, bathrooms and offices, to afford accommodation for thirty visitors. The new work is to be carried out in harmony with the old, with walls of local stone, cream-washed, roof of pantiles, wood casements and other joinery finished white. The architect is Mr. Harold F. Trew, M.S.A., of County Chambers, Gloucester.

In connection with the house-building outlay contemplated in the Westdean district of the Royal Forest of Dean, there has arisen the question of providing a wholesome supply of water. The matter came up at the last meeting of the rural district council, when Mr. S. J. Elsom, the clerk, explained that the difficulty was that the colliery workings everywhere had drained the private wells. The chairman moved that they should proceed with the provisionally accepted £20,000 scheme, but with the proviso that the Crown should provide one-third of the cost. The resolution was agreed to.

Trade News.

WAGES MOVEMENTS.

FALMOUTH. A small contingent of employers at Falmouth attended a private meeting of carpenters, painters, masons, and labourers, held on Friday evening, with a view to an increase of wages and a rearrangement of hours. It was decided to adjourn the meeting until to-morrow (Saturday) evening, for the purpose of securing a larger attendance of the employers, who number over twenty. The men explain that at present they are not demanding an immediate increase of wages, but are merely throwing out a suggestion, in the hope that the matter will be amicably arranged.

CHIPS.

The Church of St. Augustine, at Highgate, is about to be completed at a cost of £8,000

The county council of Mayo have appointed Mr. P. B. Conway, of Westport, as assistant county surveyor.

The salary of Mr. G. J. Wooldridge, surveyor to the Woking Urban District Council, has been increased by £50 per annum.

Cardinal Bourne opened on Monday a Roman Catholic church dedicated to St. Anthony of Padua at Garratt-road, Edgware.

The corporation of Southport are about to rebuild their municipal buildings at a cost of £6,000 as a three-story edifice on the site of the present one-storied one.

The town council of Kilkenny have approved of plans by Mr. James F. Reade, A.M.I.C.E., for main drainage and sewage disposal works for the city, estimated to cost £22,000.

The Union Railway Station is being demolished, and will be replaced by a larger one, with a frontage of 860ft., from plans by Mr. John M. Lyle, architect, of Toronto.

The death occurred at Congleton, on Thursday in last week, of Mr. Charles Henry Holmes, who was for many years a successful builder of houses and factories in Crewe. He was 56 years of age.

Mr. G. F. Crawford, the Southport highway surveyor, under whose superintendence all the great improvements have taken place in the sea-front and King's-gardens, has been appointed highway surveyor of Birmingham at a salary of £500 a year.

A beautiful memorial to Florence Nightingale was unveiled on Saturday in the Church of Santa Croce, Florence. The memorial takes the form of a symbolical marble statue of watchfulness holding aloft a lamp. It is the work of the English sculptor Mr. P. M. Sargant.

Frederick Thomas Johnson, aged 37, a builder, late of Mycenæ-road ,West Coombe Park, was committed for trial by the Greenwich magistrates on Friday, on a charge of obtaining credit without disclosing the fact that he was an undischarged bankrupt.

The building surveyor to the Salford Corporation has been granted an honorarium of £100 for services in connection with the underground fire at the Wilburn-street depôt, and the preparation of plans and erection of buildings at the Agecroft depôt for slab-making plant.

Sir Walter Armstrong has resigned his position as Director of the National Gallery of Ireland, which he has held for 21 years. Sir Walter, who is 63 years of age, acted before his appointment to Dublin, was a well known art critic; he has written many books on the lives and work of leading British artists.

The chancel-screen which has been placed in Longhirst Church, Morpeth, as a memorial of the late Lady Joicey, was dedicated on Wednesday night by Bishop Neligan. The screen was designed by Messrs. Hicks and Charlewood, of Newcastle-on-Tyne, and has been executed by members of a wood-carving class at Longhirst, a branch of the Northumberland Handicrafts Guild.

At the recent annual meeting of the Iowa Chapter of the American Institute of Architects, held at Des Moines, resolutions condemning present methods of competition were passed. A proposed endorsement of a state license law was referred to the legislative committee, the unanimous opinion being expressed during the meeting for action that will place Iowa with other states now controlling the practice of architecture. A plan to provide a "working basis" between the architects of the state and the Master Builders' Association of Iowa was also formulated, and will be pushed to an early issue.

LATEST PRICES.

IRON.

Steel Joists, Belgian and German (ex steamer, London)	per ton	£6	2	6	to £6	5	0
Steel Joists, English		7	10	0	,, 7	12	6
Wrought-Iron Girder Plates		7	0	0	,, 7	5	0
Steel Girder Plates		7	2	6	,, 8	3	6
Bar Iron, good Staffs		6	5	0	,, 8	10	0
Do., Lowmoor, Flat, Round, or Square		20	0	0	,, 0	0	0
Do., Welsh		5	15	0	,, 5	17	0
Boiler Plates, Iron—							
South Staffs		8	0	0	,, 8	15	0
Best Snedshill		9	0	0	,, 9	10	0

Angles 10s., Tees 20s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £8 15s to £9
Ditto galvanised, £14 to £15 10s. per ton.

Galvanised Corrugated Sheet Iron—

	No. 18 to 20.	No. 22 to 24
6ft. to 8ft. long, inclusive	Per ton.	Per ton.
gauge	£13 0 0	... £13 10 0
Best ditto	13 0 0	... 14 0 0

Wire Nails (Points de Paris)—

3 to 7	8	9	10	11	12	13	14	15	B.W.G
8/3	8 9	9/3	9/9	10/3	11/-	11/9	12/6	13/6	per cwt

	Per ton.				Per ton.		
Cast-Iron Columns	£7	10	0	to	£9	0	0
Cast-Iron Stanchions	7	10	0	,,	9	0	0
Rolled-Iron Fencing Wire	8	5	0	,,	8	10	0
Rolled-Steel Fencing Wire	7	5	0	,,	7	10	0
,, ,, Galvanised	8	15	0	,,	9	5	0
Cast-Iron Sash Weights	5	0	0	,,	5	5	0
Cut Floor Brads	9	15	0	,,	—		
Corrugated Iron, 24 gauge	16	0	0	,,	—		
Galvanised Wire Strand, 7 ply, 14 B.W.G.	14	5	0	,,	—		

B.B. Drawn Telegraph Wire, Galvanised—

0 to 8	9	10	11	12	B.W.G.
£10 10s.	£10 15s.	£11 0s.	£11 5s.	£11 15s.	per ton.

Cast-Iron Socket Pipes—							
3in. diameter	£6	2	6	to	£6	7	0
4in. to 6in.	6	0	0	,,	6	5	0
7in. to 24in. (all sizes)	5	7	6	,,	6	0	0

[Coated with composition, 5s. 0d. per ton extra, turned and bored joints, 5s. 0d. per ton extra.]

	Per ton.		
Pig Iron—			
Cold Blast, Lilleshall	110s.	0d. to	117s. 6d.
Hot Blast, ditto	70s.	0d. ,,	75s. 0d.

Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—

Gas-Tubes	75 p.c.
Water-Tubes	72½ ,,
Steam-Tubes	67½ ,,
Galvanised Gas-Tubes	65 ,,
Galvanised Water-Tubes	62½ ,,
Galvanised Steam-Tubes	57½ ,,

OTHER METALS.

Spelter, Silesian	Per ton	£20	17	6	to £21	2	6
Lead Water Pipe, Town		22	5	0	,,	—	
,, ,, ,, Country		23	0	0	,,	—	
Lead Barrel Pipe, Town		24	5	0	,,	—	
,, ,, ,, Country		24	0	0	,,	—	
Lead Pipe, Tinned inside, Town		24	5	0	,,	—	
,, ,, ,, ,, Country		25	0	0	,,	—	
Lead Pipe, Tinned inside and outside ..... Town		26	15	0	,,	—	
,, ,, ,, ,, Country		27	10	0	,,	—	
Composition Gas-Pipe, Town		25	5	0	,,	—	
,, ,, Country		26	0	0	,,	—	
Lead Soil-pipe (up to 4½in.) Town		25	5	0	,,	—	
,, ,, ,, Country		26	0	0	,,	—	
[Over 4½in. £1 per ton extra.]							
Lead Shot, in 28lb. bags		24	15	0	,,	—	
Copper Sheets, sheathing & rods		83	0	0	,, 83	10	0
Copper, British Cake and Ingot		78	10	0	,, 79	0	0
Tin, English Ingots		177	10	0	,, 178	0	0
Do., Bars		178	10	0	,, 179	0	0
Pig Lead, in 1cwt. pigs (Town)		19	5	0	,,	—	
Sheet Lead, Town		21	15	0	,,	—	
,, ,, Country		22	10	0	,,	—	
Genuine White Lead		30	15	0	,,	—	
Refined Red Lead		25	0	0	,,	—	
Sheet Zinc		29	0	0	,,	—	
Old Lead, against account		16	15	0	,,	—	
Tin	per cwt.	10	0	0	,,	—	
Cut nails (per cwt. basis, ordinary brand		0	11	3	,,	—	

TIMBER.

CONSTRUCTIONAL.

Yellow Pine Deals, Quebec, per standard :—							
	1st quality	£38	0	0	to £45	0	0
,, ,, ,,	2nd ,,	26	0	0	,, 32	0	0
,, ,, ,,	3rd ,,	16	0	0	,, 18	10	0
Spruce Deals : St. Johns		10	0	0	,, 11	10	0
,, ,, Miramichi		9	10	0	,, 10	10	0
,, Boards : Swag		11	0	0	,, 12	0	0
Red Deals : rchangel 1st quality		21	0	0	,, 24	0	0
,, ,, ,, 2nd ,,		16	0	0	,, 19	0	0
,, ,, ,, 3rd ,,		12	0	0	,, 14	0	0
,, ,, St. Petersburg—							
,, ,, ,, 1st quality		16	10	0	,, 18	0	0
,, ,, ,, 2nd ,,		14	10	0	,, 15	10	0
,, ,, Wyburg & Uleaborg		12	10	0	,, 15	0	0
Gefle, Gothenburg, and Stockholm ...		12	10	0	,, 17	0	0
White Deals : Crown		14	0	0	,, 15	10	0
,, ,, Seconds		11	10	0	,, 13	0	0
Flooring : White and Planed—							
1st and 2nd quality mixed ...		10	15	0	,, 11	15	0
1st, 2nd, & 3rd quality mixed		10	5	0	,, 11	0	0
Red Planed, 1st quality		14	10	0	,, 17	0	0
Pitch Pine : Prime Deals and Boards		18	0	0	,, 23	0	0
Lignum Vitæ	Per ton	7	0	0	,, 14	0	0
	Per cubic foot.						
Yellow Pine Logs (waney board)		0	5	0	,, 0	5	6
Pitch Pine Logs		0	2	0	,, 0	2	6
Birch : Quebec Logs		0	2	3	,, 0	2	9
Oak : Austrian Wainscot		0	7	0	,, 0	8	0
Mahogany : Gaboon		0	2	0	,, 0	2	3

FURNITURE AND HARDWOODS.

Teak : Burmese, per load, 50ft.		£20	0	0	to £25	0	0
Teak : Java, per load, 50ft.		16	0	0	,, 31	0	0
	Per cubic foot.						
Oak Planks : U.S.A., imported		0	1	9	to 0	2	6
,, Boards ,, ,, Prm.		0	3	0	,, 0	3	6
,, ,, ,, Mdm.		0	2	6	,, 0	2	9
Sequoia (Californian Redwood)		0	2	4	,, 0	3	6
Birch : Quebec logs		0	2	3	,, 0	2	9
,, ,, sawn planks		0	1	3	,, 0	2	0
Oak : Austrian Wainscot		0	7	0	,, 0	8	0
Walnut : Prime boards and planks		0	6	0	,, 0	6	6
Walnut : Mdm. ,, ,,		0	3	6	,, 0	4	6
Greenheart : Hewn logs		0	3	3	,, 0	4	0
Cedar : Cigar box		0	4	9	,, 0	5	6
Satin Walnut : Imp. sawn boards, prime		0	2	4	,, 0	2	9
Orham : Imp. sawn boards, prime		0	2	0	,, 0	2	3
Mahogany : St. Domingo, Cuba, and Honduras		0	6	0	,, 0	9	0
,, African, Assinee, &c.		0	5	0	,, 0	6	6
,, Lagos and Benin		0	4	6	,, 0	6	0
,, Sekondi and Cape Lopez		0	3	0	,, 0	4	0
,, Gaboon		0	2	0	,, 0	2	0
Satinwood : West Indian		0	10	0	,, 0	14	0
Rosewood	Per ton	8	0	0	,, 12	0	3
Lignum Vitæ	,,	7	0	0	,, 14	0	0

STONE.*

Red Mansfield, in blocks	per foot cube	£0	2	1
Darley Dale, ditto	,,	0	2	3
Red Corsehill, ditto	,,	0	2	3
Closeburn Red Freestone, ditto	,,	0	3	0
Ancaster, ditto	,,	0	1	10
Greenshill, ditto	,,	0	1	10
Chilmark, ditto (in truck at Nine Elms)	,,	0	1	10½
Hard York, ditto	,,	0	2	0
Ditto ditto 6in. sawn both sides, landings, random sizes	per foot sup.	0	2	8
Ditto ditto 3in. slab sawn two sides, random sizes	,,	0	1	3

* All F.O.R. London.

Bath Stone, delivered on road waggons, Paddington Depot	per foot cube	0	1	7½
Ditto, ditto, Nine Elms Depot	,,	0	1	9½
Beer Stone, delivered on rail at Seaton Station	,,	0	1	0
Ditto, delivered at Nine Elms Station	,,	0	1	6½

Portland Stone, in random blocks of 20ft. average :—

	Brown Whit Bed.	White Base Bed
	Per foot cube.	
Delivered on road waggons at Paddington Depot, Nine Elms Depot, or Pimlico Wharf	... £0 2 3	... £0 2 1

SLATES.

	in. in.	£	s.	d.	per 1,000 of 1,200 at r.stn.
Blue Portmadoc	20×10 ...	12	12	6	,, ,,
,, ,,	16× 8 ...	6	12	6	,, ,,
Blue Bangor	20×10 ...	13	2	6	,, ,,
,, ,,	20×12 ...	13	17	6	,, ,,
First quality	20×10 ...	13	0	0	,, ,,
,, ,,	20×12 ...	13	15	0	,, ,,
,, ,,	16× 8 ...	7	5	0	,, ,,
Eureka unfading green	20×10 ...	15	17	6	,, ,,
,, ,,	20×12 ...	18	7	6	,, ,,
,, ,,	18×10 ...	13	5	0	,, ,,
,, ,,	16× 8 ...	10	5	0	,, ,,
Permanent green	20×10 ...	11	12	6	,, ,,
,, ,,	18×10 ...	9	12	6	,, ,,
,, ,,	16× 8 ...	6	12	6	,, ,,

BRICKS.

(All prices net.)

First Hard Stocks	£1	15	0	per 1,000 alongside, in	
Second Hard Stocks	1	11	0	,, ,,	[river.
Mild Stocks	1	9	0	,, ,,	,,
Picked Stocks for Facings	2	5	0	,,	delivered at rly. stn.
Flettons	1	10	0	,, ,,	,,
Pressed Wire Cuts	1	18	0	,, ,,	,,
Red Wire Cuts	1	14	0	,, ,,	,,
Best Fareham Red	3	12	0	,, ,,	,,
Best Red Pressed Ruabon Facing	5	0	0	,, ,,	,,
Best Blue Pressed Staffordshire	3	15	0	,, ,,	,,
Ditto Bullnose	4	0	0	,, ,,	,,
Best Stourbridge Firebricks	3	14	0	,, ,,	,,
2½in. Best Red Accrington Plastic Facing Bricks	4	10	6	,,	Net, delivered in full truck loads in London.

" Accrington Best Red Plastic Facing Bricks per 1,000	£2 10 0
3⅜" ditto Second Best Plastic ditto	2 2 6
Ditto Ordinary Second Bricks	1 11 3
Ditto Plastic Engineering Bricks	1 17 6
Sewer Arch Brick not more than 3⅜" in thickest part	2 0 0
3⅜" Chimney Bricks fit for outside work	2 6 0
3⅜" ditto ditto through and through	2 0 0
3⅜" Beaded, Ovolo and Bevel Jambs; Octagons; 2¼" and ½" radius Bullnoses; Stock patterns	3 7 6
Accrington Air Bricks, 9"×2 course deep, each	0 0 6
Ditto ditto 9"×1 course ,,	0 0 3

Accrington Camber Arches :—

3 course deep, 4½" soffit, per foot opening						...	0 1 3	
4	ditto	4½"	ditto	ditto	ditto	...	0 1 8	
5	ditto	4½"	ditto	ditto	ditto	...	0 2 1	
6	ditto	4½"	ditto	ditto	ditto	...	0 2 6	
3	ditto	9"	ditto	ditto	ditto	...	0 2 1	
4	ditto	9"	ditto	ditto	ditto	...	0 2 11	
5	ditto	9"	ditto	ditto	ditto	...	0 3 9	
6	ditto	9"	ditto	ditto	ditto	...	0 4 6	

Net free on rail: or free on boat at works.

GLAZED BRICKS.

HARD GLAZES, (PER 1,000.)

White, Ivory, and Salt Glazed. Best.	Seconds.	Buff, Cream, & Bronze. Best.	Other Colours.	Second Colours
Stretchers—				
£12 7 6	£10 17 6	£13 17 6	£17 17 6	£12 7 6
Headers—				
11 17 6	10 7 6	13 7 6	17 7 6	11 17 6
Quoins, Bullnose, and 1½in. Flats—				
15 17 6	14 17 6	17 17 6	21 7 6	15 17 6
Double Stretchers—				
17 17 6	16 7 6	20 17 6	24 7 6	17 17 6
Double Headers—				
14 17 6	13 7 6	17 17 6	21 7 6	14 17 6
One side and two ends, square—				
18 17 6	17 7 6	21 17 6	26 7 6	18 17 6
Two sides and one end, square—				
19 17 6	18 7 6	22 17 6	26 17 6	19 17 6
Splays and Squints—				
17 7 6	15 17 6	21 17 6	24 17 6	17 7 6

Plinth and Hollow Bricks. Stretchers and Headers—
5d. each 4d. each 6d. each 6d. each 5d. each
Double Bullnose, Round Ends, Bullnose Stops—
5d. each 4d. each 6d. each 6d. each 5d. each
Rounded Internal Angles—
4d. each 3d. each 5d. each 5d. each 4d. each

MOULDED BRICKS.

Stretchers and Headers—
8d. each 8d. each 8d. each 8d. each 8d. each
Internal and External Angles—
1/2 each 1/2 each 1/2 each 1/3 each 1/2 each
Cill Bullnose, Stretchers and Headers—
5d. each 4d. each 6d. each 6d. each 5d. each

Majolica or Soft Glazed Stretchers and Headers	Per 1,000 £22 17 6
" Quoins and Bullnose	27 17 6
Compass bricks, circular and arch bricks of single radius £6 per 1,000 over above list for their respective kinds and colours	Not exceeding 9in.
Camber arch bricks, any kind or colour, 1s. 2d. each	by 4½in by 2½in.

Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.

* These prices are carriage paid in full truck loads to London Stations.

	s.	d.	
Thames Sand	7	6	per yard, delivered
Pit Sand	7	0	" "
Thames Ballast	6	0	" "

	s.	d.		s.	d.	Per ton,
Best Portland Cement	36	0	to	41	0	delivered
Ground Blue Lias Lime	21	0	per ton delivered.			

Exclusive of charge for sacks.

	s.	d.		s.	d.	Per yard,
Grey Stone Lime	13	6	to	14	0	delivered

Stourbridge Fireclay in sacks 27s. 0d. per ton at railway station.

TILES.

	s.	d.	Dlvrd. at
Plain red roofing tiles	42	0	per 1000 ry. stn.
Hip and Valley tiles	3	7	per doz. " "
Broseley tiles	50	0	per 1000 " "
Ornamental tiles	52	6	" " "
Hip and Valley tiles	4	0	per doz. " "
Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000 " "
Ornamental do.	60	0	" " "
Hip tiles	4	0	per doz. " "
Valley tiles	3	0	" " "
Selected "Perfecta" roofing tiles:—Plain tiles (Peake's)	46	0	per 1000 " "
Ornamental do.	48	6	" " "
Hip tiles	3	10½	per doz. " "
Valley tiles	3	4½	" " "
"Rosemary" brand plain tiles	48	0	per 1000 " "
Ornamental tiles	50	0	" " "
Hip tiles	4	0	per doz. " "
Valley tiles	3	8	" " "
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 " "
Hand-made sand-faced	45	0	" " "
Hip tiles	4	0	per doz. " "
Valley tiles	3	6	" " "
Hartshill" brand plain tiles, sand-faced	50	0	per 1000 " "
Pressed	47	6	" " "
Ornamental do.	50	0	" " "
Hip tiles	4	0	per doz. " "
alley tiles	3	6	" "

OILS.

Rapeseed, English pale, per tun	£28	15	0	to £29	5 0
Do., brown " "	26	15	0	" 27	5 0
Cottonseed, refined " "	29	0	0	" 30	0 0
Olive, Spanish " "	39	10	0	" 40	0 0
Seal, pale " "	21	0	0	" 21	10 0
Cocoanut, Cochin " "	46	0	0	" 46	10 0
Do., Ceylon " "	42	10	0	" 43	0 0
Do., Mauritius " "	42	10	0	" 43	0 0
Palm, Lagos " "	32	5	0	" 33	5 0
Do. Nut Kernel " "	35	0	0	" 35	10 0
Oleine " "	17	5	0	" 19	5 0
Sperm " "	30	0	0	" 31	0 0
Lubricating U.S. per gal.	0	7	0	" 0	8 0
Petroleum, refined " "	0	0	6½	" 0	0 6½
Tar, Stockholm per barrel	1	6	0	" 1	10 0
Do., Archangel " "	0	19	6	" 1	0 0
Linseed Oil per gal.	0	2	1½	"	—
Lamp Oil " "	0	2	7	"	—
Turpentine " "	0	2	9	"	—
Putty (Genuine Linseed Oil) per cwt.	0	8	0	"	—
Pure Linseed Oil "Stority Brand" "	0	10	0	"	—

GLASS (IN CRATES).

	15oz.	21oz.	26oz.	32oz.
English Sheet Glass: Fourths	2d.	3d.	3½d.	4½d.
Thirds	2½d.	3½d.	4½d.	5½d.
Fluted Sheet	2½d.	3½d.	6½d.	7d.

Hartley's English Rolled Plate:	¼in.	⅜in.	½in.
	2½d.	2½d.	3d.

Figured Rolled and Repoussé	White.	Tinted
	3½d.	5d.

VARNISHES, &c.

	Per gallon.
Fine Pale Oak Varnish	£0 8 0
Pale Copal Oak	0 10 0
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of churches	0 14 0
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flatting Varnish	0 18 9
White Copal Enamel	1 4 0
Extra Pale Paper	0 12 9
Best Japan Gold Size	0 10 9
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 0

TRADE NOTES.

The domed roof of the new town-hall at Chadderton Lanes, which was formally opened last week, was constructed of Pudloed cement.

Boyles latest patent "air-pump" ventilators have been applied to the Broomwood Wesleyan Church Clapham Common S.W.

The annual dinner of Messrs. Bovis, Ltd., takes place to-morrow evening, in the Pillar Hall, Victoria Station. Mr. F. G. Babbs is the hon. sec. of the dinner committee.

Messrs. Siemens Bros. Dynamo Works, Ltd., have obtained a contract for "Tantalum" and "Wotan" drawn-wire lamps for the Metropolitan Railway Company for the next twelve months.

The extensions to St. Clement's Schools, Bradford, are being supplied with Shorland's warm-air ventilating patent Manchester grates and ventilators by Messrs. E. H. Shorland and Brother, Ltd., of Failsworth, Manchester.

In consequence of the shortage of Caen stone, owing to the recent floods in France, the demand for Beer stone, which is a rich stone to carve, and easy to work, has increased enormously. The company have recently appointed Mr. E. Holwill, of Temple-chambers, Temple-avenue, E.C., as their London agent.

A British invention has been chosen for the protection of the entire exhibition buildings of the Panama Exposition at San Francisco in 1915. This is the "Aero," which, at the present time, is being installed in the new offices in Great St. Helens to be occupied by the various petroleum companies, the architects of which are Messrs. Joseph and Smithem.

A complimentary dinner under the chairmanship of Mr. C. E. Wilkinson, the newly-elected president of the Paint and Varnish Society, was given last night at the Aldwych Hotel to Mr. J. Russell Thornbery and Dr. M. Bennett Blackler, Ph.D., on their retirement from office as president and hon. secretary respectively. The new secretary is Mr. R. Claude Bussell, who is well known as a lecturer on paint matters.

The many friends of Mr. Alexander Ritchie, J.P., late of Upper Thames-street, will be pleased to learn that he has almost entirely recovered from the accident which for some time kept him in a nursing home. He has recently been seen at more than one City function, one of the recent occasions being the installation of the Right. Hon. the Lord Mayor Sir T. Vansittart Bowater as master of the Guildhall Lodge of Freemasons.

The Dewsbury Town Council have resolved to apply to the Local Government Board for £21,000 for extension of the gas undertaking.

Mr. W. R. Stephens, assistant engineer, has been appointed engineer to the urban district council of Rathmines, Co. Dublin, in place of Mr. Dixon, resigned.

Mr. C. V. Townsend, assistant engineer and manager to the Wakefield Gaslight Co., has been appointed gas engineer and manager to the Hereford Corporation.

The South Shields Gas Company have decided upon a scheme for the erection of new gasworks on the river frontage at the east end of Jarrow. The scheme will be carried out under the direction of Mr. C. Duxbery, the company's engineer.

A Local Government Board inquiry has been held at Ystrad-y-dais into applications of the rural district council for sanction to loans of £15,647 for the purchase of land and the erection of working-class dwellings in Abercrane, Colbran and Ystrad-y-dais and £1,000 under the Small Dwellings Acquisition Act. Mr. J. Cook Rees, architect, Neath has prepared the plans.

TO CORRESPONDENTS.

It is particularly requested that all drawings and all communications respecting illustrations or literary matter, books for review, etc., should be addressed to the EDITOR of the BUILDING NEWS, Effingham House, 1, Arundel-street, Strand, W.C., and not to members of the staff by name. Delay is not infrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

*** Drawings of selected competition designs, important public and private buildings, details of old and new work, and good sketches are always welcome, and for such no charge is made for insertion. Of more commonplace subjects—small churches, chapels, houses, etc.—we have usually far more sent than we can insert, but are glad to do so when space permits on mutually advantageous terms, which may be ascertained on application.

When favouring us with drawings or photographs, architects are asked kindly to state how long the building has been erected. It does neither them nor us much good to illustrate buildings which have been some time executed, except under special circumstances.

Cheques and Post-office Orders to be made payable to THE STRAND NEWSPAPER COMPANY, LIMITED, and crossed London County and Westminster Bank.

CHRISTMAS DAY.

Christmas Day falling this year on Thursday, the BUILDING NEWS of Dec. 26 will have to be published at 1 a.m. on the morning of WEDNESDAY, Dec. 24, in order to reach all readers before the holidays.

All Advertisements for that issue, therefore, must reach us, at the latest, before 3 p.m. on TUESDAY, Dec. 23, instead of by 3 p.m. on Thursday as usual.

Correspondents sending News, Lists of Tenders, &c., are asked kindly to do so early that week, and, at the latest, by the first post on TUESDAY, Dec. 23, so as to preserve an unbroken sequence of news as far as possible.

NOTICE.

Bound copies of Vol. CIV. are now ready, and should be ordered early (price 12s. each, by post 12s. 9d.), as only a limited number are done up. A few bound volumes of Vols. XXXIX., XLI., XLVI., XLIX., LIII., LXI., LXII., LXIV., LXV., LXVI., LXVII., LXVIII., LXIX., LXXI., LXXII., LXXIII., LXXIV., LXXV., LXXVI., LXXVII., LXXIX., LXXX., LXXXI., LXXXII., LXXXIII., LXXXIV., LXXXV., LXXXVI., LXXXVII., LXXXVIII., LXXXIX., XC., XCI., XCII., XCIII., XCIV., XCV., XCVI., XCVII., XCVIII., XCIX., C., CI., CII., CIII., and CIV., may still be obtained at the same price; all the other bound volumes are out of print. Most of the back numbers of former volumes are, however, to be had singly. Subscribers requiring any back numbers to complete volume just ended should order at once, as many of them soon run out of print.

Handsome Cloth Cases for binding the BUILDING NEWS, price 2s., post free 2s. 4d., can be obtained from any Newsagent, or from the Publisher, Effingham House, 1, Arundel-street, Strand, W.C.

TERMS OF SUBSCRIPTION.

One Pound per annum (post free) to any part of the United Kingdom; for the United States, £1 6s. 0d. (or 6dols. 30c. gold). To France or Belgium, £1 6s. 0d. (or 33fr. 30c.) To India, £1 6s. 0d. To any of the Australian Colonies or New Zealand, to the Cape, the West Indies, or Natal, £1 6s. 0d.

*** The special rate to Canada is £1 1s. 8d. =5dols. 27c. for 12 months, and 10s. 10d.=2dol. 64c. six months. Our Direct Subscription Agents for Canada are Messrs. Sells, Ltd., 302, Shaughnessy Buildings, McGill-street, Montreal, who will receive ubscriptions, £1 1s. 8d. per annum, on our account.

*** Our Direct Subscription Agents for Australia are Messrs. E. T. Kibblewhite and Co., Printers and Publishers, 19, York Chambers, 105, Liverpool-street, Sydney, New South Wales; for Japan, Messrs. Z. P. Maruya and Co., Ltd., 11-16, Nionbashi Tori Sanchome, Tokyo; who will receive Subscriptions at £1 6s. per annum on our account. Copies of the paper will be sent by us direct to the subscribers' addresses.

ADVERTISEMENT CHARGES.

The charge for Competition and Contract Advertisements, Public Companies, and all official advertisements is 1s. per line of Eight Words, the first line counting as two, the minimum charge being 6s. for four lines.

The charge for Auctions, Land Sales, and Miscellaneous and Trade Advertisements (except Situation Advertisements) is 6d. per line of Eight Words (the first line counting as two), the minimum charge being 4s. 6d. for 50 words. Special terms for series of more than six insertions can be ascertained on application to the Publisher.

SITUATIONS VACANT AND PARTNERSHIPS.

The charge for advertisements for "Situations Vacant" and "Partnerships" is One Shilling for Twenty-four Words, and Sixpence for every eight words after. *All Situation Advertisements must be prepaid.*

SITUATIONS WANTED.

Advertisements not exceeding Thirty Words, inclusive of name and address, are inserted under the heading "Situations Wanted," *free of charge*.

Rates for Trade Advertisements on front page, and special and other positions, can be obtained on application to the Publisher.

Advertisements for the current week must reach the office not later than 3 p.m. on Thursday. Front-page advertisements and alterations or stop orders for serial advertisements must reach the office by Tuesday Morning to secure attention.

*** Replies to advertisements can be received at the Office, Effingham House, 1, Arundel-street, Strand, W.C., *free of charge*. If to be forwarded under cover to advertiser, an extra charge of sixpence is made. (See Notice at head of "Situations.")

RECEIVED.—H. C. C.—E. C. C.—S. H. B., Ltd.—C. E. B. K.—C. P. B.—B. Bros.—K. F. and R.—B. M. S.—L. and Co.—K. G. and Co.—S. Bros., Ltd.—W. A. N.

VERAX.—Yes.

TERMINUS.—Hardly, we think.

R. F. S.—What does the contractor say? Mere hearsay is not "evidence."

Telephone: DALSTON 1388

OGILVIE & CO.

Many years connected with the late firm of W. H. LASCELLES & CO., of Bunhill Row

Mildmay Avenue, ISLINGTON, N.

EXPERTS in HIGH-CLASS JOINERY.

ALTERATIONS & DECORATIONS. ESTIMATES FREE.

FOR

Olivers' Seasoned Hardwoods,

APPLY TO—

WM. OLIVER & SONS, Ltd., 120, Bunhill Row, London, E.C.

TENDERS.

*** Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

ARLEY.—For carrying out works of sewerage at Arley, for the Nuneaton Rural District Council:—

Trentham, J. G., and Sons, Birmingham (accepted)	£3,000 0 0

(Lowest tender received.)

BILLERICAY.—For alterations and additions to the existing hospital, and for the erection of a pavilion isolation block and laundry and ambulance block at the isolation hospital, near Gooseberry Green, Billericay, for the Billericay Rural District Council. Mr. H. R. Bird, St. Thomas' Gate, Brentwood, architect:—

Dowsing and Davis, Romford ...	£6,220 0 0
Crisp, A. G., Walthamstow ...	5,900 0 0
Fairhead, A., and Son, Enfield ..	5,779 0 0
Potter, H., Chelmsford	5,775 0 0
Moss, S. E., Southend	5,775 0 0
Cronin, S., and Sons, Warley ...	5,742 0 0
Robinson, D., Stansted	5,659 0 0
Jones, W., and Sons, Holborn ..	5,590 0 0
Jarvis, J., & Sons, Ltd., Hackney	5,575 0 0
Parren and Son, Earith	5,496 0 0
Jarvis, F. W., Brentwood	5,434 0 0
Harris Bros., Billericay (accepted)	5,259 0 0
Brown, A. G., Grays	5,245 0 0
Smith, H., Clacton	5,226 0 0

Architect's estimate, £5,279.

CHELMSFORD.—For renovating the vestibule of the Shire Hall, for the Essex County Council:—

Hawkins and Ward (accepted) ...	£158 0 0

DEEPING.—For the repairs of Deeping Saint, James Bridge, for the Soke of Peterborough County Council:—

Cracknell, J., Peterborough ...	£169 0 0

(Accepted.)

DURHAM.—For making-up George-street and Back George-street, for the rural district council:—

George-street:—	
Robson, J., Gosforth	£573 14 10
Oliver, R., Gilesgate Moor... ..	142 9 9
Elcoat, A.	105 1 10
Reevell, G. A., Stockton	98 13 2
Merideth, H.	891 6 0
Carrick, J., Durham (accepted) ...	387 18 3
Back George-street:—	
Robson, J.	220 18 4
Oliver, R.	204 6 6
Elcoat, A.	204 6 3
Merideth, H.	190 3 1
Reevell, G. A....	188 18 7
Carrick, J. (accepted) . .	177 1 11

GILLINGHAM.—For the erection of two villas at Trinity-road, Gillingham. Mr. Ernest J. Hammond, M.S.A., Gillingham, architect:—

West Bros., Rochester	£949 0 0
Gates and Sons, Rochester ...	905 0 0
Effingham, J. W., Dartford ...	845 0 0
Webb, A. G., Rochester	777 0 0
Phillips, H. E., Gillingham ...	750 0 0
Wilford, J., Snodland	710 0 0

GILLINGHAM.—For the erection of seven cottages, Gillingham, for Mr. F. J. Strover. Mr. J. Hammond, M.S.A., Gillingham, architect:—

West Bros., Rochester . .	£1,595 0 0
Effingham, J. W., Dartford .	1,490 0 0
Masters, A., Gillingham ..	1,480 0 0
Phillips, H. E., Gillingham .	1,397 0 0
Webb, A. G., Rochester*	1,480 0 0

* Accepted.

GILLINGHAM.—For the erection of the Invicta Picture Palace, High-street, Gillingham. Mr. Ernest J. Hammond, M.S.A., Gillingham, architect:—

Croneen, H. G. and W. (accepted)	£1,800 0 0

HANLEY.—For heating installation at the pupil teachers' centre, Glass-street, Hanley, for the Stoke-on-Trent Education Committee:—

Haden, G. N., & Sons (accepted)	£241 15 0

HARWICH.—For erecting police quarters at Harwich, for the Essex County Council:—

Saunders, E. (accepted) .	£1,692 0 0

HATFIELD.—For alterations and additions to Springhead, Shottermill, for Mr. M. Mewburn Garnett. Mr. H. Oliver, M.S.A., 4, Whitehall-court, S.W., architect:—

Chapman, Lowry, & Puttick, Ltd.	£899 0 0
Privett, F. ..	867 0 0
Bunning and Fitton Adams, Ltd.	847 0 0
Fry, D.	824 0 0
Crosby and Co., Ltd.	809 0 0

ISLINGTON, N.—For works of cleaning at Manton-street school, North Islington, for the London County Council:—

Mather, J., Northampton-st., N.	£733 0 0
McCormick and Sons, Ltd., Essex-road	685 10 0
Patman and Fotheringham, Ltd., Liverpool-road	677 0 0
Waddington, J., and Sons, Ltd., Ludgate Hill	673 0 0
Stevens and Sons, Crouch Hill ...	643 0 0
Price, C. R., Bishopsgate .. .	642 10 0
Marchant, Hirst, and Co., 136, Highgate-road	563 0 0

* Recommended for acceptance.

LONDON.—For cleaning of interiors of council schools, for the London County Council. Accepted tenders, in every case the lowest received:—

Holden-street, Battersea—	
Garrett, J., and Son...	£205 0 0
The "Lawrence," Bethnal Green—	
Bull, F....	203 0 0
Monnow-road (Central), Bermondsey—	
Downs, W.	236 0 0
Marner-street, Bow and Bromley—	
Mills, E.	215 0 0
Cormont-road, Brixton—	
Line, H.	222 0 0
Monson-road, Deptford—	
Bailey, W.	395 0 0
Everington-street, Fulham—	
Bendon, T., Ltd.	249 0 0
Kingwood-road, Fulham—	
Ronald, R. S.	280 0 0
Langford-road, Fulham—	
King, W., and Son	308 0 0
Blackheath-road, Greenwich—	
Hodgin and Son	201 0 0
Eleanor-road, Hackney—	
Bull, F....	208 10 0
The "Craven Park," Hackney—	
Roberts, C. P., and Co., Ltd. ...	232 5 0
Latimer-road, Hammersmith—	
Bovis, Ltd.	261 0 0
Netherwood-street, Hampstead—	
Chappell, W.	295 0 0
Rotherfield-street, Islington—	
Keetch, G.	218 0 0
The "Hargrave Park," Islington—	
Price, C. R.	335 0 0
York-road, Islington—	
Munday, G., and Sons	332 0 0
Portobello-road, Kensington—	
Polden, A. and F.	277 12 0
The "Ennersdale," Lewisham—	
Finch and Finch . .	2 8 0 0
Farrance-street, Limehouse—	
Inns, A. H.	264 0 0
Beethoven-street, Paddington—	
Chappell, W.	255 0 0
Manchester-street, St. Pancras—	
Barton, W. S., and Co	348 0 0
Prospect-terrace, St. Pancras—	
Whitby Bros.	267 6 0
The "Blackfriars," Southwark—	
Lapthorne and Co., Ltd. .. .	259 0 0
Smallwood-road, Wandsworth—	
Garrett, J., and Son	236 0 0

LONDON.—For the supply of (A) 1 ton of T.C.C. copper wire, .229in. diameter, and (B) 1½ tons of D.C.C. copper wire .229in. by .229in., required in connection with winding car field coils, for the London County Council. Prices a ton:—

	A.	B.	Discount.
Western Electric Co., Ltd.,—	£110 0 0 ...	£112 0 0 ...	2½ p.c.
Callender's Cable & Construction Co., Ltd.—	110 0 0 ..	112 0 0 ...	2½ ,,
General Electric Co., Ltd.—	105 0 0 ...	102 13 1 ...	2½ ,,
Henley's Telegraph Works Co., Ltd.—	105 0 0 ...	101 10 0 ...	2½ ,,
Johnson and Phillips, Ltd.—	98 0 0 ...	101 0 0 ...	—
India Rubber, Gutta Percha and Telegraph Works Co., Ltd. -	99 17 6 ...	100 17 6 ...	2½ ,,
London Electric Wire Co. and Smith's, Ltd.—	91 0 0 ...	93 6 8 ...	2½ ,,
Midland Electric Wire Co., Ltd.—	93 6 8 ...	93 6 8 ...	2 ,,
British Insulated and Helsby Cables, Ltd.—	93 6 8 .	91 0 0 .	2½ ,,
Siemens Bros. and Co., Ltd.—	96 5 0 ...	80 6 8 ...	—

* Recommended for acceptance.

LONDON.—For the supply of 10 armatures (class 22), and 50 reducers, for the highways committee of the London County Council:—

British Westinghouse Electric and Manufacturing Co., Sheffield ...	£1,162 8 0

(Accepted.)

LONDON.—For the supply of 18 tons of hard-rolled steel, for the highways committee of the London County Council:—

Cammell, Laird, and Co., Ltd., Sheffield (accepted)	£154 10 0

LONDON.—For the installation at the Mandsley Hospital of heating and hot-water plant, and electrical wiring and apparatus (excluding generating plant), for the London County Council:—

For Heating and Hot-Water Plant:—	
Carron and Hebert, London . .	£2,923 0 0
Keith, Jas., & Blackman, Ltd., London	1,846 0 0
Haden, G. N., & Sons, Trowbridge	1,646 7 0
Ashwell and Nesbit, London ..	1,468 0 0
Strode and Co., London .	1,298 0 0
Dargue, Griffiths & Co., Liverpool	1,085 1 0
Brightside Foundry and Engineering Co., Sheffield*	4,471 0 0
For Electrical Wiring and Apparatus:—	
Strode and Co., London ...	2,117 0 0
Foot and Mulne, London	2,049 10 0
Donnison, Sillem & Co., London .	1,849 0 0
Edmundson's Electricity Corporation, Ltd., London . .	1,704 14 0
Clarke, T., and Co., London ...	1,704 0 0
Tredegar and Co., London	1,649 0 0
Drake and Gorham, London ...	1,549 0 0
Cash, H. J., & Co., Ltd., London	1,539 0 0
Taylor, G. E., and Co., London ...	1,530 0 0
Tyler and Freeman, London.* ...	1,485 4 0

* Recommended for acceptance.

MIDDLESBROUGH.—For contract work in the reconstruction and making-up of streets. Mr. S. E. Burgess, M.I.C.E., F.R.S.I., Borough Engineer's Office, Middlesbrough, engineer and surveyor:—

Egmont-road	
Crombie, J., and Son, Ltd. ...	£2[illegible] 18 [illegible]
Goodhall Bros.	198 2 10
Newhouse, E.	198 1 8
Pearson, J., Ltd., Stainton-in-Cleveland accepted)	191 6 10
Haymore-street:—	
Pearson, J., Ltd., Stainton-in-Cleveland	344 2 7
Goodhall Bros.	331 3 11
Crombie, J., and Son, Ltd. ...	316 1 6
Newhouse, R. (accepted)	281 19 10

Rest of Middlesbrough.

ROCHESTER.—For the reconstruction of farm buildings at Nashenden Farm, Rochester, for the Rochester bridge wardens. Mr. J. Hammond, M.S.A., Gillingham, architect:—

Baker, G., and Son	£539 0 0
Gates, G. and Sons	495 0 0
West Bros. (accepted) . .	488 0 0

(All of Rochester.)

STROOD.—For the general repairs and exterior painting of the Bridge Hotel, Strood, for Messrs. Budden and Biggs. Mr. Ernest J. Hammond, M.S.A., Gillingham, architect:—

Bines, W. H., Gillingham	£80 0 0
Baker, G., and Son, Rochester ...	77 0 0
West Bros., Rochester	74 0 0
Hitch, J. S., Strood	67 5 0
Swain and Stanley, Gillingham *	56 9 3

* Accepted.

SUNDERLAND.—For supplying and erecting new travelling gear for the South Pier, 20-ton block-setting crane for the River Wear Commissioners:—

Cowan, Sheldon, and Co., Ltd. (accepted).	

UPPER HIGHAM.—For alterations to the Gardeners Public House, Upper Higham, for Messrs. Budden and Biggs. Mr. Ernest J. Hammond, M.S.A., Gillingham, architect:—

Baker, G., and Sons, Rochester ..	£80 0 0
Gates, G., and Sons, Rochester ...	82 0 0
West Bros., Rochester (accepted)	81 10 0

WALTHAMSTOW.—For drainage and surfacing to playground, Pretoria-avenue schools, for the Education Committee. Mr. H. Prosser, M.S.A., architect to the committee:—

Barton, A. G.	£335 0 0
Page, G. M.	327 3 .
Sands, J.	298 10 0
Fuller, E., and Son . . .	291 0 0
Dean, J. and J.	289 0 0
Lucas, D. W. (accepted) . . .	269 0 0

All of Walthamstow.

WALTHAMSTOW.—For sundry improvements to the Forest-road Boys' and Girls' School, for the Education Committee. Mr. H. Prosser, M.S.A., Architect to the committee:—

Page, G. M	£193 18 3
Lucas, D. W.	169 0 0
Barton, A. G.	165 17 6
Sands, J.	157 0 0
Fuller, E., and Son	150 0 0
Dean, J. and J. (accepted) .	147 0 0

All of Walthamstow.

WYE.—For the execution of drainage work at the infants' school, for the Kent Education Committee:—

Shaddock, W., Plymouth	£129 0 0
Snippam, W., Ashford	118 0 0
Wood, J. C., Willesborough ..	113 10 0
Dixon, H., Headcorn	105 14 2
Errudge, R. W., Willesborough ..	104 5 9
Howland, C. J., Deal (accepted)...	103 10 0

The Lancaster Town Council have appointed Mr. Charles Armitage, gas engineer, as consulting engineer, and his son, Mr. Cecil Rhodes Armitage, at present gas manager to the Morecambe corporation, as gas engineer to the council.

LIST OF COMPETITIONS OPEN.

Dec.	15—Water Supply, Beverloo Limburg		Commandant du Genie, Camp de Beverloo, Limburg, Belgium.
,,	23—Laying-out about 16 Acres, and Erecting about 310 Houses Bolton-upon-Dearne	£50, £30	J. Ledger Hawksworth, Council Offices, Bolton-upon-Dearne, Rotherham.
,,	29—New Offices for Board of Trade, Whitehall Gardens, S.W. R. Blomfield, M.A. (Oxon), A.R.A., P.R.I.B.A. J. Belcher, R.A., and Sir Aston Webb, C.V.O., C.B., R.A., Assessors] Sketch Designs, ten will be Selected,		
1914.	with £300 Honorarium each		The Secretary, H.M. Office of Works, Storey's Gate, S.W.
Jan.	2—Manchester Royal Exchange, Additional New Buildings and Alterations. Open to all architects in U.K. Not more than 12 architects of repute have been specially invited; each of whom will receive one hundred guineas. The three selected architects will receive one hundred guineas each. Author of design placed first will be appointed. (J. S. Gibson, F.R.I.B.A., Assessor)		Rich. J. Allen, Master, Royal Exchange, Manchester.
,,	20—Masonic Temple, Toronto (Estimated cost, about £51,400)	Five unsuccessful competitors to receive 750dol., 500dol., and 250dol. respectively	W. H. Best, 181, Avenue-road, Toronto.
Feb.	1—Municipal Technical Institute, Pool Meadow, Coventry		G. Sutton, Clerk, Education Office, 44, Bayley-lane, Coventry.
,,	15—Savings Bank, Verona (Five Assessors)	£1,200, £600	The Savings Bank, 1, Via Garibaldi, Verona.
Mar.	20—Public Museum and Art Gallery, Belfast (John J. Burnet, A.R.S.A., LL.D., Assessor)	Selected Architect to carry out work; second, £100; third, £75; fourth, £50	R. Meyer, Town Clerk, City Hall, Belfast.
April	2—Departmental and Courts Buildings, Ottawa (T. E. Collcutt, J. H. G. Russell, and J. O. Marchand, Assessors). Double Competition, five unsuccessful competitors in second to receive 3,000dol. each		R. C. Desrochers, Department of Public Works, Ottawa, Ont.
May	1—New St. Paul's Bridge, Designs for (Sir W. Emerson, P.P.R.I.B.A., Assessor)	£300, £100	The Town Clerk, Hallkeeper's Office, Guildhall, E.C.
No date	—New Secondary School, City of Bath (Henry T. Hare, F.R.I.B.A., Assessor)		F. D. Wardle, Town Clerk, Guildhall, Bath.
do.	—Defective Children's School, Glake Hall, near Durham		The Clerk, County Education Committee, Shire Hall, Durham.
do.	—Clock Tower, Queen's Park, Brighton. Cost (including Clock), £1,000		H. Talbot, Clerk, Town Hall, Brighton.

LIST OF TENDERS OPEN.

BUILDINGS.

Dec.	12—Semi-Detached Houses (200), Blaenrhondda	Fernhill Garden Village, Ltd.	W. B. Rees, Archt., 3, Dumfries-place, Cardiff.
,,	12—Pavilion, Cleckheaton	Cricket and Bowling Club	R. Castle and Son, Archts., Bank Chambers, Cleckheaton.
,,	12—Church, Rebuilding, Leck		Austin and Paley, Archts., Lancaster.
,,	12—Boys' County School, Alterations to, Barry	Glamorgan County Council	The Glamorgan County Hall, Cathays Park, Cardiff.
,,	12—School Buildings, Salm-Chateau, Vielsalm		Secretariat Communal, College Echevinal, Vielsalm, Belgium.
,,	13—Shop and House, West Vale, Halifax		Walsh and Nicholas, Archts., 10, Harrison-rd., Halifax.
,,	13—Two Cottages, Ironmonger-road, Tenterden	Town Council	W. L. C. Turner, Boro' Sur., Town Hall, Tenterden.
,,	13—Council School, Alterations and Additions to, Headcorn	Kent Education Committee	W. H. Robinson, Archt., Sessions House, Maidstone.
,,	13—Public Library, Dartford	Urban District Council	W. Kay, Clerk, Council Offices, Dartford.
,,	13—Male Infirmary Workhouse, Alterations to, Christchurch	Guardians	A. Druitt, Clerk, 16, High-street, Christchurch.
,,	13—Storage Accommodation, Workhouse, Cardiff	Guardians	A. J. Harris, Clerk, Queen's Chambers, Cardiff.
,,	13—Hall and Agents' Houses, Red Hills, Durham	Miners' Association Committee	H. T. Gradon, A.R.I.B.A., Durham.
,,	13—House, Donington	R. Gleed, J.P.	H. Kidd, Solent House, Kirton, Boston, Lincs.
,,	13—"E" Warehouse, Enlarging, Chandos-street, Portsmouth	Timothy White Co.	A. E. Cogswell, Archt., Prudential Buildings, Portsmouth.
,,	15—Houses (113), Pelton Village	Chester-le-Street R.D.C.	J. H. Mole, Sur., Chester-le-Street.
,,	15—Single-Story Transit Shed, Newcastle-on-Tyne	Trade Committee	The City Engineer, Town Hall, Newcastle-on-Tyne.
,,	15—Grand Casino, Santander	Municipality	Secretaria, Ayuntamiento, Santander, Spain.
,,	15—Eight Shops, Oakdale Village, Blackwood, Mon.	Commercial Building Syndicate	A. F. Webb, M.S.A., Tredegar Chambers, Blackwood, Mon.
,,	15—Cattle Detention Lairage, Town Quay, Southampton	Harbour Board	J. Pailthorpe, Clerk, Harbour Offices, Town Quay, Southampton.
,,	15—Nine Houses, Chapel Hill, Linthwaite	Industrial Co-operative Society, Ltd.	Lunn and Kaye, Archts., Milnsbridge, Yorks.
,,	15—Pair of Cottages, Wootton Wawen, Warwickshire		T. Stevens, F.R.I.B.A., Richmond Chambers, Bournemouth.
,,	15—Church of Duthil, Alterations to, near Carr Bridge		Rev. P. Macgregor, The Manse, Duthil.
,,	15—House, Penrallt Mill, Llechryd		Miss Harries, Penrallt House, Llechryd.
,,	15—Four Houses, Additions to, Rotherwas, Hereford	County Council	B. Dear, County Land Agent, 132, St. Owen-street, Hereford.
,,	15—Rifle Range, Treforest		A. O. Evans, Williams, and Evans, Archts., Pontypridd.
,,	15—Disinfector Station and Mortuary, Canterbury	Guardians	F. H. Dore, 25, Watling-street, Canterbury.
,,	15—Gendarmes' Barracks, Bastogne, Arlon		The Direction des Ponts et Chausees, 3, Rue de l'Athenee, Arlon.
,,	16—School, Additions to, Chalfont St. Peter		A. J. Elkington, Rock House, Chalfont St. Peter.
,,	16—Cottages (12), Studland, Dorset	Wareham and Purbeck R.D.C.	W. Watts Fookes, North-street, Wareham.
,,	16—Two Culverts, Harpur's Gate, Rudyard, near Leek	Rural District Council	J. M. Shaw, Clerk, Union Offices, Leek.
,,	16—Club Premises, New Road Side, Wyke		Sharp and Waller, Archts., 32, Bradford-road, Brighouse.
,,	16—Fire Station, Woodford Green, Woodford	Urban District Council	Tooley and Foster, Archts., Warwick House, Buckhurst Hill.
,,	16—Council School, Alterations to, Tideswell	Derbyshire Education Committee	G. H. Widdows, F.R.I.B.A., County Offices, Derby.
,,	16—Phthisis Offices, Hardman-street, Deansgate	Manchester Sanitary Committee	The City Architect, Town Hall, Manchester.
,,	17—Rifle Range Buildings, Symondsbury, near Bridport	Dorset Terr. Force Assoc.	F. T. Maltby, Archt., Dorchester.
,,	17—Court House and Police Station, Silloth		G. D. Oliver, F.R.I.B.A., County Archt., Carlisle.
,,	17—Institute, Haigh, near Barnsley		Crawshaw and Wilkinson, Archts., 13, Regent-street, Barnsley.
,,	17—Police Muster Hall, Shettleston	Corporation	J. Lindsay, Town Clerk, City Chambers, Glasgow.
,,	17—School, Additions to, White Hart-lane, Wood Green	Education Authority	W. P. Harding, Clerk, Town Hall, Wood Green.
,,	17—County Asylum, Additions to, Abergavenny	Visitors Committee	E. A. Johnson, F.R.I.B.A., Abergavenny.
,,	17—Three Houses, Bolton-upon-Dearne		F. Birkinshaw, Archt., 20, Eldon-street, Barnsley.
,,	17—Rebuilding Three Elms Inn, Whitchurch, Cardiff	Ely Brewery Co., Ltd.	S. Williams, L.R.I.B.A., Wharton-street, Cardiff.
,,	17—Two Houses, Wren-street, Paddock		J. Berry and Sons, Archts., 3, Market-place, Huddersfield.
,,	17—Net Factory, Additions to, Elgin	Low, Sons, and Co., Ltd.	C. C. Doig, Archt., Elgin.
,,	18—Cinema and Billiard Saloon, Cwmaman, Aberdare	Cinema Co., Ltd.	D. Morgan, F.R.I.B.A., Charles-street Chambers, Cardiff.
,,	18—Lodging House, Bell Close, Keswick	Urban District Council	W. Hodgson, Sur., Town Hall, Keswick.
,,	18—Ward Pavilion, Infectious Diseases Hospital, Devonport	Town Council	The Borough Surveyor, 29, Ker-street, Devonport.
,,	18—Old Church, Repairs to, Uldale		J. H. Martindale, F.R.I.B.A., Carlisle.
,,	19—Crown Post, Customs and Excise Office, Ballymena		H. Williams, Sec., Office of Public Works, Dublin.
,,	19—Cottages (24), Two Stiles Field, Kendal Green		F. W. Oxberry, Boro' Sur., Town Hall, Kendal.
,,	19—Labour Exchange, Divisional Office, Doncaster	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate S.W.
,,	20—Recorder and Valve House, Ponden Reservoir, Haworth	Keighley Corporation	M. R. Barnett, M.I.C.E., Town Hall, Keighley.
,,	20—School (130 places), Wickford	Essex Education Committee	F. Whitmore, County Archt., 73, Duke-street, Chelmsford.
,,	20—Military Hospital, Namur		Commandant du Genie, 18, Rue Hastedon, Namur-Sud.
,,	20—Metal Shedding, Casteau Plaine des Manouvres, Mons		Direction des Ponts, Rue des Compagnons, Mons, Belgium.
,,	20—Riding School and Drill Hall, Glynne-road, Bangor	Carnarvonshire Terr. Force Assoc.	E. Evans, Archt., 8, Castle-street, Carnarvon.
,,	22—Shop, Beach-street, Barc, Morecambe	Lancaster Co-op. Soc., Ltd.	Austin and Paley, Archts., Lancaster.
,,	22—Public Offices, Sale	Urban District Council	C. T. Ashead, Archt., 4, St. Ann's-square, Manchester.
,,	22—Three Electricity Sub-Stations, Hackney, N.E.		The Borough Engineer, Town Hall, Mare-street, Hackney.
,,	22—Miniature Rifle Range, Sutton	Surrey Terr. Force Assoc.	Jarvis & Richards, Archts., 10, Queen Anne's Gate, S.W.
,,	22—Council School, Skipton-road, Harrogate	Education Committee	C. H. Channon, Archt., Market-street, Malton.
,,	22—Six Cottages, Wrafton-lane, Braunton	H. Isaac	H. S. Johnson, 56, Boutport-street, Barnstaple.
,,	22—School, Toll Bar, Bentley	West Riding Education Committee	The Education Architect, County Hall, Wakefield.
,,	24—Filter House, Castleshaw, Delph	Oldham Waterworks Committee	C. J. Bailey, M.I.C.E., Piethorne, New Hey.
,,	25—Labour Exchange, Wallsend	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
,,	28—Public Offices, Hornchurch	Parish Council	W. C. Allen, Clerk, Council Office, Hornchurch, Essex.
,,	27—Four Cottages, Lidlington	Highworth Rural District Council	J. P. Kirby, Clerk, 100, Victoria-road, Swindon.
,,	29—Shops, Tangier		Le President de la Commission Generale, Dar En-Niaba, Tangier.
,,	30—Stewards' House and Six Cottages, Beverley	East Riding Asylum Visitors Com.	C. W. Hobson, Clerk, 28, Lairgate-gate, Beverley.
,,	30—Assistant Medical Officer's Quarters, Asylum, Canterbury	Visiting Committee	Jennings and Gray, Arcnts., 4, St. Margaret's-st., Canterbury.
Jan.	2—Pavilion, Additions to, Westbrook, Margate	Corporation	E. A. Borg, Boro' Eng., 13, Grosvenor-place, Margate.
,,	7—Council Schools (90 places), Armitage	Staffordshire Education Committee	G. Baltour, Director of Education, Education Offices, Stafford.
,,	7—Council Schools (128 places), Mavesyn Ridware	Staffordshire Education Committee	G. Baltour, Director of Education, Education Offices, Stafford.
,,	12—Goods Shed (60ft. by 100ft.), Merklands Quay, Partick	Clyde Navigation Trustees	T. R. Mackenzie, Sec., 6, Robertson-street, Glasgow.

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THE BUILDING NEWS

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Carnegie Library, Oswaldtwistle. Selected Design. Plan, elevations, sections, and view. Mr. F. Quentery Farmer, Architect.

The Jesuit Church, SS. Peter and Paul, Vermarkt, Malines, Belgium. Water-colour sketch by Mr. Charles Gascoyne.

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GROWTH OF THE REGISTRATION MOVEMENT.

It was probably with some astonishment that the Members of the Institute heard it claimed by Mr. Peach, when introducing the Council's recent proposals respecting "Chartered Architects" on December 1, that the first definite step to be taken in the direction of Registration was the foundation of the R.I.B.A. in 1835; but, in point of fact, so far as the matter has been traced back, it was as long ago as 1791 that architects commenced to recognise the need for organisation of some description, and this organisation, in very English fashion, first took the form of a club. It met at the Thatched House Tavern, and included several men whose reputations have outlasted their own generation, such as Robert Adam, Sir William Chambers, S. P. Cockerell (the father of Professor Cockerell), George Dance, John Soane, and James Wyatt.

The next step was of a more educational character, the London Architectural Society, which was founded in 1806, insisting that each member should, under pain of forfeit, submit a design and an essay annually to the criticism of his confrères, and attend the meetings regularly. This society seems to have died a natural death, or possibly was killed by the system of fines imposed in connection with it; but it was succeeded in 1831 by a body known as the Architectural Society, of similar but wider aims, almost identical with those of the present Architectural Association.

Out of this the Institute speedily developed, for, to quote the R.I.B.A. Kalendar: "In 1834 it became evident to a few architects of established reputation that the profession required a more influential representative institution than that which already existed." Put differently, as Mr. Peach expressed it the other night, it was becoming recognised that some definite hall-mark, which should distinguish the competent from the incompetent, would be valuable. Thus it came about that the Institute was established, taking definite form in the following year. It obtained its first charter in 1837, absorbed the Architectural Society in 1842, and had the title of "Royal" granted to it in 1866. At the outset there were no class distinctions. All were equally "Members," and none were admitted except well-established men of good reputation—a state of things which was contrary to the spirit of the Early Victorian era, so that it did not last long. The "Members" soon took to themselves the higher-sounding title of "Fellows," and, as if to accentuate their own importance, but really because the demand for a hall-mark of competence was rapidly spreading, established a junior class of Associates, with practically no qualification at all, the Fellows naturally retaining all power in their own hands.

A hall-mark of competence is no hall-mark at all if the test of competence be lacking, as it was in the case of the earlier Associates; and on this becoming recognised, an examination was formulated, as a permissive method of entry into the class, in 1873, becoming the compulsory and only method of entry in 1882. Thus the anomaly came into existence of there being two classes in the Institute, the junior class alone possessing formally-tested qualifications, while yet deprived of almost all rights and privileges. The result, as might have been expected, was chaos and conflict, and a gradual adjustment of the position, not yet completed.

No sooner was the passing of an examination made a compulsory preliminary to the acquirement of Associateship of the Institute, than men began to ask themselves whether it ought not to be insisted upon before the practice of architecture as a professional career was permitted at all. This principle, applied to another profession, had led to the passing of the Medical Act in 1854, and already, well within thirty years of that date, the whole relationship of medicine and surgery to the country had changed immeasurably for the better. It was argued that much the same would happen with regard to architecture. But the Institute had, for the time, exhausted its progressive energies. Those who were in power numbered many who were openly opposed to examinations in architecture, honestly believing that they would be detrimental to the progress of the art (they had not, it will be remembered, our experience to assist them to a true judgment), while there were others who merely stood stubbornly in the way. At this juncture, in the winter of 1883-4, a lengthy correspondence appeared in our own pages about the impassiveness of the Institute, which led to the formation of the Society of Architects in the spring of 1884, its policy being enunciated in the course of that correspondence.

After a short period spent in the necessary work of organisation, the Society, young and ardent, and growing in numbers and influence, set itself energetically to work at the task of promoting Registration. A general conference of architects was convened in 1886, and an independent Registration Bill Committee was formed, numbering amongst its members barristers, solicitors, and medical officers of health, as well as architects. The architects, quite properly, were in the majority, but were by no means all Members of the Society. Of the four members of that Committee who are still living, two are Fellows of the Institute only, one is an Associate of the Institute and also a Member of the Society, and the fourth belongs to the Society only. None now hold office in either body, but all have done so in one or the other, or both.

At that date—1886, or thereabouts—the then President of the Society, Mr. Hugh Roumieu Gough, began an agitation in the Institute, with the object of establishing what he called "Federation," by which he meant some measure of amalgamation of the numerous and isolated architectural bodies, which had by that time been established in provincial centres, with the Institute. He met with strong, and even bitterly hostile, resistance, and many a stormy scene took place. He was apparently defeated in the end; but, since his death, he has been fully justified by the organisation of the allied societies, which now play so great a part in shaping the destinies of the Institute and in keeping it virile.

While thus active, Mr. Gough was also acting as permanent chairman of the Registration Bill Committee, which, immediately on its formation, set one of its members, Mr. Robert Walker, of Cork, to draft a Bill upon suitable lines already laid down. Taking the Medical Act as his model, Mr. Walker produced a measure of so perfect a nature, that, with scarcely any amendment from the legal members of the Committee, it was declared to be the best-drafted private member's Bill of the Session, when it was introduced into the House of Commons by Col. Duncan early in 1888. It was an unduly ambitious measure, for it included engineers and surveyors as well as architects, and though it reached a second reading, it was on this ground that it was opposed on behalf of the Government of the day, and defeated.

Recognising that a serious blunder had been committed, the Bill was re-drafted, to go to Parliament in the following year as "a Bill to provide for the Qualification and Registration of Architects," when, Colonel Duncan having died, it was introduced by Mr. Noble. But by this time the Institute had awoke to the fact that the Registration Committee, and the Society of Architects (which was helping it forward out of its meagre funds) were in earnest, and it recognised that if something were not done promptly to stop it, a measure which the greater number of architects desired would pass into law without having originated within its own august portals. In holy

horror at the idea, the R.I.B.A. Council took action, and, as Mr. Blomfield announced from the chair quite recently, succeeded in "blocking" the Bill on that occasion, and on every subsequent occasion of its introduction by Mr. Atherley Jones. It may perhaps be pleaded for the Council of the Institute that all this was during the nineteenth century (except the last occasion, in 1903), when snobbery was more rife than it is now.

For some years matters remained in this condition, the rank and file of the architectural profession desiring Registration—in some instances, perhaps, with the idea that it would prevent "that beast over the road" from practising in opposition, which it probably would not have done at all—while the official leaders at the Institute blocked the way, and talked of "education" as the alternative remedy for admitted evils, blind to the fact that the compulsory powers of a properly drawn Registration Act would necessarily foster education most effectively. But in 1904 the members of the Institute themselves revolted, turned out of office a long-standing Council which had lost touch with the aspirations of the general body, and elected instead a body which was pledged to Registration. This Council produced a draft Bill "To Secure the Enrolment of Qualified Architects" in 1905, which was a watered-down copy of the now well-known Registration Bill, faulty in many of its details, but possibly capable of being made workable. It was given no chance, for the council which prepared it was thrown out by a reactionary wave in 1905, elected on the plea that the Institute ought to be ruled by men of the highest rank in the profession only, regardless of their opinions — those nominated under this plea all holding the same opinions.

It was an astute move on the part of those who returned to power at that date to come to a compromise with their opponents within the Institute — that famous "compromise" which has succeeded, as it was intended to do, in putting back Registration for several years. In accordance with it, a new Charter was obtained, which contained valuable educational provisions, and the by-laws were overhauled with thoroughness, so as to preclude Council stagnation in the future, and generally greatly to improve administration. But the principal object of this new Charter was the establishment of a new and temporary class of Licentiates, non-corporate, and of a lower order than the Associates, in the hope of thereby bringing all architects practising in the country, one way or another, into connection with the Institute, if not corporately within it. The bait held out was that this was a step forward for Registration, as the Institute, once it had enrolled its Licentiates, would be enabled to speak for a united profession. At the same time (in March, 1907) as it was decided to apply for a new Charter, a series of "Principles" was laid down for future Parliamentary action, it being decided, amongst other things, that the R.I.B.A. should endeavour to obtain (A) Parliamentary recognition of membership, and (H) the legalisation of a scale of charges. These "Principles," adopted on the recommendation of the Council, have proved little less than bugbears ever since; though there have been loyal attempts to adhere to them, through several party changes which it is impossible not to admire, just as one admires persistency of every description, however stupid.

With regard to (A) it was soon seen that Parliament would only sanction such a measure of registration as would recognise the vested interest of every practising architect to continue to practise for the rest of his life. If recognition were sought to be limited to membership of the R.I.B.A., then the only way to obtain it would be first (or at the time of the passing of the Act) to admit every practising architect to membership. The Members of the Society of Architects (which body had been marking time so long as its senior, the Institute, was attempting progress registrationwards) refused, with a few exceptions, to become Licentiates of the R.I.B.A. Some other means of bringing them within the desired statutory "membership" were sought, and an amalgamation was proposed. After much consultation, terms were arranged between the leaders; but they proved unacceptable to the general body of the Institute, and were rejected. It has been said that they were equally disapproved of by the members of the Society, upon diametrically opposite grounds. Anyhow, the scheme fell through.

With regard to (H), it need only be said that to legalise a scale of charges for architects would be contrary to public policy. However desirable or undesirable it might be, it would simply not be accepted by Parliament, while opinion as to its desirability is quite divided in the profession itself. It is at least evident from the absence, time after time, of a quorum when its discussion is announced, as we again remarked last week, that there is no great anxiety to tinker with the now established scale, founded upon custom, but not compulsory.

Confronted with these difficulties, the R.I.B.A. Council has put forward a new scheme, abandoning, perhaps only temporarily, the great leading idea of pressing forward a proper Registration Bill, and substituting a proposition for voluntary enrolment of most practitioners as "chartered architects." The Society, only quiescent while the older body was active, has answered this move by an immediate announcement of its intention to have the "Architects' Registration Bill," revised and brought up to date, introduced into Parliament at once. Thus we arrive at the present position, about which we shall say more next week.

ORNAMENTAL TILE WORK. VIII.

BAYS AND WINDOWS.

Work of a residential character generally is a branch which forms by far the larger bulk of buildings to any city, town, or provincial district. The major portion of this work is, again and often necessarily of an extremely plain or medium class nature.

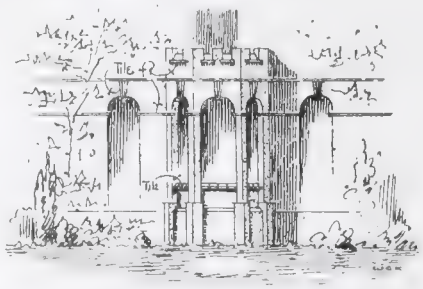


Fig. 1.

From this point of view it is the greater reason to make a thorough and individual study of their principal features. With this class of work these are mainly resolved into porches, or entrances, bays, and windows. The ordinary plain type of brick arch, whether semicircular, segmental, or flat, can hardly be termed a satisfactory finish from an architectural point of view, to any window or doorway. In most cases it really has a very ugly appearance, without some sort of aid, either in brick or tile, or a combination of these two, such as illustrated previously for arch-work. This is one reason why, in plain work especially, roughcast structures invariably present a better

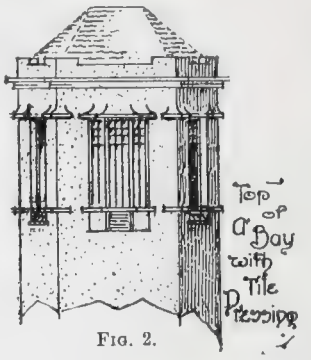


Fig. 2.

appearance. With such it is possible to pick out a few prominent positions with a little inexpensive tile-work in an extremely effective manner. In the sketch for a small bay (illustrated by Fig. 1) the tile is very

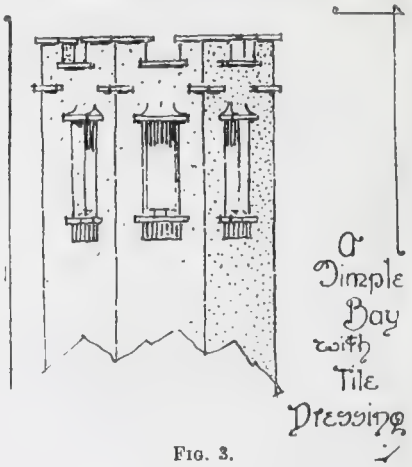


Fig. 3.

sparingly used, consisting merely of single-tile stringcourses, tile key-blocks, and sills, with single tiles to the openings at the bay top. Although this forms the simplest relief possible, with the rest of a building carefully

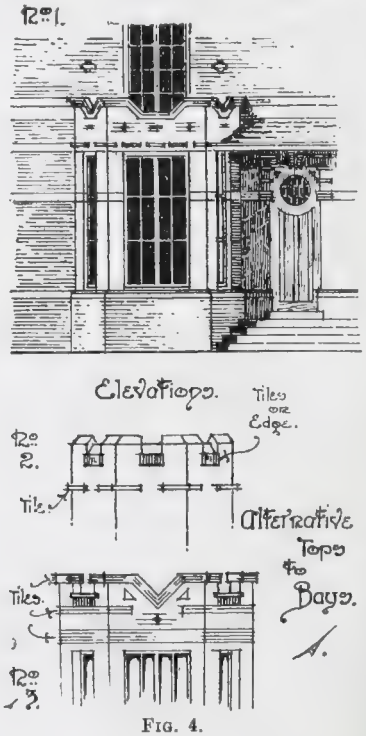


Fig. 4.

studied in a simple and uniform manner, due regard being given to correct proportion on the whole; the result is often far superior to that of lavishly-decorated buildings in other

and more costly materials. The bay window also invariably looks at its best as a single story structure, as shown. In this case large, or wide, windows, having narrow angle-pillars, produce a good effect. Bays of two or more stories, however, based on these principles, usually possess a very attenuated effect, which does not prove satisfactory from the point of correct design and propor-

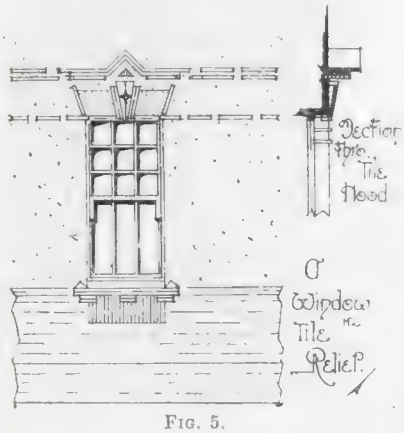


Fig. 5.

tion. Directly the bay approaches a more tower-like formation it is far more effective with broader angles, more after the style illustrated by the bay top in Fig. 2, the lower story, or stories, being treated in a similar manner, and a perfectly plain projecting base or plinth-course having a single-tile fillet introduced at the bottom. A broken horizontal course might be introduced with advantage in the centre or between each story. The curved roughcast and single-tile hoods and angles, as shown, give a certain amount of projection and shade without necessitating a heavy cornice-piece. In consequence, merely a light stringcourse is used in this position, formed with a couple of tiles, having a single-tile fillet well projected over. The roof might be finished with a blocking course and gutter, as depicted, or flush with the centre drop-pieces, which might either be weathered or tiled through, to throw off the water. The angles behind could be backed down with a little lead or cement. The roof could, of course, be taken down to the stringcourse and an ordinary gutter added, although this method has not such a good appearance. A little simpler, but nevertheless, an effective bay is that seen in

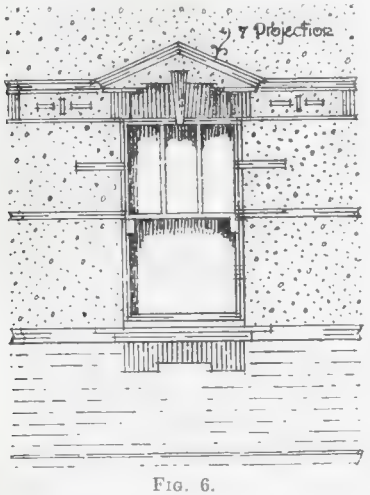


Fig. 6.

the succeeding example, Fig. 3. Any bay is far better for a little more such proportionate effect between the windows themselves and the wall spacing, when running in stories. As a rule this can usually be managed, too: when not the sole means of lighting a room, it is often possible to obtain other windows at the sides as well. A fairly broad window here, divided into separate lights of the same width as those to the bay, then forms a far better composition, there usually being a greater breadth of wall-space available, which then requires some such suitable consideration. Fig. 4 illustrates a little simple tile relief in combination with brickwork, as applied to the bay, consisting of tile-bands, tile-fillet to projecting base, a broken necking course, and a top coursing of tiles in ornamental outline to the blocking course. No. 2 on this figure illustrates another very simple, but pleasing, finish in brickwork, the top being finished with the ready-made pointed bricks. No. 3 also illustrates another simple but effective variation with a couple of pointed bricks slightly projected, forming small spandrels. A little bull-nose brick relief is also introduced under. The pantile can also be used with advantage for this type of open blocking course or parapet, instead of the straight, open chevron in the centre.

Larger windows, of the customary sash type, also admit of a little fresh design in tile relief, rather different from the customary methods in use. Fig. 5 illustrates a simple example. A slight tile-hood is formed in the stringcourse over the arch; a tile and bull-nosed brick key-block are used, and the arch is further picked out with a single tile at either end. The arch itself

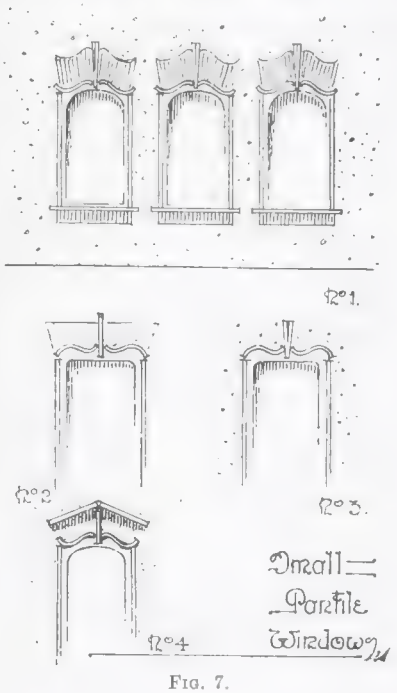


Fig. 7.

can be accentuated, as suggested, either by a finer finish of roughcast or by a slight projection. It usually has a better appearance, however, when treated similarly to the surrounding work and with a flush face. Tile aprons to windows also have a very pleasing appearance, making a good variation in brickwork as well. Another design for a window-head, of the open-pediment type, with a tile arch, is shown in Fig. 6. A very pleasing effect can be obtained in small windows of about 1ft. 6in. to 1ft. 8in. in width by the use of the pantile, as illustrated by No. 1 on Fig. 7. A tile reveal can also be used to the window, showing the narrow edging on face. The arch formed on the pantiles by flat tiles on edge, of course, follows the shape of the former, thus presenting a far more pleasing outline than the majority of arches of the customary type, as this design shows. Reversed patterns of the pantile are illustrated by Nos. 2 and 3 on the same figure. The better appearance is given by No. 3, without the arch itself being picked out or raised. A simple, single-tile hood-piece can be satisfactorily inserted over, either flat or pedimental in shape, as shown by No. 4. Small groups of these latter windows also, after the style shown by No. 1, would have a good appearance, when properly introduced with other corresponding tile relief. Another good system for small windows and the grouping of same is illustrated by the designs on Fig. 7. The disposition of a few single tiles, as shown, quite overcomes the customary objectionable appearance of the ordinary straight arch. Narrower tile edging the whole length of the sides, as indicated by the centre window, also forms a stronger and more pleasing relief when used in juxtaposition with windows having a slighter quoin relief, like the outer ones.

Sills formed by tiles on edge, as shown,

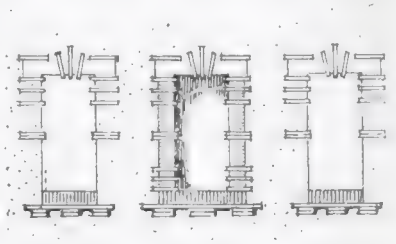


Fig. 8.

form another pleasing variation. The latter type of sill should either be weathered in cement, slightly notched into the frame, with a top V-joint, after the nature of detail No. 2 on the succeeding figure, or be provided with top lead-dressing taken under the frame and turned over the iron bar. This sheet of details (Fig. 9) illustrates various methods of constructing tile sills, the simplest form being that shown by No. 1, the customary oak sub and stone sills being dispensed with entirely. A concrete sill, flush with the wall-face, takes the place of the latter. The iron tongue is inserted before the concrete is perfectly set, and the frame backed down in a little good cement mixture, the front being notched to receive the tiling. If preferred, a cement angle-weathering can be inserted as shown by No. 2. In dispensing with oak and stone sills, it is possible to construct a window on better weather-proof lines with a little extra work, but still slightly less than customary methods, as shown by No. 3 and the further enlarged detail of same. The bottom of the frame, constructed as a sill-piece, is provided with a water-channel where shown, slightly sloped

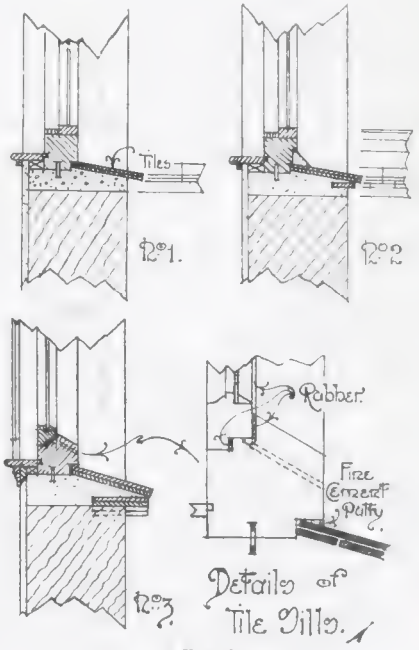


Fig. 9.

from the centre to either side. A couple of ¼in. holes are drilled through at each end at the slope angle, as indicated by the dotted lines, for drawing off any condensation which might possibly occur from time to time. A window of this type, treated with strips of rubber around, in the positions shown, is practically as wind- and water-tight as it is possible to be made. If the sides of the window are double-notched or rebated as

...ular manner to the bottom ... treated also with two rubber bars, ... really forms a more effectual and weather ... window generally than most forms of ... metal casement. Such points often ... special consideration, particularly on ... or other exceptionally exposed situations. Fig. 10 illustrates a few designs ... for bull's-eye windows or openings. This is ... useful type of window for many positions, either in the apex of gables or to introduce variety of design where only small windows, etc., may be required, such as a row running at an angle as side-lights to a flight of stairs, side openings to a porch with an open-front archway, or as small windows to larders, pantries, fuel-houses, etc. No. 1 of this set shows a fairly large ... with a tile hood-piece and small

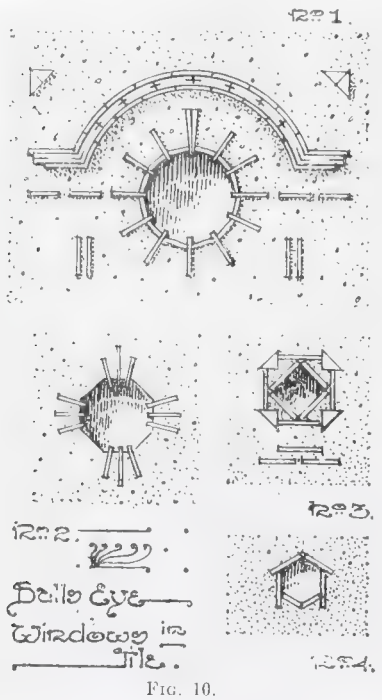


Fig. 10.

...padded angles formed with a couple of triangular bricks backed together. For most positions, though, there is no necessity to keep to the orthodox circular or oval patterns. It would be far better to introduce a little more variation here in shape or outline. The octagonal design shown by No. 2, treated alternately with tile keys, affords a very pleasing variation from so much circular or oval work in this feature. A diamond-shaped opening, or window, as illustrated by No. 3, forms another original method. The latter can also be turned on the diagonal, giving a central square opening. No. 4 also shows another small design which can easily be elongated to another type and grouped, if required. Pantile forms of the bull's-eye window are another feature possessing quite a large amount of good decorative qualities when carefully designed and set. That should be readily grasped from previous illustrations of this character in former chapters.

W. G. Kerry, Architect.

[The End.]

Royal Institute of British Architects.

The fourth meeting of the Royal Institute ... for the present session ... on Monday evening, Mr. George ... F.S.A., Vice-President, in the chair. It was announced that Earl Curzon ... had been nominated by the Council as an ... member.

Sale of Premises from Architectural Union Co.

The chairman, without comment, moved the confirmation of the following resolution, ... on the 1st inst.:

That ... the ... sold by the Land ... Limited to the ... of the Institute to the freehold and leasehold properties now vested in the Architectural Union Company, Ltd., or in the liquidator thereof, the Council of the Institute be authorised to join with the said liquidator, or otherwise, in giving to the present mortgagees such security for the sum of £4,000 owing to them as they shall reasonably require. And on the said liquidator transferring the said properties to the Institute, the Council be authorised to execute in favour of the present mortgagees such mortgage as the Council shall think fit to secure the repayment of the said sum of £4,000, with interest at the rate of 4 per cent per annum, in substitution for the said existing mortgage.

And that the Council be authorised to execute a second charge over the said properties in favour of the bankers of the Institute as security or part security for the overdraft authorised by the resolution passed and confirmed on March 13, 1911, and March 27, 1911.

This was seconded by Mr. William Woodward, and unanimously agreed to.

The Repair of Ancient Buildings.

A paper on this subject, illustrated by a few diagrams and about a score of lantern slides, was read by Mr. W. A. Forsyth. The author gave the leading provisions of the recently-passed Ancient Monuments Consolidation and Amendment Act, which he described as a cautious advance into the domain of private ownership in historic memorials, which had not yet reached finality. He hoped that the necessity would not arise for many years to come when cathedrals and churches would come within the range of authoritative preservation other than ecclesiastical. In Continental countries, where more comprehensive and stringent laws governed the preservation of ancient monuments, the methods of repair had been drastic in operation. He saw unmistakable signs that, by reason of the system of accounts, estimates, supervision, absence of personal responsibility, and other routine, the buildings under treatment by H.M. Office of Works and other departments had been receiving too much repair. The fundamental principle underlying the preservation of ancient work was that independent and sufficient treatment was required for each example. Danger lay in placing in the hands of great Government or ecclesiastical bodies the care and maintenance of these varied remains of the arts of past ages. The recommendations issued by the Institute in 1865, and enlarged in 1888, on the "Conservation of Ancient Monuments" and "Hints to Workmen," needed revision. This might be undertaken, the lecturer suggested, by the Art Committee, and, when done, the papers would make a useful addition to the curriculum of their Final Examination. Survey was an all-important duty of the architect employed to repair a building, and in many cases, as with doctors, it would be wise to call in a second opinion from a specialist. Frequently, on seeing a crack in a wall, the architect promptly decided upon underpinning, whereas fuller investigation would prove that the trouble arose from a roof thrust and transmitted wind-pressure. Plaster of Paris was a better material for tell-tales over fissures than cement, as it was not liable to expansion. Where possible, works of restoration should not be subject to limits of time or outlay. Grouting by mechanical pressure had been largely developed of late years by Sir Francis Fox, and had resulted in the preservation of many fissured walls in buildings and bridges. The lecturer dealt in great detail with questions of shoring, scaffolding, and underpinning, and, in conclusion, gave directions for the repair of rubble walling and decayed masonry. The preservation of stone by the application of solutions had much to recommend it, except the quality of durability. Liquid remedies claiming silica as their basis were, said Mr. Forsyth, liable to set up worse diseases. The aerating properties of the wall were arrested. Any dampness, therefore, lying in the wall or entering from other sources was liable to be the cause of expansions in cases of frost, and either the inner or outer faces were injured thereby. The process of limewashing appeared to avoid such risks.

Mr. Lionel Earle, C.M.G., Permanent Secretary of H.M. Office of Works, proposed a vote of thanks to Mr. Forsyth for his suggestive paper, and said that the generous praise given to the Ancient Monuments branch of his Department was fully deserved. This was largely due to the knowledge, training, and taste of the Chief Inspector, Mr. Peers, and to the remarkable skill, amounting, he might say, almost to genius, of Mr. Frank Baines, the architect in charge of the branch. It had been said that there was too much repairing of ancient monuments. That reproach certainly did not apply to the Ancient Monuments branch of his Department. Certain buildings, such as Holyrood Palace, Glasgow Cathedral, Chelsea Hospital, Somerset House, and Edinburgh Castle, had not hitherto been under their care. He had, however, now transferred some of these buildings to Mr. Peers' care, and was taking steps to effect the transfer of all such buildings as could be properly classed as ancient monuments, whether in the occupation of the military or of civil authorities to the care of Mr. Peers and Mr. Baines. The Ancient Monuments Consolidation and Amendment Act, 1913, had given them much-needed powers to prevent acts of vandalism. His department had been giving very careful thought to the constitution of the Advisory Boards to be created under that Act for England, Scotland, and Wales, and these were now practically completed. He believed that when the names of the eminent men who had agreed to serve were published, as they would be at no distant date, these boards would command universal confidence and respect. The question of the treatment of decaying stone, due to the presence of sulphuric acid in the air of large cities, had given them much anxiety. They had made numerous experiments, particularly in the Chapter-house at Westminster Abbey, with baryta water and other ingredients; but the results had not, he must admit, been satisfactory. This decay of stone was of far-reaching importance in relation to the preservation of ancient monuments, and he had persuaded the Treasury to give him a grant of money for one, two, or three years, to institute a scientific inquiry into this matter. He hoped to obtain the services in this connection of Professor Laurie, of Heriot-Watt College, Edinburgh. He had also moved the Foreign Office to inquire officially of the Governments of France, Germany, Italy, Greece, and America whether any scientist in those countries had ever evolved any treatment to combat this serious evil.

Mr. Thackeray Turner seconded the vote of thanks, remarking that they had reason to congratulate themselves on the present attitude of the Government towards repairs to ancient buildings, although he did not suppose that he should agree with all Mr. Peers's proposals. He endorsed Mr. Forsyth's suggestion that a second expert opinion should be called in to advise before an historic building was altered. It was shocking to think that our churches should be at the mercy of the average vicar and churchwardens, uncontrolled by better-informed people. For twenty-eight years he had been endeavouring to educate public opinion on this subject, and was glad to see the advance made. He held that no man ought to practise as an architect until he had had experience of practical work on a building. An old edifice was a work of art, an original erection, and no copy could be made to look like one; in fact, a restored building had lost its interest, and could not be otherwise than deadly dull.

Sir Francis Fox agreed with Mr. Forsyth's advice that an architect had to give a careful diagnosis before beginning repairs. He would say underpin a building until you have adequately secured the walls by shoring and timbering; then blow out all dust and rubbish from between loosened and fissured walls, and having thoroughly wetted the masonry, force grouting in under pressure. Then wait and watch the result, and if it is absolutely necessary, proceed to underpin in small sections. In almost every case, however, when the previous operations had been completed, walls, even if on poor foundations, would be so homogeneous that they would stand. He always made tell-tales of Portland cement, and they never cracked except where a fissure was widening; he could not endorse Mr.

Forsyth's recommendations of plaster of Paris. The lecturer's recommendation to call in a second or third expert opinion was a sound one; in any important work he would say, always associate an engineer with the architect.

Mr. Charles E. Peers, F.S.A., said the fundamental principles in repairs to ancient buildings should be not to injure the character and records of the fabric, and thereby impair its interest, and to make available for actual use. It was obvious that every repair must transgress in some measure the first rule, and those who would replace decayed masonry by insertions of tiles and rubble, or other material less noble than that originally employed, would receive no thanks from subsequent generations. A building in occupation must be so treated as to be perpetuated.

A vote of thanks having been carried with applause, Mr. Forsyth replied expressing his regret that the discussion had led to no agreement on fundamental points. He found that the Office of Works were too much inclined to anticipate the need for repairs in the buildings placed under their charge.

THE LONDON COUNTY COUNCIL.

At Tuesday's meeting of the London County Council an important scheme for linking up the Council's tramways was foreshadowed in a report by the Highways Committee, who stated that for some time past they had been impressed with the urgent necessity of linking up the existing dead-end termini and of otherwise consolidating the system. The effect of such a linking-up in the opinion of the committee would be to increase the flexibility and usefulness of the existing system, to extend the existing lines to proximate traffic points whereby the public convenience would be better provided for and the competition of other forms of traffic met on more equitable terms than at present, to facilitate further through-running arrangements with outside authorities, and to make it easier to reduce the crowding together of the cars on certain lines. Many schemes which are desirable for these different purposes have been put forward from time to time unsuccessfully, and it is felt that this lack of success has been partly due to the failure of the Council to submit to Parliament a comprehensive scheme of development which could be defended in its entirety as essential for the efficient working of the undertaking. It is therefore proposed to instruct the chief officer of tramways (Mr. Fell), the chief engineer (Mr. Humphreys), and the valuer (Mr. Andrew Young) to prepare a scheme for the consolidation and linking up of the system, and it is hoped that the first part of this report will be ready by the middle of February, in order that any scheme of development decided on thereunder may be included in the Tramways Bill for 1915. The report was adopted.

A scheme for the remodelling of nine large blocks of the Banstead Asylum at an approximate cost of £47,205 was outlined by the Asylums Committee with the object of permitting better classification and treatment of the inmates.

The Council decided, after discussion, to enter into a conditional agreement with the Liverpool and London and Globe Insurance Company, Ltd., in connection with the completion of the Mall to Charing-cross improvement, providing for the reinstatement of the company on a site fronting on Charing-cross and the Admiralty Arch approach.

In their half-yearly report on works executed by the double employment of labour, the General Purposes Committee stated that the total cost had been £326,321 10s. 7d., as against an expenditure of £242,734 13s. 3d. in the preceding six months. By far the largest item was the work executed on highways and bridges under the direction of the Highways Committee—£247,531 18s. 6d.

Plans for an underground station in Warwick-avenue, in connection with the London Electric Railway Company's extension from Paddington to Queen's Park were approved.

The Improvements Committee reported that the Dominions Site, Limited, has now taken up the agreement conferring on it, in consideration of the payment of £3,000 a year, an option for three years of taking up a lease for 99 years at a rent of £50,000 a year of the Crescent site between Aldwych and the Strand, or of purchasing the freehold on certain conditions for £1,300,000. The company has deposited a sum of £6,000 in respect of the payments under the option agreement for the second and third years.

The Improvements Committee recommended that the drawings submitted by the architects to the intending lessees for the elevations of buildings to be erected on sites at the south-eastern corner of Kingsway and Aldwych be approved, with certain minor alterations. One of the sites has been let to the Kingsway and Central Estates Company, Limited, on lease for 99 years, at a rent of £2,900 a year, and the other to the Kingsway Offices Company, Limited, for a similar term at a rent of £2,270 a year.

The same committee reported in July last in regard to questions raised by the decision of the House of Lords in the case of the "West Kent Main Sewerage Board v. the Assessment Committee of the Dartford Union and Others" that all sewers, whether overground or underground, are rateable, wherever the occupation of them is "valuable" within the meaning of the authorities dealing with rating, and the Council on that date decided to ask the President of the Local Government Board to receive a deputation from the Council with a view to ascertaining whether His Majesty's Government would introduce a Bill in the next session of Parliament to secure that all sewers below the surface of the ground shall continue to be exempt from rating; or, in the alternative, would afford facilities for the passing of a private member's Bill on the subject. The Local Government Board was accordingly approached, but it was intimated that, in the first instance, the President wished to be furnished with a statement in writing, indicating clearly the present position of the matter as it affects London. Two statements have accordingly been prepared—(a) a general one on the question, and (b) a special one relating to the question as it affects London, and these have been forwarded to the Local Government Board. The committee points out that the question is of very great importance to the Council and local authorities, and we understand that the corporation of Liverpool and other provincial authorities are in agreement with the views of the Council, and will support its action in the matter.

The question of the future site of the University of London was discussed on a recommendation by the Education Committee, "That the Council approve generally of the site of Somerset House as suitable, and that the Senate of the University be so informed." Mr. Joyce Thomas moved that the Council should not approve of Somerset House. The amendment was lost by 30 votes to 11. The chairman of the Education Committee accepted an amendment by Mr. Norman that the Council's approval should only be "on the assumption that his Majesty's Government will continue to be responsible as heretofore for such provision in respect of site and buildings as may be needed for the full extension and development of the University." Viscount Peel, on behalf of the Improvements Committee, moved that a site on the south bank of the River Thames, near to the new County Hall, should be substituted for the Somerset House site. The site on the south side was quite as advantageous, and it was infinitely cheaper. Lord Peel's amendment was defeated by 28 votes to 26. The Council then adopted the recommendation, and agreed to join with the Senate of the University of London in asking the Government to receive a joint deputation. It was also decided that if the Government would not agree to give Somerset House, the Education Committee should consider and report on the proposal to establish the University on a site on the south bank of the river.

Mr. H. E. Matthews has been elected president of the Manitoba Association of Architects for the ensuing year.

ENGLISH CHURCH ARCHITECTURE.*

The cult of Mediæval Architecture has declined during the past forty years, coincidently with the growth in popular favour of the various phases of Renaissance art, and at first sight it would seem dubious whether a sufficient demand exists for the publication of these two sumptuous companion volumes in quarto, appealing primarily to the lay student interested in the evolution of Gothic buildings. Examination of these admirably-produced books reveals, however, that Mr. Francis Bond has written a work which is a marked advance, in erudition and close reasoning, upon his "Gothic Architecture in England," issued eight years ago, which, while supplementary to that volume, unlike this one, treats the subject from an historical viewpoint. Only those who have striven to retell in popular language and novel style the familiar story of the development of Mediæval architecture in this country, and to propound the motives that actuated the builders in gradually modifying their arrangement of plan, their methods, forms, and materials of construction, and their treatment of details and ornamentation, can realise in any adequate fashion how successfully, and with what freshness and lucidity, Mr. Bond has grappled with the problems involved. In this new work, as in his "Gothic Architecture" and "Cathedrals of England," in his monograph on "Westminster Abbey," and his books on "Screens," "Fonts," and "Stallwork," we are impressed with the analytical powers of the author, the closeness of the reasoning, and the smoothness of the progression, combined with an assertiveness and dogmatism on points that are still moot which add a salt savour to his style.

Mr. Bond has been indefatigable in his study of the bibliography of a topic he has made distinctly his own; he has visited and revisited all the larger churches of this country and those of Western and Southern Europe; he has studied some thousands of architectural photographs of buildings and their details, and all the available sets of measured drawings and sketches, comparing one with the other, and seeking to ascertain from the wrought stones and timber the reasons for variations and developments; and he has refreshed his memory by frequent lecturing and writing upon the results of his observation.

The issue of all this accumulation of information has been to cause the author, as he frankly admits, to revise many of the conclusions arrived at in earlier years, and also to enable him to present his views in a clearer, better, and more carefully-reasoned fashion than in former volumes. There is an agreeable absence of dry-as-dust archæology in the statements of facts, and the student is never brought to a check by unexplained technical terms.

The progress of architectural photography and the amassing of sketches and drawings has rendered it possible to elucidate the subject with a copiousness of illustration that, taken in conjunction with the text, renders every reasoned statement and explanation of detail easy of comprehension to the dullest and least informed reader. Few of the 1,400 illustrations have been published by Mr. Bond in other works, and where a subject has been previously shown those now given are taken from a different point of view or are on a larger scale, or are reproduced by another process. Plan, full-page general photograph, detail, section, drawing, and diagram are interspersed, so as to afford pleasing variety, while elucidating the topics dealt with. Most of the illustrations are well selected as to aspect and are remarkably clear; there are, however, a few exceptions to the rule, such as the smudgy interior of Tewkesbury triforium (p. 760) and of Oxford Cathedral (p. 772). Among the drawings we recognise many familiar friends from Wicks's "Towers and Spires" and other non-copyright sources;

* "An Introduction to English Church Architecture, from the Eleventh to the Sixteenth Century." By Francis Bond, M.A., F.G.S., Hon. A.R.I.B.A. In 2 volumes, quarto. Cloth, gilt tops, 1908. 1,400 illustrations. £2 2s. net. London: Humphrey Milford, Oxford University Press, Amen Corner, E.C.

but they are welcome for purposes of comparison.

Examination of the fourteen chapters will show the large amount of new matter in these volumes. A great part of the work deals with the difficult and hitherto obscure story of the evolution of the parish church, as differentiated from monastic, canon, and collegiate churches. Mr. Bond dilates upon the great antiquity of our parochial churches, as compared with the vast abbeys and cathedrals. Not one of the latter class of edifice has a stone above ground earlier than the 11th century, whereas from the 3rd century of our era there were parish churches in the land, many built by British, some, possibly, by Roman converts. A few foundations recently disinterred e.g., at Peter



Fig. 1.—REBUILT NAVE ARCADE, SKIDBROOK CHURCH.

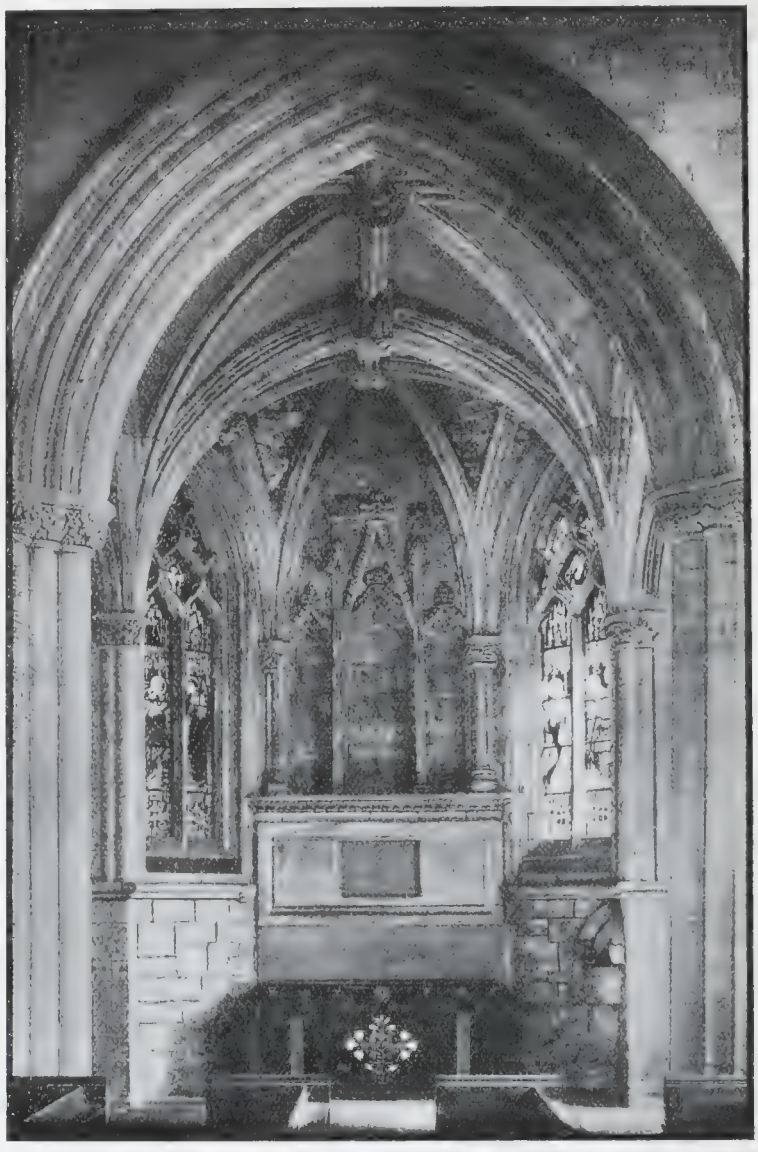


Fig. 3.—INTERIOR OF LADY CHAPEL PATRINGTON.

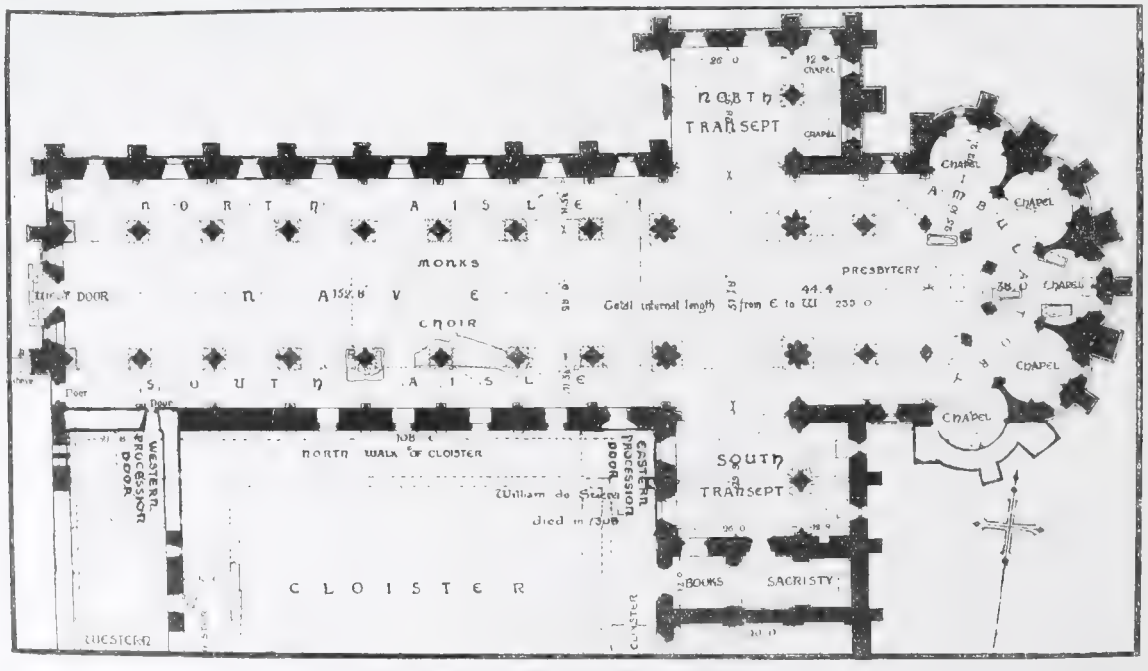


Fig. 2.—PLAN OF CROXDEN ABBEY.

borough, Rochester, and Romsey—represent the sum of our knowledge of the greater churches so vaguely described by Anglo-Saxon chroniclers. But in our parochial buildings a great mass of Anglo-Saxon architecture is still among us, some already identified, much more remaining to be found.

An interest peculiar to itself is that the history of the parish church must be gathered from its fabric, whereas the records of the monastic buildings were recorded by contemporary writers. In our cathedrals and abbey churches all the main questions of their history have been solved already, and, in the main, correctly. The story of the village church, except in a few instances, such as Catterick and Fotheringhay, has the

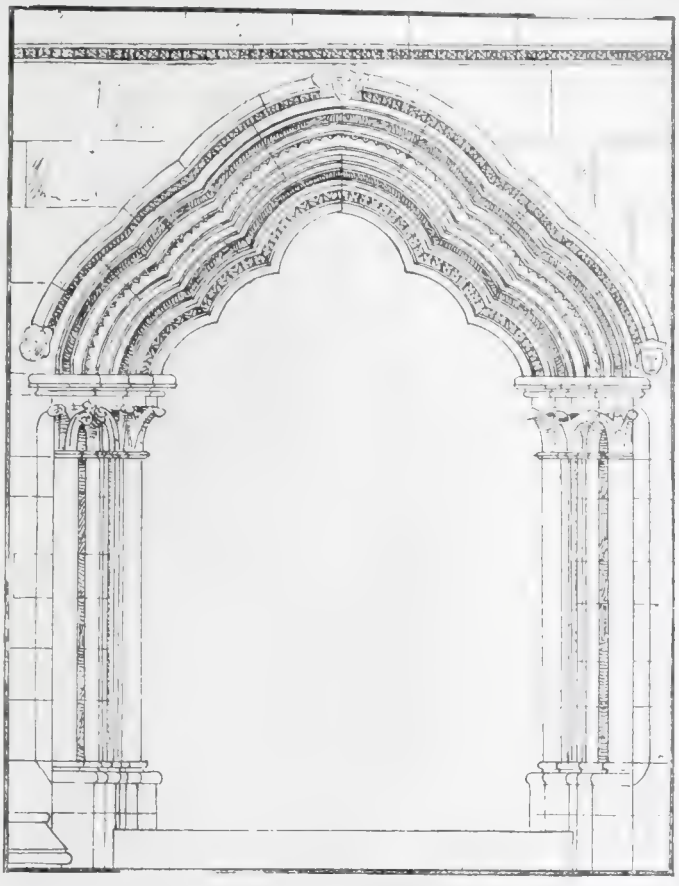


Fig. 4.—DOORWAY NORTH TRANSEPT, YORK MINSTER

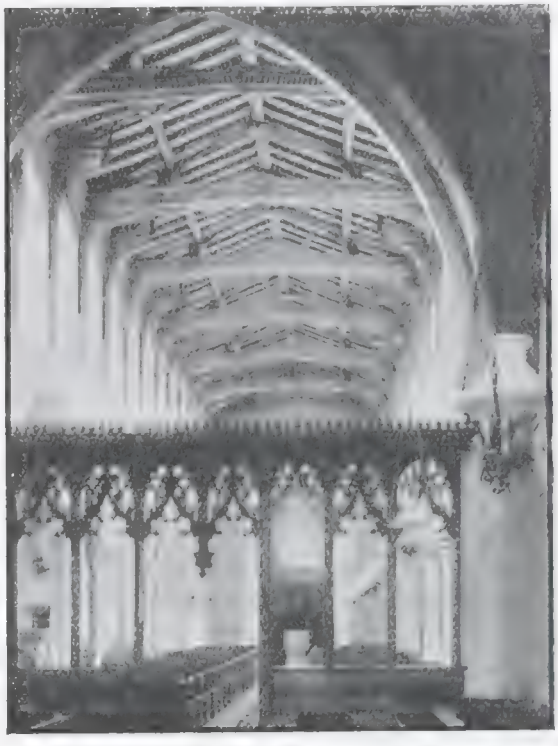


Fig. 5.—WALSHAM LE WILLOWS

freshness which is found only in original research, and almost invariably all the main features of plan and construction in a small way have been its own, unaffected by what was done in the Benedictine, Augustinian, or collegiate building. Every period is represented by a few churches of homogeneous character, unaltered by later Mediæval alteration or enlargement. The majority of our churches have, however, the charm of a fortuitous, undesigned picturesqueness, infinite in variety of type, both in planning and construction. The author points out that of all modes of increasing the accommodation of a church the most common was to rebuild the original narrow aisles on a wider scale. An aisle was often heightened for the insertion of tall windows, so as to provide more light, and then it became necessary to raise the arcade by a few courses, or to superpose a second capital, or to mount the original pillars on new and loftier plinths. At Skidbrook, near Saltfleet, in North East Lincolnshire, for example, as shown in Fig. 1, taken from a photograph by Mr. Bond in this book, by permission of the publishers, the Oxford University Press, a tall arcade having been built on the north side of the nave, the low 13th century piers on the south side were demolished and re-erected on higher plinths. More often an entirely new range of pillars and arches was built, sometimes in a different stone from that which had been employed in the walling. The nave was frequently lengthened, far more often to the west than to the east. The next growth to be noted was a lateral expansion by one or two transepts, carried out in order to provide chapels with altars. But the great extensions to our churches, great or small, were in the eastern limb, usually by simply lengthening the chancel, sometimes, however, by building a wider and higher one over the old structure, which was then more or less completely cleared away; and occasionally by the addition of a sacristy or chantry chapel on one or both sides. Besides these varied forms of horizontal growth, there was vertical growth, as exemplified in clerestory and in tower and spire. Where the nave was parochial and the chancel monastic, the eastern end was often afterward de-troved or reduced to a ruin. Central towers, where they existed, were a constant source of anxiety, and when they fell were very rarely reconstructed. Mr. Bond points out that there were numerous transplantations of doorways,

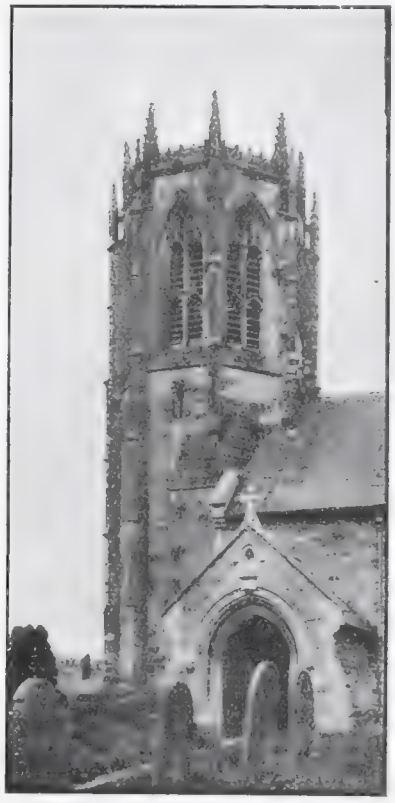


Fig. 6.—TOWER, SANCTON CHURCH.

windows, and pillars, which should be noted, lest we be led to erroneous conclusions. He urges that plans and views of a church before restoration ought to be collated and displayed upon every vestry wall. It is for him who would understand an ancient parish church to reconstruct in patient fashion the tale of its long existence, going back from century to century, from generation to generation, till he sees it as it rose, fresh and new, it may be, in Norman or pre-Conquest days."

We have summarised freely the contents of this chapter upon the planning and growth of the parish church, which is illustrated by some eight-and-thirty plans to large scale, because of its freshness of treatment and suggestiveness. Other chapters deal with the requirements of the greater Mediæval churches, and with the distinctive planning of churches for monks and canons. We reprint, as Fig 2, the plan of the Cistercian abbey of Croxden, near Rocester, Staffordshire, drawn by the veteran archæologist, Mr. Charles Lynam, F.S.A., F.R.I.B.A., of Stoke-on-Trent, who has carried out the excavations on the site. The abbey was built about 1190 or a little later; the plan is periapsidal, not of the usual Cistercian type, but based upon the normal French arrangement, as seen at Westminster Abbey, Hereford, at Valle Crucis and other churches of the Order, the western pavement doorway of the nave opened originally from the cellarium. One of the larger parish churches, rivalling many of the collegiate buildings in plan, even in grandeur, is the cruciform one of Patrington, in the East Riding, which has a slender central spire and eastern and western aisles to the transepts, but lacks a clerestory. Fig. 3, from a photograph by Mr. Cecil Gethen, of Hereford, illustrates the interior of the Lady-chapel at Patrington, c. 1340, which projects from the eastern wall in the south transept of this grand church.

The chapter devoted to the subject of vaulting describes the lierne form in detail and gives a description of fifty-seven typical English vaults. In the following chapter the various methods of abutment by which church roofs were prevented from thrusting out the walls are explained and illustrated by diagrams. Another section furnishes particulars of the flintwork tracery and panels so largely used in the 15th century in East Anglia, and the timber-built churches to be found in Cheshire and Lancashire. A [illegible] of capitals,

Early Gothic, of foliage with long stalks, in the West of England, hitherto little noticed, is described and illustrated in another chapter. Among the illustrations to the chapter on doorways and porches is one of the cinquefoiled doorway into the north transept of York Minster (Fig. 4), from a drawing by Mr. J. Ludworth; it is covered with minute and richly-detailed ornament. The fine interior of Walsham-le-Willows Church, midway between Elmswell and Finningham railway stations, West Suffolk, is illustrated in Fig. 5; the chancel screen and tie-beam roof (formerly supported by figures of angels) are both of the 15th century, and retain traces of the original colouring. The church, by the way, was ruthlessly restored in 1874, and again in 1899, and lost frescoes and other interesting features in each operation. An informative chapter deals with the development of towers and spires. Our last illustration (Fig. 6) shows the octagonal tower at Sancton, Market Weighton, taken, like the previous half-tone, from one of Mr. Bond's photographs.

Every author realises the impracticability of securing absolute accuracy in the text, especially in that of a first edition. Mr. Bond's work has been revised, we are informed, by Mr. A. Hamilton Thompson, Mr. F. T. S. Houghton, Rev. R. A. Davis, and the Rev. G. W. Saunders, but even then a few printers' errors have escaped notice—e.g., on p. 270 an internal view of the nave of Leominster is named "exterior"; in fact, the set-back upper Late Norman wall pierced by a clerestory seems to have originally been an external one, until, at a later date, the low and narrow aisle was opened out to the church. The third diagram on p. 293 shows the ploughshare vaulting at Southwark Cathedral; but there is no mention of Southwark in the accompanying description of such vault construction on pp. 292, 298, or 301, although it is credited to the text on the latter pages in the index; the name has possibly been omitted in a slight condensation to fit the make-up; and the village church of Ickford (p. 558) is in Bucks, not Oxon., and, indeed, it appears in Vol. I. of Buckinghamshire in the "Historical Monuments" series. A lapsus calami occurs on page 902, where the date of the Bell Harry Tower at Canterbury is stated to have been somewhere "between 1495 and 1503," whereas as far back as 1902 the contemporary chronicle of John Stone, monk, of Christ Church, was printed by the Cambridge Antiquarian Society, demonstrating that the first stone of the steeple was laid for Prior Moleash on August 4, 1433, although it was not completed until the time of Prior Selling, 1472-94.

Two glossaries, one giving French equivalents for English terms, the second providing English synonyms for French terms, are novel features of the book which will prove of great utility to students. The Index-Locorus and Index-Recun are very full, and have been carefully compiled.

We have said enough to show that the volumes mark an epoch in the literature of English Gothic, and will prove invaluable to every architect and ecclesiologist, as well as to the non-professional student of architecture, for whom they are primarily intended.

THE ARCHITECTURE OF PORTUGAL.*

(*Continued from page* 821, *last issue.*)

COIMBRA.

Another monument of the Manoelino style is the church of Sta Cruz at Coimbra. It is relatively sober, and shows no traces of Oriental influence, but resembles rather a French or Flemish flamboyant work, and is remarkable chiefly for the beauty of its fittings and contents, its tombs and tile linings. Its western choir gallery contains a magnificent series of stalls, richly carved and gilded, probably the work of Flemings. Above the canopies is a frieze of reliefs, representing the adventures of Vasco de Gama in India, with a crest of foliage. In the choir are the tombs of two earlier kings re-erected by Dom Manoel. They are probably designed by a Portuguese, and are a not extreme example of Manoelino Gothic, with some Renaissance sculpture and ornaments by French craftsmen, among who were Master Nicolas and Jean de Rouen. The latter also made the lovely marble pulpit in the nave, and some even more refined but rather damaged monuments in the cloisters. The organ is a very happy specimen of Renaissance work of the later 16th or early 17th century, richly carved, and glowing with gilding and vermilion. It shows the effective favourite arrangement of pipes in a horizontal position common both in Spain and Portugal.

BELEM.

One of the noblest works of Dom Manoel's reign is the Hieronymites Church at Belem, on the Tagus, in the outskirts of Lisbon, and which is certainly one of the most remarkable in Christendom. Externally, there is something in the appearance of the golden white crystalline limestone of which it is built, and which closely resembles marble, and in the enriched doorway and windows sparsely set in a large expanse of plain wall, which calls to mind the Cathedral of Como, while internally the soaring columns and the broad spaces of mysterious gloom, shot through with rays of tinted light, inevitably suggest the Duomo of Milan. The work, which was erected in commemoration of the discovery of the sea route to India, was begun in 1498, with Boutaca, a Portuguese, as architect. He was succeeded in 1511 by Lourenço Fernandes, and the latter by John of Castile in 1517, said to have been a Biscayan. About this date, too, the Frenchmen, Master Nicolas, and John of Rouen, also arrived upon the scenes. The external features are finely conceived and delicate in workmanship—Manoelino Gothic in their general lines, with Renaissance ornament. Internally, the wonder of the church lies in its vaulting. The aisles and nave are of equal height, about 90ft., and there are no arcades or transverse ribs, but the vaulting ribs spring direct from the top of slender octagonal piers and radiate in all directions, like those of English fan-vaults; but, contrary to English practice, the fans do not touch or intersect, but are connected by spaces of what is really barrel-vaulting, though it is stiffened by surface ribs. The transept, which is 95ft. long and 65ft. wide, and is undivided by piers, has a vault soaring even higher than those of the nave, and yet this mighty vault is so scientifically constructed that it stood firm where Lisbon was rocked to its foundations by the historic earthquake of 1755. The sacristy, chapter-house, and other monastic apartments, as well as the cloisters, are likewise vaulted in a great variety of ingenious and beautiful systems. The cloister has a curiously Indian look, and suggests the court of a Raja's palace rather than a place of meditation for Christian monks. The strangely ornate tracery of the lower arcade is set back under the shadow of deep arches, which, at the angles, bridge two bays diagonally. The faces and sides of the piers, as well as the soffits and spandrels, are overloaded with arabesques and carved ornament. The garden in the centre was originally laid out in a star pattern of tanks lined with brilliantly-coloured tiles.

The very charming cloisters of Belem were almost the Swan Song of Manoelino art, but we cannot leave it without a reference to one of its most curious and extreme examples which occurs in the Templars' building at Thomar. When this order was abolished in 1314, and in other countries its wealth was appropriated to Royal uses, Dom Denis the Labourer adopted a wiser course. He transformed it into the Convento of Christ, "for the defence of the faith, the discomfiture of the Moors, and extension of the Portuguese monarchy," and its wealth and prowess were used for the exploration and colonisation of Africa and India. The group, which crowns a hill above the town and river, contains a number of buildings of different periods and of great interest. Among them is the sixteen-sided church already referred to. This was enlarged under Dom Manoel by the addition of a rectangular building containing a nave and chapter-house by John of Castile, between 1505 and 1517, when he removed to Belem. His work in the two places is very similar, but after his time a further addition was made, Ayres do Quintal, which, for the extravagance and originality of its features, has no parallel. Their composition is almost indescribable in words. One window in particular invariably disgusts the beholder at first sight; but a closer study of its riot of branching and twisting leaf garlands, its crowns and chains, knotted ropes, and knobs of foliage, reveals not only an extraordinary skill in execution, but also a distinct decorative sense. These strange enrichments are, for the most part, clearly confined within a rectangular boundary, and tell in the strong southern light, amid the surrounding spaces of bare wall, in the same way as the bold heraldic panels so frequently seen on Spanish façades.

THE EARLY RENAISSANCE

hardly survived the contemporary late Manoelino style. We have seen several specimens of its internal work, and the doorway of the College of St. Thomas at Coimbra shows an external feature in the same manner. One of the cloisters at Thomar is a good example of the Palladian phase of the later 16th century. A fountain in the court of the municipal buildings at Oporto may serve as an illustration of the lighter work of the 17th.

BUILDINGS OF THE BAROQUE STYLE.

The succeeding Baroque appears in many forms, few of which are as extreme as the Churrigueresque Church decoration at Oporto, which we saw earlier on the Torre dos Clerigos in the same town, begun in 1755 in commemoration of the great earthquake. The great Palace of Mafra, built between 1715 and 1730 for John III., under a Bavarian architect named Ludwig, is a relatively sober design, and though its detail and features are coarse and perverse, it attains real dignity by sheer size and fine proportions of its masses. Of the Fonte Grande at Leiria, which seems to date at least in part from the Baroque period, it will be admitted that it forms a picturesque setting for the equally picturesque water-drawers, with their amphoræ of Classic form. The library of the University at Coimbra, with its enfilade of arched openings, and the sacristy of the cathedral of Oporto, with its painted walls, marble tables, and splendid array of walnut presses with brass fittings, are both examples of interiors of stately proportions and rich colouring. Like the Escurial, Mafra comprises a convent and a church, as well as a Roya lresidence. Its buildings form a rectangle of about 800ft., with domical pavilions at the angles and the domed church in the centre of the façade.

THE DOMESTIC ARCHITECTURE OF PORTUGAL

has, as a whole, little to commend it to attention. The general run of houses, both in town and country, is singularly lacking in picturesqueness of form or beauty of decoration; but in being built of materials harmonising with their surroundings in a manner suitable to the climate, and to be devoid of meretricious ornament or ill-conceited attempts at architectural treatment, they possess qualities that are in themselves no inconsiderable merits. The houses are squarely built, commonly without recesses or projections, pierced with square openings, and covered with low-pitched roofs. The usual roofing material is the so-called "Italian," or "pantile," of a reddish-brown colour; the broad eaves are supported by a kind of cornice formed of several courses of similar tiles corbelled one above the other. Steeper roofs are not unknown, but they are so rare as at once to attract attention. The buildings of the University of Coimbra, for instance, perched in the most delightful situation in the world at the highest point of a hill city, and overlooking the romantic windings of the Mondego, are greatly enhanced in effect by roofs as steep as those of an old German "rathhaus," and covered with tiles that were once coloured and glazed.

Wrought-iron hooks of more or less orna-

* By W. B. Wood, M.A., F.R.I.B.A. A paper read before the London Architectural Association on the 8th inst. (See illustrations and plan in our last number.)

mental design are often used at the lower angles of hipped roofs to keep the hip tiles in position. The angles, cogins, and the dressings of doors and windows are sometimes in masonry of the plainest possible description. But, apart from this, the houses are built of brick and rubble, covered with colour-washed plaster, white, blue, and mauve being the favourite tints. In modern times glazed tiles have also come into frequent use as external wall covering. The only other class of ornamental features besides those already mentioned, consists in the pretty balconies which often jut out from upper stories. Their stone or marble floors are of every imaginable curvilinear or rectilinear shape, and are moulded on the edges and carried on corbels; while their wrought-iron balustrades are also of very varied design, the uprights being carried up so as to connect the balconies of two or three stories. Here and there houses in the smaller towns are rendered picturesque by their external staircases with sloping roofs, and country houses which rise a little above the rank of cottages or farmhouses occasionally indulge in verandahs formed by projecting the roofs some distance beyond the walls and supporting them on stone columns.

THE SASH-WINDOW IN PORTUGAL.

In spite of the general southern look of houses, such as those described, the Englishman in Portugal cannot help being struck by their possessing one familiar feature which is almost unknown in every other Continental country except Holland—viz., the sash-window. We got it from Holland, and whether Holland got it from Portugal, or Portugal from Holland or from us, or all three from somewhere else, seems uncertain. The Portuguese sashes are often of a primitive kind, without sash-lines fixed at the top, and requiring to be propped open with sticks. There are usually four panes in the width and four in the height, and the window giving rather a squat appearance in many of the houses of Oporto, they are surmounted by a moulded and dentilled transom and a glazed panel with an arched and radiating pattern of glazing about it. One more Portuguese peculiarity remains to be mentioned, though not strictly architectural—the practice of paving the open spaces of the cities with mosaic patterns formed of small pieces of black-and-white stone, such as the roly-poly square of the British tar in Lisbon, with its wavy lines, the Place at Oporto with its radiating ones, or the humbler market-place of Leiria, with its lozenge pattern.

THE OLD MANOR HOUSES OF YORKSHIRE.*

In many respects, which architects will appreciate, this volume is distinctly above the average of its class. The ground is new, for the most part, to begin with. Comparatively little has been written about the old halls and manor houses in the part of the country dealt with, and although many are mentioned in guides, periodicals, and in topographical works dealing with certain districts, there are numerous interesting and beautiful old houses which have entirely escaped attention, largely due no doubt to their inaccessibility. This is particularly the case with regard to the West Riding, which is by far the richest in good and characteristic specimens of such buildings, of a style peculiarly their own and with features not found elsewhere.

Mr. Ambler, moreover, has done his work in the right way, describing and illustrating all the types of houses throughout the county in a systematic manner, including all kinds of dwellings, large and small, erected before 1700 A.D. (only omitting castles built for defence and now in a more or less ruinous condition), and thus showing the development of domestic architecture in the three Ridings, and illustrating the variety of types characteristic of the different parts of the county, as far as possible in chronological sequence. Many of these Yorkshire houses differ in style from those of most other counties, and contain unique features and interesting peculiarities.

The illustrations include 137 examples on 91 plates in collotype and half-tone, from photographs specially taken, with 20 plates of measured drawings and over 130 illustrations in the text from photographs and drawings. If in many cases we could wish some had been to a little larger scale, it must not be forgotten that the number of illustrations is most generous. Not only are general views of houses given, but numerous comparative examples of gables, doorways, windows, gateways, carved panels, etc.; and many interiors of the houses are shown, including halls and their screens, staircases, chimneypieces, and decorative plasterwork, while brief but interesting descriptions are given of almost every house.

The practical architect will appreciate the fact that the large number of measured drawings, most of them lent by architectural students, illustrating completely some of the houses and portions of others, have nearly all been redrawn, under Mr. Ambler's personal supervision, the elevations being shaded to show the projections, and the style of the draughtsmanship being uniform. Numerous sketches of details, also drawn to scale for the purpose, are included. The ordinary reader will no less rejoice that the correct delineation and true photographic representation of the houses as they actually exist at present will form a permanent authentic record of these buildings, sufficiently interesting in themselves to need no tricks of draughtsmanship to set forth their attractiveness.

The book in every way deserves the success we hope it will attain. It is the fruit of much research and intelligent labour well applied, and merits a hearty reception.

* The Old Manor Houses of Yorkshire, by Louis Ambler, F.R.I.B.A. London: B. T. Batsford. £1 15s.

OBITUARY.

Mr. Robert Douglas Sandilands, F.R.I.B.A., a well-known Glasgow architect, died on Thursday in last week at his residence in Pollokshields. A native of the Upper Ward of Lanarkshire, Mr. Sandilands settled in Glasgow nearly forty years ago. After serving six years in an architect's office, he went to Paris with the view of gaining further experience, and studied under the late Professor Guadet. He spent five years on the Continent, chiefly in Paris, but making many excursions to other cities. On his return to Glasgow about a quarter of a century ago, he started in business with Mr. John Thomson, a son of the famous "Greek Thomson." The firm of Messrs. Thomson and Sandilands have been responsible for many important buildings in the city and in the West of Scotland. Among them are Gartloch Asylum, Stobhill Hospital, Govan Town Hall, and the Glasgow Parish Council Offices. Mr. Sandilands was a member of the Merchants' House and a Past Deacon of the Incorporation of Masons. He had been since 1906 a Fellow of the Royal Institute of British Architects, and was vice-president of the Glasgow Institute of Architects.

M. Roger Marx, the well known art critic, died on Sunday in Paris. M. Marx was born in 1859, and throughout his whole career was in the service of the Department of Fine Arts, of which he had for some time been Inspector-General. To him was due the organisation of the sections of Modern French Art in the Exhibitions of 1889 and 1900. He was an authority on modern art, and had published several books on the subject, including "Les Médailleurs français au XIXième Siècle," Les Médailleurs français contemporains," "Les Pointes Sèches de Rodin," and "Rodin, céramiste."

Mr. Maurice G. Warns, of Bugle, Cornwall, has been appointed surveyor and inspector of nuisances to the Fowey Town Council.

A contract has been signed between the Government of Eucador and a representative of Messrs. J. G. White and Co., London, for sanitation works at Guayaquil. The works include water supply, sanitary- and rain-sewers, and paving. The contract involves a sum of about £2,000,000

COMPETITIONS.

COVENTRY TECHNICAL INSTITUTE. Members and Licentiates of the Royal Institute of British Architects must not take part in the above competition, because the conditions are not in accordance with the published Regulations of the Royal Institute for Architectural Competitions.

NEWCASTLE-ON-TYNE.—As the result of a competition, in the adjudication of which the Rutherford College committee, Newcastle-on-Tyne, were professionally assisted by Mr. Edwin Cooper, F.R.I.B.A., of London, it is announced that the best plans for the extension of the college are those of Mr. W. H. Knowles, F.S.A., F.R.I.B.A., Collingwood-street, Newcastle, and that he has been awarded the premium, and will carry out the work.

ROSEBERY AVENUE. The Metropolitan Water Board on Friday approved an estimate of £1,600 in respect of the closing of the Round Pond at New River Head, in connection with the preparation of the site of the new central offices which it has been decided to build on the board's land in Rosebery-avenue, and authorised the general purposes committee to select six architects to be asked to prepare competitive plans for the buildings "on strictly economical lines," and to appoint a professional assessor to advise on the conditions of the competition and on the designs submitted. The architects are to be instructed that the buildings are to be erected at a cost not exceeding £80,000, and to arrange, if reasonably possible and practicable, to incorporate or rebuild the Oak Room and the room adjoining in the new building. Consideration of the question of the accommodation to be provided was adjourned, but in the report prefatory to the recommendations, it was stated that it was not suggested to house at the central office any of the district staffs with the exception of that of the Northern District—at present accommodated there, nor to make provision for the Water Examination Department, now housed in Nottingham-place, Marylebone. It is proposed that the new building shall be erected on the site of the existing offices and of the Round Pond, this giving an adequate frontage to Rosebery-avenue, and enabling convenient arrangement in connection with the ultimate development of the remainder of the site. The recommendations were only approved after a long discussion. Mr. Tozer moved that the committee be instructed to bring up a further report giving figures, and information as to whether more complete centralisation could not be achieved. The amendment was rejected by 14 votes to 9.

The cost of the scheme of extension which is recommended for the infectious diseases hospital at Milton, Portsmouth, is £28,000. 84 additional beds, a new nurses' block and other improvements are to be provided.

The Orsett Rural District Council are about to carry out a scheme of housing for the working classes at West Thurrock. The architect is Mr. F. J. Winter, M.S.A., of Heygate-avenue, Southend-on-Sea, who recently executed a similar scheme for the adjoining rural authority of Billericay.

There has been erected over the north gallery of Renfrew Parish Church a stained-glass window, the gift of Dr. James Robertson, of Sydney. The subject of the window was chosen to be in harmony with that of the M'Laren memorial window in the chancel, and depicts the phase of the Resurrection of Christ when He makes Himself known to Mary Magdalen in the garden. The artist is Mr. Anning Bell, of London, and the makers are Messrs. Guthrie and Wells, of Glasgow.

Princess Louise, Duchess of Argyll, recently opened the new Health Institute for the borough of Hampstead, which has been built in Kingsgate-road, as a memorial of King Edward VII. Kingsgate House has on the ground-floor on the south side a suite of six rooms, including a bacteriological laboratory. In the basement will be the School of Domestic Economy for girls and mothers. On the first floor will be the quarters of the Children's Clinic of the Council of Social Welfare and of the Mothers' Welcome of the Hampstead Health Society. The architect is Mr. Alan E. Munby, M.A., F.R.I.B.A., of Old-square, Lincoln's-inn.

PROFESSIONAL AND TRADE SOCIETIES.

ROYAL INSTITUTE OF BRITISH ARCHITECTS. We have received the following:

9, Conduit street, W., Dec. 12, 1913.

Dear Sir, The signatories of the accompanying notice would be much obliged if space could be found for the notice in the columns of the Building News this week.—Yours faithfully, G. Northover.

To the Associates of the Royal Institute of British Architects.

REGISTRATION.

Proposals of the Council of the R.I.B.A.

We have arranged for an informal meeting of Associates, to take place at the Royal Institute, for exchange of views relative to the Council's proposals, now before the members of the Royal Institute. The meeting will be held in the Great Gallery of the R.I.B.A. on Tuesday, December 30, at 7.30 p.m., and all Associates interested in the question are cordially invited to be present.

Robert Atkinson,
G. L. Elkington,
K. Gammell,
Edwin Gunn,
E. Stanley Hall.

ART AND CIVIC LIFE.—A lecture under the Ogden Trust was given at Ramsbottom on Friday night by Mr. Walter Butterworth, of Manchester, on "Art and Civic Life." Mr. Butterworth said our large towns were ill designed, and this was largely due to the average Englishman's love of freedom and his dislike of official interference. He did not believe it was necessary that towns should be not only ill-designed but ill-built, smoky, and dirty, and in many parts insanitary. He believed selfishness was very largely behind it all. He was not one of those theorisers or dreamers who wanted to see things beautiful but would not see the difficulties in the way. He had given nine years of the best part of his life in honestly striving to deal with those very difficulties as a member of the Corporation of Manchester. It was not, however, by attending to merely practical details in a narrow way that they would bring about reforms, but by education, public libraries, and art galleries. Art was the one thing that gained immortality. What would be left of Manchester and Salford in a hundred years? Personally, he was glad to believe there would not be very much—it was too ugly to have immortality; it was well it should be swept away. The vast mass of houses, workshops, and chimneys would be cleared away; only what was really artistic and beautiful would remain. Modern conditions would only be altered by cultivating a love of art.

ARCHITECTURAL ASSOCIATION OF IRELAND.—At a meeting of the above association, held at the rooms in Fredericklane on December 11, Professor W. A. Scott, A.R.I.B.A., in the chair, a lecture on "Modern French Architecture" was read by Mr. P. Cart de Lafontaine. In the course of his lecture, which was illustrated with lantern slides, the lecturer dealt with the historical aspects of French architecture, and mentioned that the present School of the Beaux Arts in Paris was the descendant of the Academy of Painting, Sculpture, and Architecture founded by Colbert in 1648. The history of the succeeding period was briefly sketched, the lecturer pointing out the notable characteristics of modern French architecture, as shown by the buildings of the last two centuries and the principal French cities. The variations of style were, he said, almost as considerable as was the case in this country and in England. The earlier period of the 18th century was succeeded by an age of architectural archæology, which, in turn, gave place to native art, in which was to be found a close approach to the principles of the earlier French architecture. The lecturer next dealt with the buildings of modern times, and showed illustrations of the various types. Addressing himself to the practical side of present-day architecture in France, he said the two great institutions which exercised a strong influence on the style and character of the buildings were the Société Centrale and the Societe des Architectes Diplomés. A vote of thanks was passed to the lecturer, on the motion of Mr. Caulfeild Orpen, R.H.A., seconded by Mr. Harold Brittain. A discussion followed, in which Messrs. J. H. Webb, R. M. Butler, F.R.I.B.A.; Henry Hill, A.R.I.B.A., of Cork; H. G. Leask, and others took part. The president announced that Mr. T. R. Hudman had rejoined the association, and referred to the recent election of Mr. R. Caulfeild Orpen as president of the Royal Institute of the Architects of Ireland. The honour was of peculiar interest to the A.A.I. as Mr. Orpen was their first president, seventeen years ago. The announcement was received with loud applause.

BIRMINGHAM ARCHITECTURAL ASSOCIATION.—Mr. Lawrence Weaver, F.S.A., gave a lecture on "Leadwork" at a meeting of the Birmingham Architectural Association, held in Exchange Buildings, on Friday evening. The president (Mr. G. Salway Nicol) was in the chair. In the course of discussion Mr. Holland W. Hobbiss insisted on the importance of preserving old leadwork, and reminded the audience that there was one old lead-head in Birmingham—he referred to the one in High-street. He suggested that on behalf of the association he should write to the landlords calling attention to this lead-head and asking if nothing could be done to preserve it. The meeting unanimously adopted the suggestion.

THE CORINTHIAN ORDER.—The ornate Corinthian Order, which was used only on the mainland of Greece, was the subject of Mr. Banister Fletcher's lecture at the British Museum on Thursday in last week. As to the name of the Order, it might have been derived from the tradition that a certain Callimachus, of Corinth, worked in a metal known as "Corinthian bronze." The theory that the anthemion necking of the Erectheion capitals was the embryo of the elaborately floriated capital does not allow for change in shape and increase in height. Mr. Fletcher traced this bell-shaped capital, masked in tiers of curving acanthus-leaves, to Egyptian prototypes at Karnac and Philæ. One broken capital in the Temple of Apollo at Bassæ (430 B.C.) is the earliest trace of this Order which influenced all subsequent architecture, for it persisted through Romanesque, Gothic, and Renaissance, and is still used both for art and commerce. The Greeks employed it chiefly for smaller buildings, such as the monument of Lysicrates and the Tower of the Winds at Athens.

EDINBURGH BUILDING TRADES ANNUAL DINNER.—The Edinburgh, Leith, and District Building Trades' Association held their annual dinner in Ferguson and Forrester's Restaurant, Princes-street, Edinburgh, on Thursday night in last week. Mr. William Forrest presided over an attendance of about a hundred. Messrs. James Crowe, D. A. Angus, and Edward Bruce acted as croupiers, and among others present were Treasurer Lorne MacLeod, Edinburgh; Bailie Finlayson, Leith; Mr. Adam Currie, Mr. A. Lorne Campbell, F.R.I.B.A.; and Mr. F. H. Lightbody, F.F.S. The chairman said that the building trade during 1913 had been somewhat better than last year. There had been a considerable amount of work in the city and neighbourhood, and many members of the association had had considerable contracts from various country districts. The demand for picture houses and public and semi-public buildings was the cause, to a great extent, of any better conditions that had pevailed. The property market was still stagnant, and ordinary house property was not being built. What was already built was practically unsaleable, unless at ruinous prices. The depreciation in value of property still continued, and this at a time when they were told that the country was booming. He could not help feeling that one of the special causes of the depression was the amount of burdens, local and Imperial, placed upon the building trade and upon property. House property could not be built at anything like the price of former years. The prices of material and wages had both gone up. Builders were agreed that the interest was great to have better-trained apprentices and more efficient workmen, and they would do all they could to help forward the movement initiated in this connection by educational bodies in the city. Their own associaton had been making rapid progress during the year. Their membership had been greatly increased, and they had practically all the builders in the city on the roll. Mr. J. Carrick proposed the toast of "The Corporations of Edinburgh and Leith." Treasurer Lorne MacLeod, Edinburgh, in replying, said that undoubtedly during the last ten years the building industry in Edinburgh had been in a far from prosperous condition; but the same thing prevailed all over the country. One of the reasons for the decline locally, he thought, was that Edinburgh was largely overbuilt. This accounted very largely for the unusual amount of unlet property, which, however, now showed a substantial decrease. As regarded the future, with the increased cost of wages and material, and the higher rate of interest on money, he saw little prospect of much further building by private enterprise in Edinburgh at the present time. Property as a form of investment had lost its attraction, owing to the better rates of interest on high-class securities which now prevailed. Bailie Finlayson replied on behalf of Leith Corporation. Mr. John Macdonald, president of the Glasgow Master Wrights' Association, proposed the toast of "The Edinburgh and Leith Building Trades' Association," and the chairman replied.

GLASGOW INSTITUTE OF ARCHITECTS.—The quarterly general meeting of the Institute of Architects was held on the 11th inst in the secretary's chambers, 115, St. Vincent-street, Mr. A. N. Paterson, A.R.S.A., president, in the chair. The secretary reported the proceedings of the council with regard to the matters dealt with since the previous general meeting. The following were the principal items:—(1) Laying out of the Cathedral Square; (2) correspondence with the town clerk in regard to proposed new bridges over the Clyde and the Kelvin, and alterations at the Tron steeple and new tramway shelters, and with the clerk to the parish council in regard to new buildings for Chryston Epileptic Colony; (3) the appointment of Messrs. George Bell and Alexander Wingate as representatives on the architectural department of the Royal Technical College; (4) correspondence in connection with the drawing up of a form of contract applicable to Scotland generally, with adjustment of the relations between the various trades concerned, with the Faculty of Surveyors, the Building Trades' Employers' Council, the Building Trades' Exchange (Ltd.), and the Scottish Building Trades' Federation.

GREEK ARCHITECTURE.—Mr. Theodore Fyfe, F.R.I.B.A., of London, lectured before the Manchester Society of Architects on Wednesday week night on "Some Aspects of Greek Architecture." The lecturer began by tracing the progress that had been made in research on Greek and kindred subjects during the last fifteen years, and then proceeded to illustrate in some detail two phases of Greek architectural expression that had especially appealed to him. The first was the exterior of the great Asian temples, especially the later temple of Diana at Ephesus, and the second the interior of the finest type of Attic structure, illustrated by the Parthenon at Athens. With regard to the temple of Diana, he referred to the restoration proposed by Professor Lethaby, and showed its æsthetic value and the magnificence of its scale and craftsmanship in a series of lantern slides. On the subject of the Parthenon, he spoke of the effect of its exterior sculpture being transcended by the image of the goddess in the interior, whose rich and splendid workmanship embraced in itself all the architectural parts of the building, giving the final note to the whole conception.

THE LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY.—A general meeting

of the above was held at the Leeds Institute, Thursday, December 11. Mr. G. Fredk. Bowman occupied the chair. A paper, illustrated by lantern, was given by Mr. T. E. Eccles, F.R.I.B.A., of Liverpool, the subject being "A Holiday in the Val d'Aostoa" (Northern Italy). The route described extended from Martigny by way of Orestere and St. Bernard's Pass, over the Alps, and down the Val d'Aostoa, by way of Ivrea, Biella, Orofa, Vezelay, Novara, and finishing at Dijon. The slides depicted many excellent compositions from a pictorial point of view, and included examples of architectural work of a high standard. The meeting was well attended, and concluded with a hearty vote of thanks to the lecturer by Mr. G. W. Smithson, A.R.I.B.A., seconded by Mr. H. S. Chorley, F.R.I.B.A., and carried amidst generous applause.

THE ROYAL INSTITUTE OF THE ARCHITECTS OF IRELAND. The 74th annual general meeting of the above body was held at the Institute Rooms, No. 31, South Frederick-street, Dublin, on Wednesday, the 10th inst. The president, Mr. A. E. Murray, R.H.A., F.R.I.B.A., occupied the chair. The following Fellows and Members attended: Messrs. F. Hayes, E. H. Morris, J. Holloway, R. Stirling, C. A. Owen, G. C. Ashlin, C. H. Ashworth, R. O'Brien Smyth, J. Geoghegan, P. L. Dickinson, G. Beckett, C. H. Mitchell, R. Caulfeild Orpen, vice-president; Professor Scott, hon. treasurer; and F. G. Hicks, hon. secretary. The scrutineers of the ballot for the election of president and vice-president, to serve for the ensuing three years, submitted their report. The president declared Mr. R. Caulfeild Orpen, R.H.A., Fellow, elected president of the Institute; and Mr. W. Kaye-Parry, M.A., Fellow, vice-president. The scrutiny of the ballot for council disclosed the following result: C. H. Ashworth, L. O'Callaghan, J. H. Webb, Frederick Hayes, C. A. Owen, A. G. C. Millar, G. P. Sheridan, G. L. O'Connor, and C. J. MacCarthy. The hon. secretary read the report of council for the year 1913. Mr. C. H. Ashworth, in moving the adoption of the report, said it chronicled the progress and prosperity of the institute. The influence of the council had, on several occasions, been used to the benefit of its members. He touched on the subject of the housing problem. He feared that the commercial condition of Dublin made the problem a very difficult one to solve. He noted the changed conditions of membership of the institute, and he urged the younger members to support this examination as the gate of entry to the institute. This examination was established mainly with the view of affording an incentive to students in Ireland. Mr. G. C. Ashlin seconded the adoption of the report. Mr. O'Brien Smyth and Mr. R. Stirling supported the adoption of the report, which was passed unanimously. The following members were raised to the rank of Fellowship and presented with certificates: Messrs. Lucius O'Callaghan, H. Allberry, L. A. MacDonnell, P. J. Lynch, A. G. C. Millar, and Professor W. A. Scott. Mr. Robert Stirling and Mr. E. H. Morris were elected auditors for the ensuing year. Mr. J. Geoghegan was nominated by the Architectural Association of Ireland to represent that body on the council of the institute. Professor Scott, hon. treasurer, submitted the financial report of the institute. The accounts showed a substantial credit balance. Mr. Robert Stirling proposed the adoption of the report. Mr. C. A. Owen seconded. He pointed out that the overdraft at the bank, which was now extinguished, had been raised some years ago, when the building in which the meeting was being held was purchased by the council. The report was adopted. The president proposed that a very old and valued Fellow, who, owing to failing health, had tendered his resignation, be elected an honorary member of the institute, which was approved. The president read his valedictory address, and, in returning thanks, congratulated the members on the results of the two recent competitions which showed that Irish architects are capable of designing buildings which will be a credit to our country. He also referred to the high marks obtained at the examination for studentship, which presages a high standard of qualification in the coming members. He then placed on the table the loving-cup, originally presented to the late Sir Thomas Drew by this institute, and lately bequeathed back to the institute by his widow. The cup having been lined with a suitable material, it was handed round the table, and the health of the president-elect was drunk by the members. Mr. Orpen responded, and desired to be allowed to propose the health of Mr. Murray, the outgoing president. Mr. Owen seconded, and the toast was drunk with musical honours.

SCOTTISH NATIONAL BUILDING TRADES FEDERATION. — A special general meeting of this federation was held in Dowell's Rooms, Edinburgh, on Friday afternoon. Mr. William Forrest, J.P., presided over a large attendance, delegates being present from the following centres:—Edinburgh, Glasgow, Aberdeen, Inverness, Kilmarnock, Airdrie, Coatbridge, Paisley, Ayr, Helensburgh, and Kirkcaldy. An important forward movement in the organisation of the building trade has for some time been under consideration, and at the meeting yesterday a new constitution was formally adopted. The office-bearers under the constitution are:—President, Mr. William Forrest, J. P., Edinburgh; vice-presidents, Mr. Lyall, jun., Aberdeen Federation; and Mr. Spittal, Glasgow Master Wrights' Association; secretary and treasurer, Mr. Thomas Ferguson, solicitor, 123, George-street, Edinburgh. A board of directors representative of the various districts was appointed. The board was empowered to negotiate for the adoption of universal conditions of contract for all trades and for uniform rules for the drafting of schedules of quantities and the measuring of finished work for each branch of the building trade. The chairman expressed great satisfaction that the inauguration of the new movement to secure the united action of the Building Trades Associations of Scotland in promoting and advancing the general interests of the Scottish building trades had received so widespread support.

THE SURVEYORS' INSTITUTION.—Two strong committees, representative of the whole of England and Wales, have been set up by the Council, for the purpose of considering in detail the land policy of the Government, as outlined in the Prime Minister's speech of December 9. The Council have found that the condition now governing the Institution scholarships, which require Institution scholars to enter into articles with a member of the Institution on the completion of their University course, bears hardly upon persons of comparatively limited means. They believe that men with the first-rate technical education their scholars have received might expect to enter good offices as improvers without premium, and they have therefore decided that the Institution scholars shall only be required to enter into an agreement to enter the office of a surveyor approved by the Council, with a view to practising as a surveyor in the future. Mr. H. S. Morton, who gained the Institution Scholarship at Cambridge University in 1908, and afterwards entered the office of Mr. Charles Bidwell, Past-President, has been appointed Assistant Bursar at King's College, Cambridge. The balloting papers for the election of a member of Council to fill the vacancy caused by the lamented death of Mr. H. Herbert Smith, will be issued before Christmas. Mr. J. H. Sabin has been nominated to represent the Institution on the Agricultural Education Committee set up by the Board of Agriculture. The Council have again granted the use of the lecture-hall to the Central Chamber of Agriculture for their meetings during 1914. The Council have voted the sum of 100 guineas towards the cost of the new laboratories at Rothampstead, which are to be erected in commemoration of the Lawes and Gilbert Centenary. The cost of the laboratories is estimated at £12,000, and the Development Fund Commissioners will, it is understand, find half that amount if the remainder is provided by private subscription.

TOWN PLANNING. — Mr. P. Abercrombie delivered a lecture to members of the Sheffield Society of Architects and Surveyors at Sheffield University, on Dec. 11, on "The Architectural Aspect of Town Planning." After a brief allusion to examples of Roman and Renaissance town planning, the lecturer remarked that the comparison of Renaissance town planning with ornamental gardening was significant, for there could be little doubt that the influence exercised by gardening on town planning was really great. All the features were evolved in gardens before they became the stock-in-trade of the town-planner. The earliest piece of "popular" town planning in Europe was represented by the Champs Elysées at Paris, which was originally purely a drive through the park for the French King to approach his private garden. When one called to mind the gorgeous effects of the avenues of Paris one was astonished to realise how many of them were purely garden features. Of more purely architectural conceptions the most notable example was the Place de la Concorde. The Rue de Rivoli represented the most autocratic control that had ever been exercised architecturally over a modern street. Of less architectural importance, but of considerable interest, was the town planning of the west end of Berlin carried out by Frederick William I., about the year 1730. The Unter den Linden was a Royal garden or park feature incorporated in the town. The plan prepared by Wren for the rebuilding of London avoided the architectural errors both of Berlin and Washington. He did not think any man had produced a better plan in many respects than Wren's plan; it was better than a good many Continental ones. The housing sequel to architectural planning was not manifest during the slow and sedate growth of the 18th century, but with the sudden industrial development of the 19th century, and in Germany particularly since 1870, it had had disastrous effects. The density of population per inhabited house in Berlin was extraordinarily higher than it was in London, Paris, Liverpool, and Sheffield. The traffic salvation in the English industrial towns had been found in the old country roads, which had given at least some lines of guidance in the building of the towns. The lecturer said that with the passing of the Town Planning Act a new era had opened for the future of English town development. If the architectural profession was left out in this matter, he thought the profession was itself to blame. Housing, too, was drifting out of the hands of the architects, and he thought for the sake of the country in general it was a pity that architects had not some say in the matter.

The Devon County Council, at their meeting at Exeter, approved plans for building a sanatorium for consumptives at Hawkmoor, at an estimated cost of £18,000

Mr. William Jones, of Neath, retired railway and public works contractor, who recently died at the age of 75, left estate valued at £14,407 gross, with net personalty £2,160. The testator left his plans and business documents to his son, William Gordon Jones.

Messrs. Pauling and Co., Limited, of Victoria-street, Westminster, have obtained a contract for building a railway from Shasi, on the Yangtsze, through Chang-teh, Yuenchau, and Kwei-yang to Sing-yi-fu where it will connect with the line for which the French have obtained a concession. A branch line is to be built from Chang-teh to Chang-sha.

A tower and spire, which will be the loftiest in Ireland, is being added to the cathedral of Queenstown. The cathedral was designed by Messrs. Pugin and Ashlin, and begun over forty years ago, Messrs. Michael Meade and Son, of Dublin, being the contractors, and the materials used were Dalkey granite and Cork limestone. Recently important additions, including new sacristies were completed, Mr. J. Maguire, Cork, being the contractor. The cathedral architect for many years past has been Mr. G. C. Ashlin, R.H.A., the surviving member of the original firm, and now of the firm of Messrs. Ashlin and Coleman, of Dublin.

Building Intelligence.

CLARENDON-STREET, N.W.—Princess Christian opened the new buildings of the Magdalen College Mission in Clarendon-street, Euston, on Tuesday. The premises have a frontage to Clarendon-street with a larger gymnasium block behind a small courtyard. The two buildings are connected by a fireproof staircase. The ground floor of the front building is occupied by a committee room. Above these are two stories, each containing a clubroom and a reading-room. The gymnasium is 60ft. long, with a gallery at one end and a platform at the other. The upper part of this block is occupied by a clubroom and a reading-room. At the end of the block is the chapel accommodating seventy persons, built in a simple phase of the Italian Renaissance; it has a white plastered dome with vaulted compartments round it, carried on four detached columns of stained wood. On one side there is a recess for an organ. The frontage to the street is faced with red brick of two shades, the only decorative feature being the coat of arms of Magdalen College carved in the brickwork below the central window. The architect is Mr. Ronald P. Jones, L.R.I.B.A., of Stone's-buildings, Lincoln's Inn. The cost of the buildings, including site and furniture, has been £5,500.

GLASGOW.—The new premises of Lady Glenorchy's parish church, Edinburgh, were opened on the 10th inst. The church, which occupies the site of the old one, is designed in a Scottish form of Late Gothic. There are three aisles, divided by stone pillars and arches. The front is lighted by five traceried windows of varied character. A gallery is introduced, and at the pulpit end a semi-octagonal stone-vaulted apse is designed, to secure the maximum amount of light. The roof of the church is arched and moulded and carved in pitch-pine timber. The furniture is of Austrian oak, and the pews are of Japanese oak. The interior walls are finished in stone. The architect is Mr. Macgregor Chalmers, of Glasgow, and the outlay on church and suite of halls and offices adjoining has been £20,000.

GRESHAM-STREET, E.C.—The new and enlarged buildings of Gresham College in Basinghall-street were opened by the Lord Mayor and Sheriffs on Monday. The new college has a frontage to Gresham-street of 71ft. and to Basinghall-street of 58ft., and an area of 3,574 square feet. The lecture-hall and gallery accommodate 430 persons. The hall measures 68ft. by 40ft., and is lined throughout with oak. Provision is made for cinematograph apparatus for use in the lectures. The building has cost about £34,000. The fronts are of Portland stone, and all the carving has been done by Mr. Gilbert Seale. Provision has been made in the building for the offices of the City and Guilds of London Institute and the Guild of Freemen. The four stories above the lecture-hall have been let as offices to City firms. The contractors are Messrs. Holloway Bros. and the architects Mr. Dendy Watney, F.S.I., surveyor to the Mercers' Company, and Mr. Sydney Perks, F.S.A., the City Surveyor.

HURST PARK.—The fine grand stand, burned down by Suffragettes in June last, has been rebuilt on a larger scale and at an outlay of between £3,000 and £4,000 more than the insurance money received. The new stand, together with the steps, is of ferro-concrete, with the exception of the roof, which is of wood. Chairs have been abolished and are replaced by velvet cushions laid directly upon the steps. A most novel feature is a glass-enclosed gallery running from end to end, with views both back and front. For members there are a luncheon room, 63ft. by 39ft., and a grill-room. The grill-room is also 38ft. by 39ft.

THETFORD. The town council of Thetford has built on three acres of land next Bury road fifty cottages for the working classes. The accommodation in every case is as follows: Entrance lobby, out of which the stairs lead, living-room, kitchen, stove, larder, coal-closet, also three bedrooms and store on first floor. A cooking range is fitted in the living-room, and in the kitchen a sink, heater stove, and copper, over which a patent hood is fixed for conducting steam into a flue. Each cottage has an enclosed yard and garden at the rear, the fronts being formed with grass margins between the road and cottages. The cost per cottage works out at about £135, which includes the roads, sewers, drains, fences, and paths, but not including land, and, after allowance for repayment of loans, insurance, repairs, empties, in accordance with the Local Government Board's schedule, the cottages are self-supporting at an average rental of 3s. 8d. per week. Mr. Stanley J. Wearing, A.R.I.B.A., of 15, Upper King-street, Norwich, was the architect, and Mr. E. Clark, of Melton Mowbray, the builder.

THOMPSON, NORFOLK.—Further restoration work has been carried out in connection with the ancient collegiate church at Thompson. The church has been trenched all round, the cavity being lined with concrete, so as to act as a drain. On the north side the cornice stones and the flint work were found to be in a very bad condition, while on the south side a great deal was in decay in a lesser degree. All this is being made good. Inside the large Perpendicular window of the chapel has been renovated, retaining as much as possible of the old glass. The arms of Shardilow, in a shield of painted glass, presented by H.H. Prince Frederick Duleep Singh, have been inserted in the window just above the spot where the remains of Sir Thimas Shardilow, the founder of the church, lie. Another window on the south side will be entirely renovated, while the remainder will be repaired. After this work is finished, the porch is to be taken in hand. The old lead roof, as well as that on the chapel of St. James, is to be recast and the woodwork renovated.

Mr. Thomas Cole has resigned the secretaryship of the Institution of County and Municipal Engineers after thirty-three years' service in that capacity.

The Wandsworth Borough Council have under consideration a proposal to widen the bridge in the High-street spanning the London and South-Western Railway. The estimated cost is £6,000, towards which the railway company offer a contribution of £875.

Mr. A. W. Brightmore, an inspector of the Local Government Board, held an inquiry at Warwick on Friday in reference to a proposal of the town council to borrow £8 000 for the purpose of sewage disposal The inquiry was attended by Mr. Dodd, of Birmingham, the engineer of the scheme.

At Harrogate, Major J. Stewart, R.E., has held a Local Government Board inquiry respecting the application of the Harrogate Town Council for sanction to borrow £7,000 for works of sewerage and surface-water drainage, including the execution of works in the townships of Plumpton, Starbeck, and Spofforth.

At the last meeting of Stafford Town Council, a long discussion took place on a recommendation by the housing of the working classes committee that the borough surveyor be instructed to prepare a scheme for the erection of 40 working-class dwellings to rehouse the occupants of insanitary premises. Eventually the recommendation was unanimously adopted.

Professor Dante Vaglieri, the well-known archæologist, whose name will always be connected with the excavation of Ostia, died suddenly at Ostia on Sunday morning, at the age of forty-eight. He had just passed the proofs of the first guide-book to Ostia. Professor Vaglieri, who was a native of Trieste, had previously worked at Palestrina and on the Palatine Hill at Rome.

A new Baptist Sunday-school, on a site at the bottom of Front-street, Consett, was formally opened on Friday. The designs were prepared by Messrs. Geo. Baines and Sons, of London, and harmonise with the church adjoining, which was built at a cost of £3,340 six years ago. The school will involve a further outlay of £1,600. Messrs. Ayton and Sons, of Blackhill, were the contractors There is accommodation for 300 children, and the interior is arranged on the partition principle, there being six separate classrooms. The building is of red pressed bricks with stone facings.

Currente Calamo.

As we said on this page in our issue of November 21 they would do, the House of Lords, on the appeal of the Metropolitan Water Board, last Friday, upheld the decision of the Divisional Court and the Court of Appeal against them that water used in connection with luncheons served at a City public-house was employed for "domestic" purposes, and, therefore, could not be charged for outside the ordinary rate of 5 per cent. on the rateable value of the premises. Total abstainers may take comfort and call for their favourite beverage without fear of causing the publicans and restaurant-keepers to pay extra rates for the water. Doubtless their reluctance to do so in the past has been the sole cause of their excusable unwillingness to place it on the tables! As a rule, though not always, they are assessed at higher rates, according to their trade value—and that, of course, is the point which decided the judgment against the Board; but that is not the concern of their customers.

We hope this little loss of revenue will not dictate too "strictly economical lines" to the six architects who are to set to work on the competitive plans for the Board's new central offices at New River Head, Rosebery-avenue. The site is a fine one, and eighty thousand pounds is none too large a sum. It is true it seems only intended to house the central staff at present; but extensions are certain in the future, and it might prove truer economy to bear that in mind. The present buildings seem hardly likely to lend themselves readily to incorporation into any really good design. Might one suggest that as the Round Pond is to be filled up, and the rest of the space thus reclaimed is hardly likely to be wanted for some years—perhaps never—it might, temporarily, at any rate, be laid out as an open space without incurring any great cost. In that crowded centre of the town any breathing ground is well worth preserving.

"With great respect," Mr. Alan S. Cole points out in the *Times*, that the "Ceramic" Gallery, with its twelve remarkable columns of English Della Robbia ware, now being demolished, was not, as Mr. Blomfield and his colleagues seem to apprehend, designed for, nor did it house, the "glories of Middle Victorian pottery." The collection housed in it was quite otherwise. The exhibition to which the "Ceramic" Gallery is to be devoted is, according to an announcement by the Minister who is responsible for the Museum and education generally, that of the well-known "Jones Bequest," and this, as Mr. Blomfield and his colleagues should have realised, includes many paintings and works of art besides "works of art of the time of Louis XIV. and Louis XV." The "leading artists, architects, and amateurs" in their memorial to the Prime Minister, prayed that "the future careful guardianship of these architectural and decorative works may be secured," and concerned themselves with no other circumstances. Having quite recently returned from Paris and its suburbs, Mr. Alan S. Cole "is impressed with the fact that such acts of 'vandalism' as occurred there to the damage of public buildings are due conspicuously to Communards, Jacobins, and the like, and that the Government of the country at different times have, as far as possible, made good the cruel damage."

Sir George Birdwood, who was instrumental in securing the Jones Collection, incisively remarks that it is quite a miscellaneous collection of French furnitures, of French and Oriental china, and of oil paintings, Italian, French, and English, and French historical miniatures of the most dazzling beauty, and there are appropriate places for it in more than one division of the Museum, where the architectural surroundings would set it off to the finest effect. Why should the old gallery be dismantled and then rehabilitated for its accommodation? That is the crucial question before the public. As to the twelve columns themselves, they certainly were, as Sir George Birdwood says, the work of good and sound English craftsmen, and are excellent examples of the ceramic art of their period, and for this reason alone should be preserved in a Museum which was founded not only for the exhibition of the choicest specimens of the industrial arts of the world, but of types of them illustrating the history of their gradual evolution—particularly within the United Kingdom, and during the Mid-Victorian period. Only recently, as Mr. John Eyre reminds us in the *Times*, a protest was made against the obliteration of the ceilings by Hugh Stannus in the same Museum, and it would appear that the present policy is to make a clean sweep of already existing decorations, regardless of their educational value and also of the taxpayer, who is called upon to find the money for these costly experiments. Next, we suppose, the decorations of the staircase by F. W. Moody and the refreshment rooms will be found out of harmony with the present fare offered!

Mr. Mallaby-Deeley, who has been the central figure in some previous big property deals, including the Piccadilly Hotel for £500,000, the site of St. George's Hospital for £460,000—with a view, it was said, to the erection of a £600,000 hotel—the St. James's Court property at Buckingham-gate for £250,000, and who is promoting the Railway Bill against which Finchley and Hampstead are up in arms, has bought the nineteen acres of which Mud-Salad Market is the centre, of the Duke of Bedford, for a sum which is said to be anything from three to nine millions. When John Russell, Earl of Bedford, got it from the Crown in 1552, the property was valued at £6 6s. 6d. a year. Probably no such compact site in London offers more possibilities of profitable development. Whatever form they may take, we hope the new owner will do something to abolish the eyesore which the market has been for many years under the Bedford ownership, and that there, or elsewhere, "improvements" may be made with a little more consideration for those evicted, as we were, in 1883, from Tavistock-street, to make room for the elegant additions to the market on the north side which for a generation have spoiled the neighbourhood.

We take little exception to the good-tempered remonstrance of Mr. Bertram Mackennal, the Australian sculptor, at the Authors' Club dinner last Monday night. To some extent it is true, as he said, that sculpture in our times, and especially in this country, appears in the guise of a divorced woman. Right back in civilisation, and all through the centuries, she was the happy wife of Architecture, contented to adorn the one who supported her. Mr. Bertram Mackennal does not know who came in to spoil this perfect marriage, but he thinks it was due to the new great industries which grew up everywhere during the Victorian era, when, the richer the world grew, the less interest it took in sculpture. The result to-day is, he says, that an architect designs niches and pedestals on and about his buildings, and knows they will never be filled or occupied. Most of them were never intended to be otherwise than barren. Whenever Mr. Bertram Mackennal sees these barren niches he always thinks the sculptor has a good case of breach of promise against the architect, and he hopes sculptors in the future may get heavy damages for this breach, or, happier still, a restitution of conjugal rights. To all of which the architect, perhaps may reply, "Don't you know it's not my door you are knocking at?" as Ethel remarked to Clive Newcombe. When the architect has provided the niches it is hardly his place to fill them, much as he would like to see his work completed.

The improving trend of Scottish opinion on the Sabbatarian question was well shown on Monday at Edinburgh. At a meeting of the Scottish Society of Antiquaries, Dr. Hay Fleming moved that the Antiquarian Museum should not be opened on the Sabbath, and that the Council of the Society should consider the advisability of opening on the evenings of other days in the summer. Mr. W. T. Oldrieve, H.M. Office of Works, seconded. Lord Guthrie (son of the Rev. Dr. Thomas Guthrie), moving in favour of Sunday opening, said opening on Sunday from two to four in the winter and two to five in the summer would not interfere with arrangements for public worship. Due provision would be made for the attendants getting a full day of rest in seven. Dr. Fleming's view, he said, was that anything secular was not to be looked at or talked of or thought about on the Lord's Day unless it was absolutely necessary for health and comfort. That was a perfectly intelligible position, but it was an Old Testament rather than a New Testament one. Lord Guthrie's motion was carried by forty-three to twenty-four.

The proposed connection of the Lancashire and Cheshire communities by means of either a high-level bridge or of a tunnel, in addition to the railway tunnel, is being locally discussed, with a promise of good fruit. The city engineer (Mr. John A. Brodie), who alike at Liverpool and at Delhi has a full grasp of possibilities, suggests both the bridge and a duplicated, if not a triple, tunnel. He has, it is suggested, at the back of his mind an underground system extending far into the city of Liverpool and into Wirral, while the bridge, at two levels, would complete the scheme of intercommunication which a great port demands. As regards the transportation of merchandise between Liverpool and the manufacturing centres of Lancashire, Yorkshire, and the Birmingham district, the city engineer at present is silent. He will doubtless be found ready with a scheme, possibly a combination of railway, canal, tramway, trackless trolley, and motor road, when called upon for a report. The Liverpool dock road certainly offers a splendid highway for goods transport, and the beginning of a system capable of limitless continuance.

At Wednesday's meeting of the St. Pancras Borough Council the recommendation of the Parliamentary and general purposes committee to prepare a scheme for the reconstruction of the present town-hall, was adopted. The committee will now proceed to confer with the Guardians, who are equally interested, and propose then to engage an architect to draft a scheme for the consideration of the council. The inadequacy of the present town-hall has been patent for years, and we hope the present disposition to improve matters will have a more fortunate issue than past efforts. It will be remembered that a scheme for a new town-hall was approved in 1892. A competition was arranged, and sixty designs were sent in, which we reviewed in our issue of February 3, 1893. Mr. John MacVicar Anderson, F.R.I.B.A., then the President of the Royal Institute, was the assessor, and he assigned the first place to Mr. William Harrison, of Cannon-street; the second to Messrs. Gibson and Russell, and the third to Messrs. Malcolm Stark and Rowntree, of Glasgow. We illustrated the selected design in our issue of May 5, 1893. An attempt to upset Mr. MacVicar Anderson's award failed. Ultimately the project was abandoned, and subsequent endeavours to revive the erection of a new town-hall, or to extend the present one, have proved abortive.

The case of Devonshire House and the Undeveloped Land Duty has, so far, ended in what is practically a drawn game, without establishing any useful principle, and as each side partly failed, they must pay their own costs. But Mr. Justice Scrutton finished by cheerfully giving everybody leave to appeal against everything, and we shall doubtless hear a good deal more of the matter until it is run to death in the House of Lords. The claim was for Undeveloped Land Duty at the rate of a halfpenny in the £ on site value, under the Budget of 1909. The point raised was as to how much of the land could be called undeveloped, and so taxable under the Act. The Referee had ruled that the land on which the house stood, and such land immediately adjoining as was necessary to its enjoyment, was developed, and, in addition to that, he gave the duke one acre of land under Section 17 of the statute. On appeal, Mr. Justice Scrutton held as developed land the ground on which the house stood, and also the courtyard, or curtilage. But he decided that the Act could not be so construed as to give an acre, as the Referee had ruled, but only gave the owner so much further land as was essential to the enjoyment of the house, and which would include some of the land at the back of the house. Without plans this cannot be made plain. But the judgment, as far as it goes, gave the duke his courtyard and some back-garden, the whole being part of the one acre mentioned, and left him taxable upon the site value of the remainder.

Mr. Marshall Harvey, jun., acting surveyor, has been appointed surveyor to the Milton Regis Urban District Council.

Plans by Messrs. Everard, Son, and Pick, of Millstone-lane, Leicester, have been adopted for a permanent church to be built on the site of the temporary church of the Holy Apostles, Leicester.

Mr. E. D. Sedding, of Plymouth, has reported upon the condition of the 13th-Century tower of the parish church at Padstow. He says that £300 ought to be spent at once on repairs, as it is in a bad state.

In the inner hall of the Privy Purse entrance to Buckingham Palace there has just been hung, by command of the King, a large painting by John Charlton of a Royal procession passing through Trafalgar-square.

Our Illustrations.

CHURCH OF ST. AMBROSE, BRISTOL.

This church is one of several the building of which has been promoted by the Bishop of Bristol's Church Extension Commission, which was founded to provide additional parochial organisations and church accommodation in the rapidly-extending suburbs of the city. As all these churches are situated in areas not inhabited by the wealthy classes, it has been necessary to build economically, although substantially, according to the rules of the Incorporated Church Building Society. In most cases, churches erected under the auspices of the Commission have been built in sections, on account of the difficulty in raising funds. In this case, however, owing mainly to the generosity of one member of the building committee, it has been possible to complete the entire building, including all internal fittings, organ, and a stained-glass east window, the only item now remaining to be undertaken being that of a peal of bells. The special features of the plan to be noted are the spacious chancel, a large room over the vestries for classes and choir-practice, also a minor detail of plan in arranging the recessed churchwardens' seats in the western wall. The design is in the style of the 15th century, freely treated. The materials used are local stone for the walls, with ornamental features in Bath stone. Internal walls are plastered. The floors under seats are laid with wood blocks; elsewhere with tile mosaic. Joinery and internal fittings are of teak. The architects are Messrs. W. V. and A. R. Gough, MM.R.I.B.A.; the builders, Messrs. R. F. Ridd and Sons—all of Bristol.

OSWALDTWISTLE CARNEGIE LIBRARY.

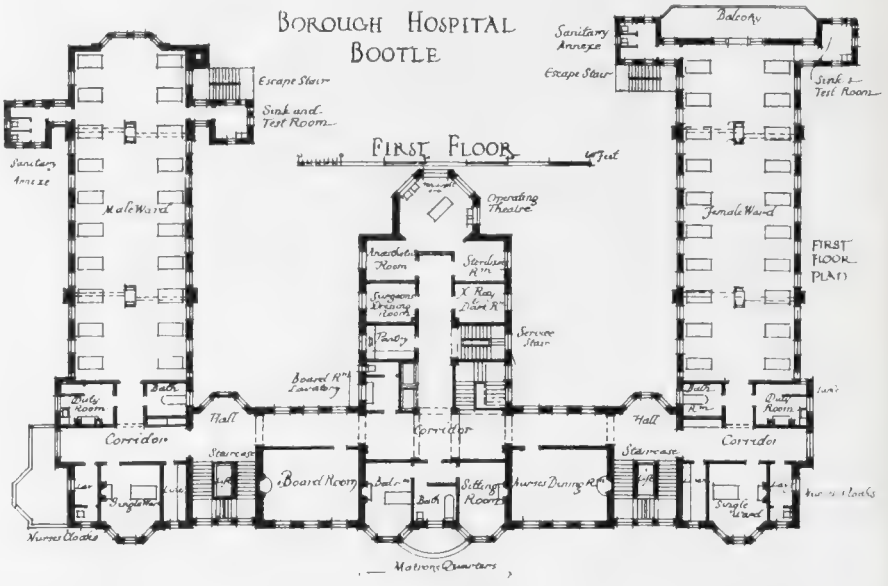
(SELECTED DESIGN.)

As the site occupies a prominent position in the town, and the view from the main street will look directly on to the angle of the building, this appears to be the obvious position for the entrance, which has been treated as the dominant feature of the elevations. The staff will consist of one person only, whose usual position will be at the lending-library counter, so that it was essential that the plan should be so arranged that every part of the building could be supervised from that point. The building will be faced with local stone, the base and the wall around the garden being of grey granite. The roofs will be covered with thick grey Burlington slates, and the flat roofs will be of reinforced concrete covered with asphalte. Internally, all walls will have tiled dadoes, and be plastered above, while the joiner's work will be stained green and varnished. The floors will be of concrete covered with wood blocks. The architect is Mr. F. Quentery Farmer, of Stalybridge and Coventry, whose design was placed first in a competition, Mr. W. H. Duncan, of Rochdale, being the assessor.

BOOTLE ROYAL BOROUGH HOSPITAL.

(SELECTED DESIGN.)

It was decided some time ago to rebuild the Bootle Borough Hospital as a memorial to King Edward VII. A competition was instituted, and invitations issued to six firms of Liverpool architects, each competing firm receiving an honorarium of £40 for the preparation of the design submitted. The assessor, Mr. Leonard Stokes, F.R.I.B.A., selected the design illustrated, submitted by Mr. F. B. Hobbs, A.R.I.B.A., and Mr. O. D. Black, F.R.I.B.A., who have since been appointed architects to the committee of the hospital for the rebuilding scheme. The Royal charter has been granted, and the hospital is now to be known as the Royal Hospital, Bootle. As will be seen from our illustrations, the site is somewhat restricted, even for a town hospital, and the difficulties of competitors were increased by the necessity of providing a scheme which could be proceeded with in sections from time to time, interfering as little as possible with the continued work of the hospital. In the Conditions issued to competitors, it was suggested the first portion should consist of one new ward block, nurses' home, and laundry, at an approximate cost of £18,000. The estimated cost of the complete scheme is approximately £40,000.



THE JESUIT CHURCH (SS. PETER AND PAUL), VERMARKT, MALINES, BELGIUM.

The front of this Baroque church was erected in 1709, at the same time that Sir John Vanbrugh was building Castle Howard, in Yorkshire; and it is, perhaps, interesting to note that in both examples, so very different in all other respects, and located so widely apart, the same aim after bigness of size in scale is visible. The church itself is somewhat earlier, 1670-77 being the dates assigned, and L. Faid'herbe was its architect. At one time the Jesuits owned the building: hence the popular name still in use. Inside, the pictures are devoted to scenes from the life of St. Francis Xavier, the work of Er. Quellin the younger, Boeyermans, P. Ykens, and others. The pulpit sculptures are attributed to Verbruggen, while J. Geefs carved the Apostles. The Jesuits occupied a college in the adjoining street, known as the former Keizershof, a Late Gothic building (1480). They stayed in this building from 1611 to 1773, and now a theatre occupies the site. Mr. Charles Gascoyne's sketch gives an excellent idea of this Late Renaissance façade, which holds its own uncompromisingly midst its surroundings.

Y.M.C.A. NEW BUILDING, CHARD, SOMERSET.

(SELECTED DESIGN.)

The plans indicate the accommodation provided. The lecture hall is to be used by others than members, so it is approached direct from the entrance vestibule. The parlour, intended for small devotional meetings, is also on the ground floor. The rooms reserved exclusively for members' use are provided on the upper floor. The smoking-room is approached by a ventilated lobby, which is itself cross-ventilated, besides being put at the extreme end of the building, in order that the non-smoking members may be safeguarded from any annoyance on this score of smoke. Besides accommodation for storage, the caretaker's apartments are arranged in the attic, and well isolated from the remainder of the premises. The building will necessarily be used chiefly during the evenings, so the various rooms are ranged along almost the whole frontage of the site, and therefore lighted windows of the club will impart a cheerful and inviting appearance, encouraging outsiders to take up the privilege of membership. The site is prominently situated at the end of the long main thoroughfare, which is very wide, so a broad treatment was considered desirable. Mr. Edward C. H. Maidman, Licentiate R.I.B.A., of Sherborne, Dorset, is the architect, and his design was selected in the recent competition. The perspective given herewith was prepared after the award was made.

Roads of an aggregate length of 100,594 miles were (according to Part III. of the Local Taxation Returns just issued) maintained by the 655 rural district councils in England and Wales in 1911-12. The average cost of repairs per mile was:—Main roads, £83 10s.; other highways, £24 11s.—the total cost being £2,791,498, out of a total expenditure of £4,859,402.

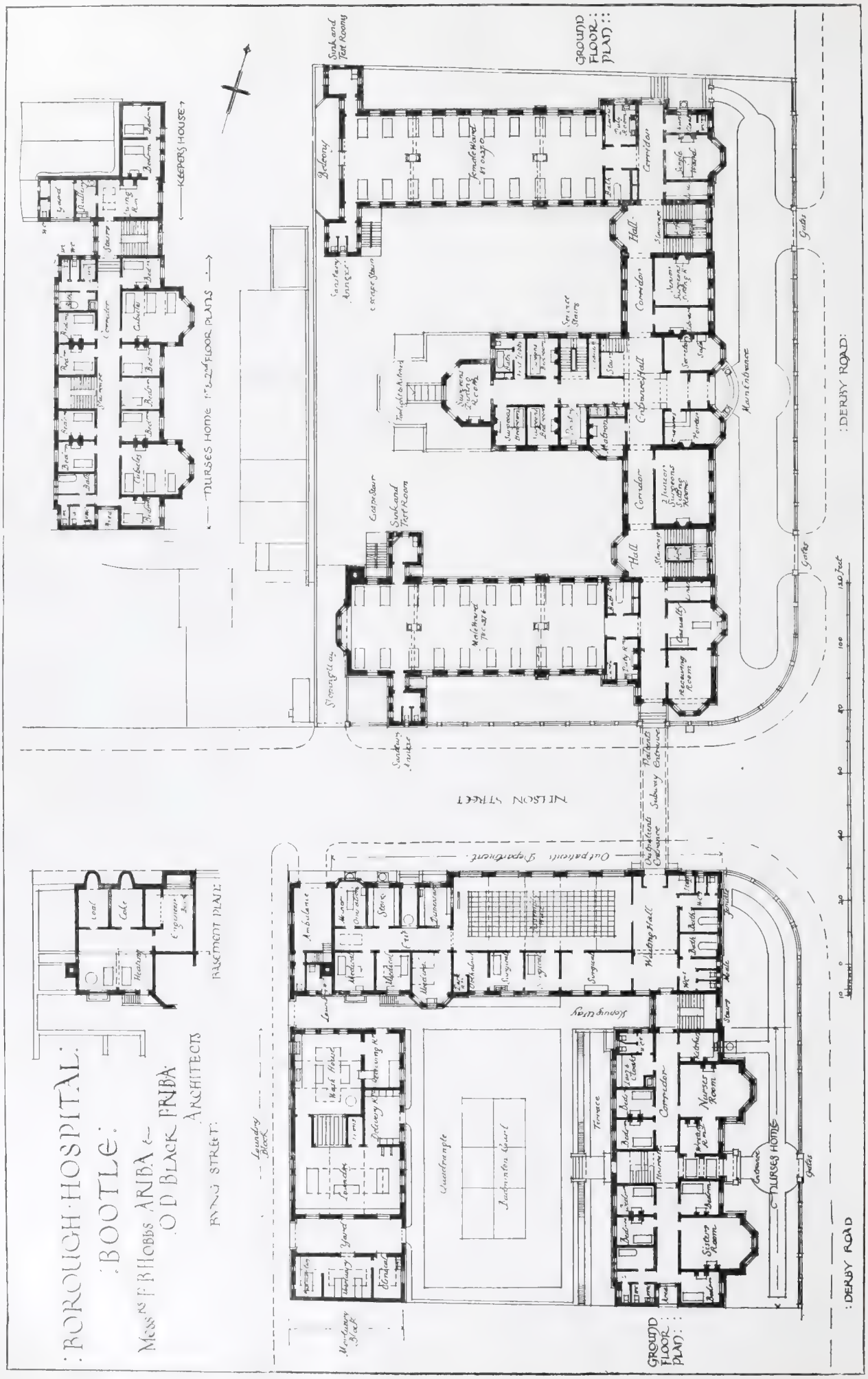
A picture-palace accommodating over 1,000 spectators, is being built in Phibsborough-row, Dublin. The auditorium measures 104ft by 38ft., and there is a gallery. The facade is of red brick, with wide stone dressings. Mr. G. L. O'Connor, of Great Brunswick-street, Dublin, is the architect, and Messrs. Squires and Co., Upper Abbey-street, in the same city, are the builders.

The British Portland Cement Company have acquired a big tract of land near Barmoor Clough, Chapel-en-le-Frith, on which they intend to erect extensive works for the manufacture of cement. Large numbers of workmen will be employed, and the company will erect cottage property for their workpeople. About £100,000 is to be spent on the erection and equipment of the works.

A memorial has been placed in the crypt of St. Paul's, "in pious memory of the famous dead whose remains lay buried in old St. Paul's Cathedral, or whose memorials perished in its destruction." The memorial, which is situated at the east end of the south aisle of the crypt, was designed by Mr. Mervyn E. Macartney, architect to the Dean and Chapter, and was executed by Mr. Esmond Burton.

The excavations at Ostia on the bank of the Tiber, in progress under the direction of the late Professor Vaglieri, have brought to light on the site of the Forum, and to the east of the temple of Vulcan, the remains of shops, constructed of tufa, and at a still lower level other shops, of the oldest town of Ostia on this site. The charred remains of beams are still visible. Professor Vaglieri, whose unexpected death was heard elsewhere, argued from this discovery that the shops which once stood in the Forum at Rome were also of wood, and of similar construction.

An interesting find has been made at the Castle Hotel, Bangor. There has been a change of tenancy lately, and last week Mr. Kerfoot, the new manager, noticed in the kitchen a huge bowl in use as a temporary receptacle for kitchen refuse. Mr. Kerfoot had the vessel cleaned and polished. It was found to be a large Carrara marble basin or font. It stands about 18in. high, and has a flat bottom, as if it had originally stood on a pedestal. It is 2ft. across the top, and about 3in. thick. Round the outside of the rim are moulded four communion-cups. A similar font is now in use at one of the churches in Conway.


: BOROUGH HOSPITAL :
: BOOTLE :
Messrs F B Hobbs ARIBA &
O D Black FRIBA
ARCHITECTS
BYNG STREET
BASEMENT PLAN
GROUND FLOOR PLAN
: DERBY ROAD :
NELSON STREET
KEEPER'S HOUSE
NURSES HOME 1ST & 2ND FLOOR PLANS
NURSES HOME
Out Patients Department
Isolation Department
Laundry Block
Mortuary Block
Quadrangle
Jacksonian Court
Terrace
Covered Way
Nurses Room
Sisters Room
Matrons Room
Waiting Hall
Out Patients Entrance
Subway
Ambulance
Stores
Surgical
Medical
Lavatories
Mess Room
Drawing Room
Laundry
Yard
Boiling
Mangling
Drying
Ironing
Gardener
Coal
Engineer
Heating
Boiler
Bedroom
Bathroom
Kitchen
Scullery
Larder
Pantry
Cupboard
Corridor
Hall
Staircase
Lift
Gates
Sanitary Annexe
Sink and Fat Room
Balcony
Female Ward for 19 Beds
Male Ward for 19 Beds
Surgical Dressing Room
Surgical Bedroom
Matron
Consulting Room
Waiting Room
Dispensary
Recovery Room
Mortuary
Porter
Nurse
Bed
Bath
W.C.
Linen
Store
Lobby
Verandah
Open Shelter
Main Entrance
Servants Entrance
Private Entrance
Out Patients Entrance
Ambulance Entrance
Nurses Entrance
Sisters Entrance
Matrons Entrance
Mortuary Entrance
Laundry Entrance
Boiler House
Engine Room
Coal Store
Ash Pit
Chimney
Fan
Heating Chamber
Steam Pipes
Hot Water Pipes
Cold Water Pipes
Gas Pipes
Electric Light
Electric Power
Telephone
Fire Hydrant
Fire Alarm
Fire Escape
Fire Extinguisher
Fire Hose
Fire Bell
Fire Station
Fire Brigade
Fire Engine
Fire Escape Ladder
Fire Escape Staircase
Fire Escape Balcony
Fire Escape Platform

LIBRARY
JAN 9 1913
UNIVERSITY OF TORONTO

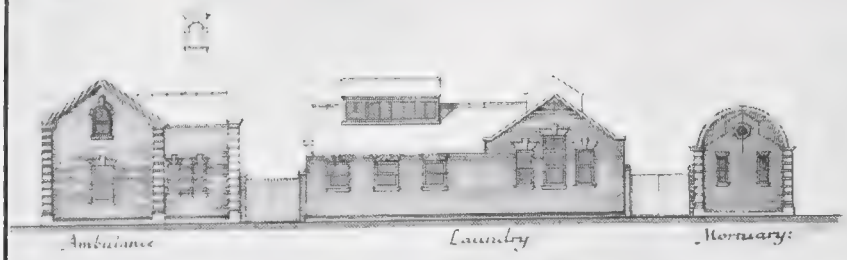


THE JESUIT CHURCH (SS. PETER AND PAUL), VEEMARKT, MALINES, BELGIUM—FAÇADE ERECTED 1709.
From a Watercolour Sketch by Mr. CHARLES GASCOYNE.

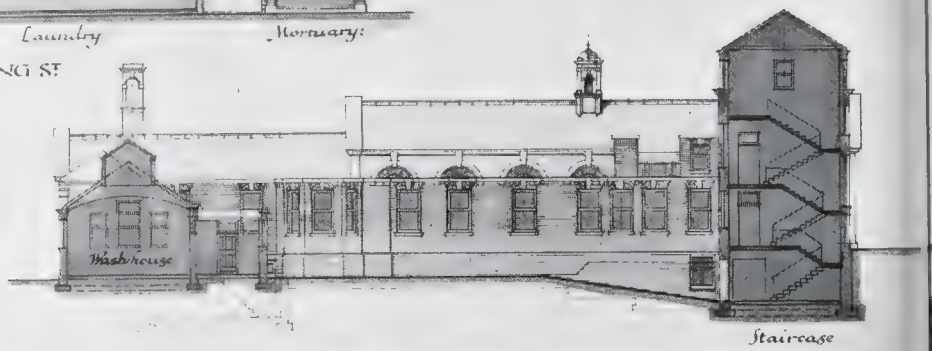


OSWALDTWISTLE (CARNEGIE) PUBLIC LIBRARY: SELECTED DESIGN.—Mr. F. OCENTLEY FARMER, Architect.

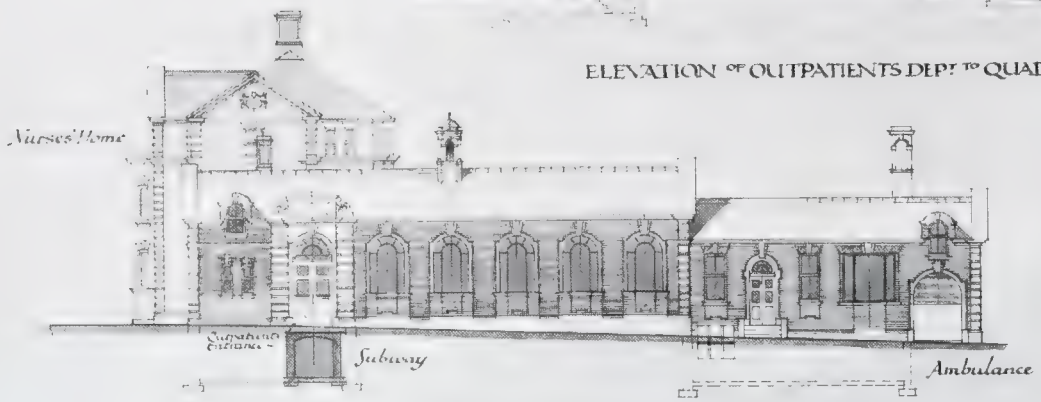
LIBRARY



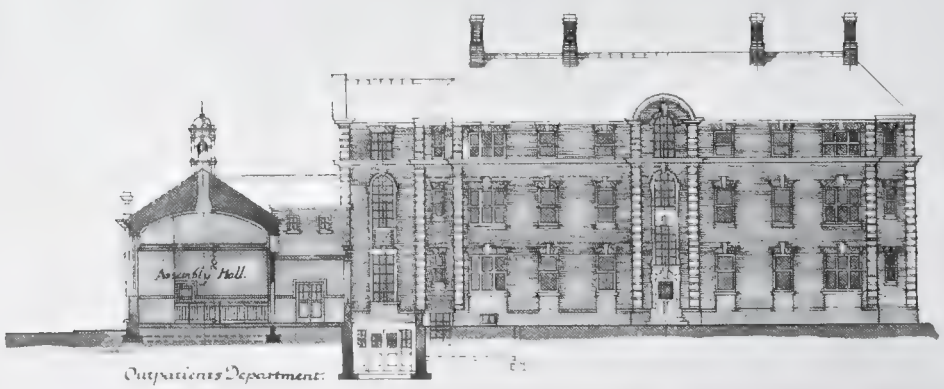
ELEVATION TO BYNG ST.



ELEVATION OF OUTPATIENTS DEPT TO QUADRANGLE



ELEVATION OF OUTPATIENTS DEPT TO NELSON ST.



ELEVATION OF NURSES HOME TO QUADRANGLE



SECTION THRO NU

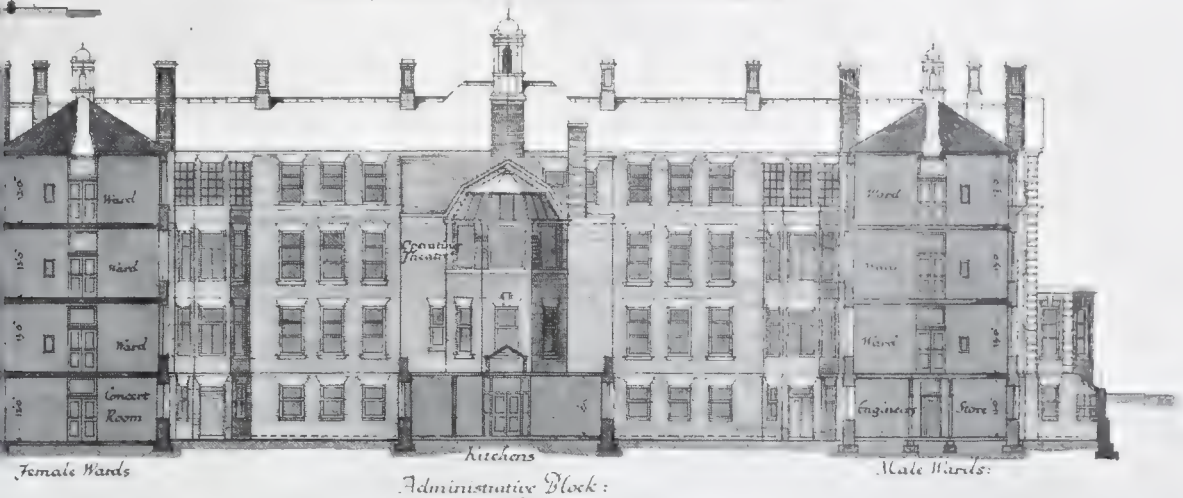


ELEVATION OF NURSES HOME TO DERBY RD.

Scale of

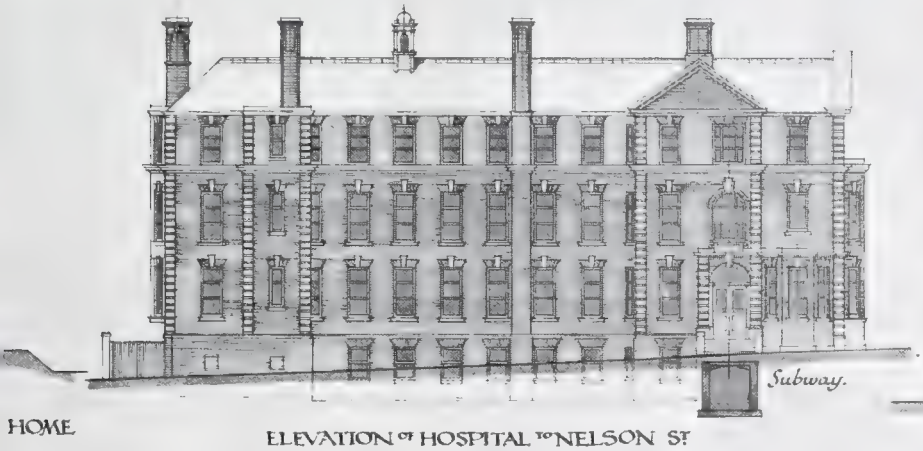


: SOUTH VIEW OF ADMINISTRATIVE BLOCK :



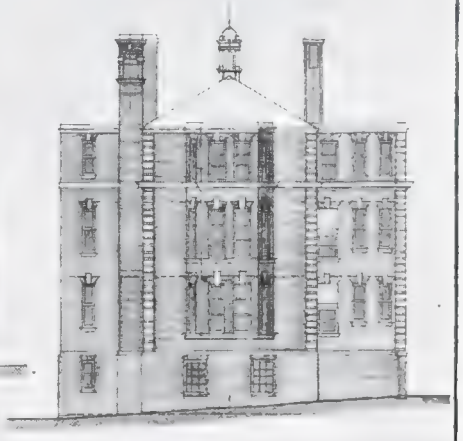
Administrative Block :

WEST VIEW OF HOSPITAL

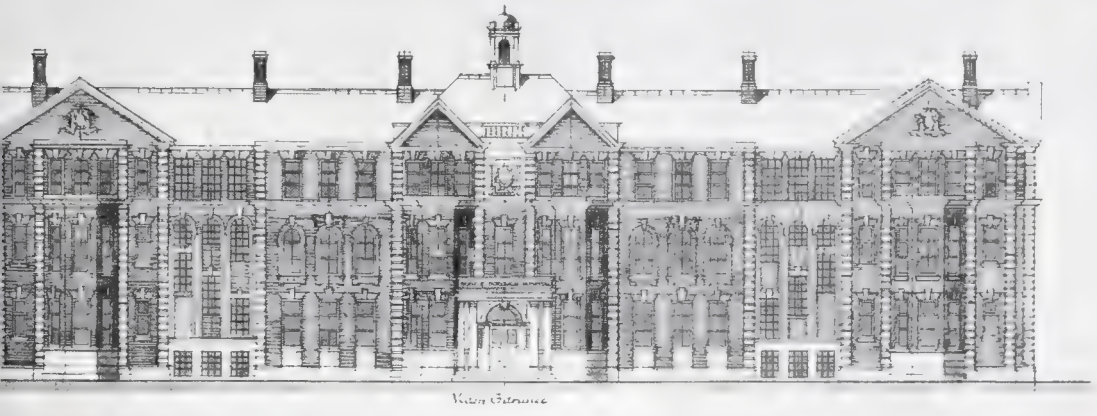


HOME

ELEVATION OF HOSPITAL TO NELSON ST



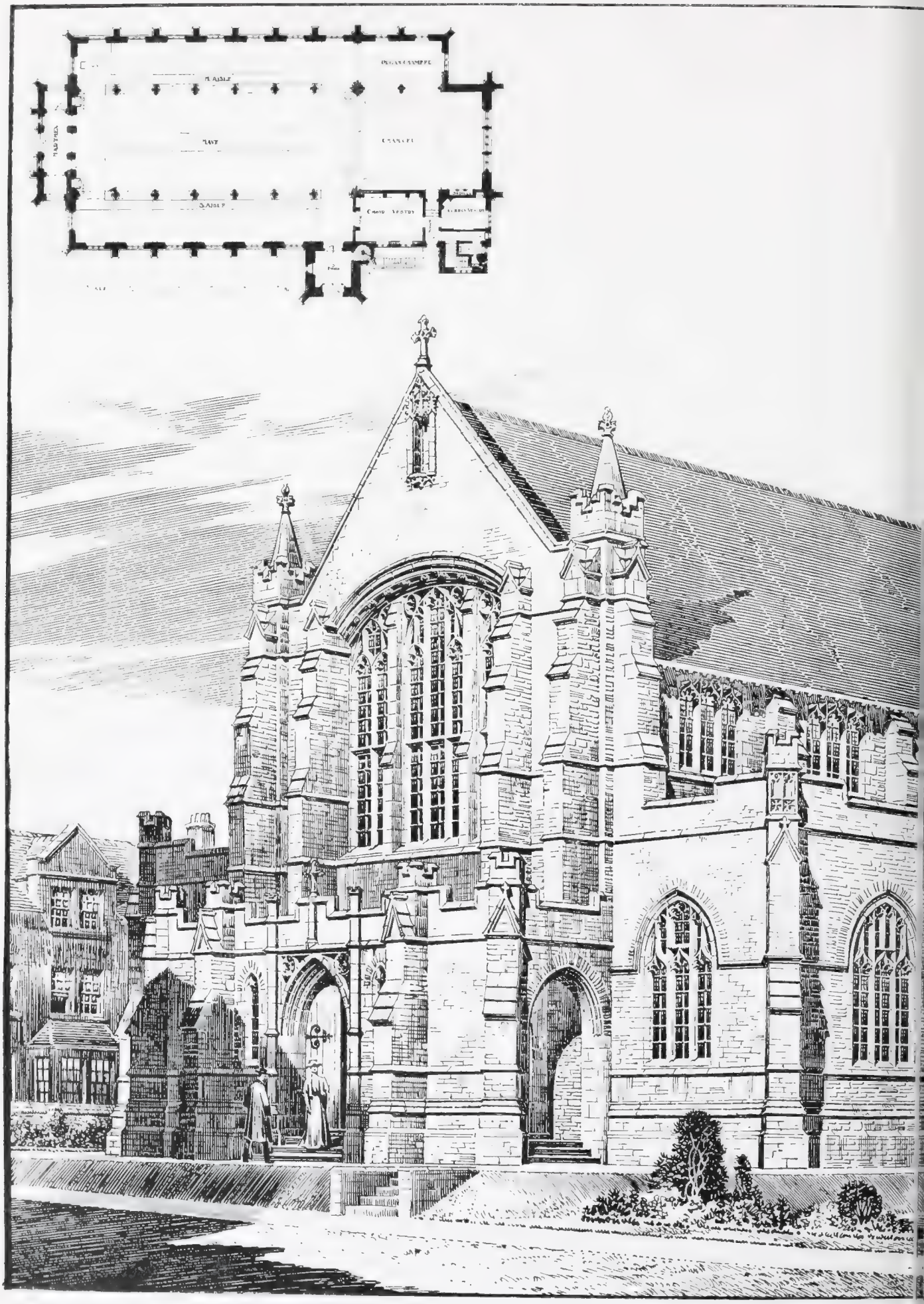
: END ELEVATION OF MALE WARD:



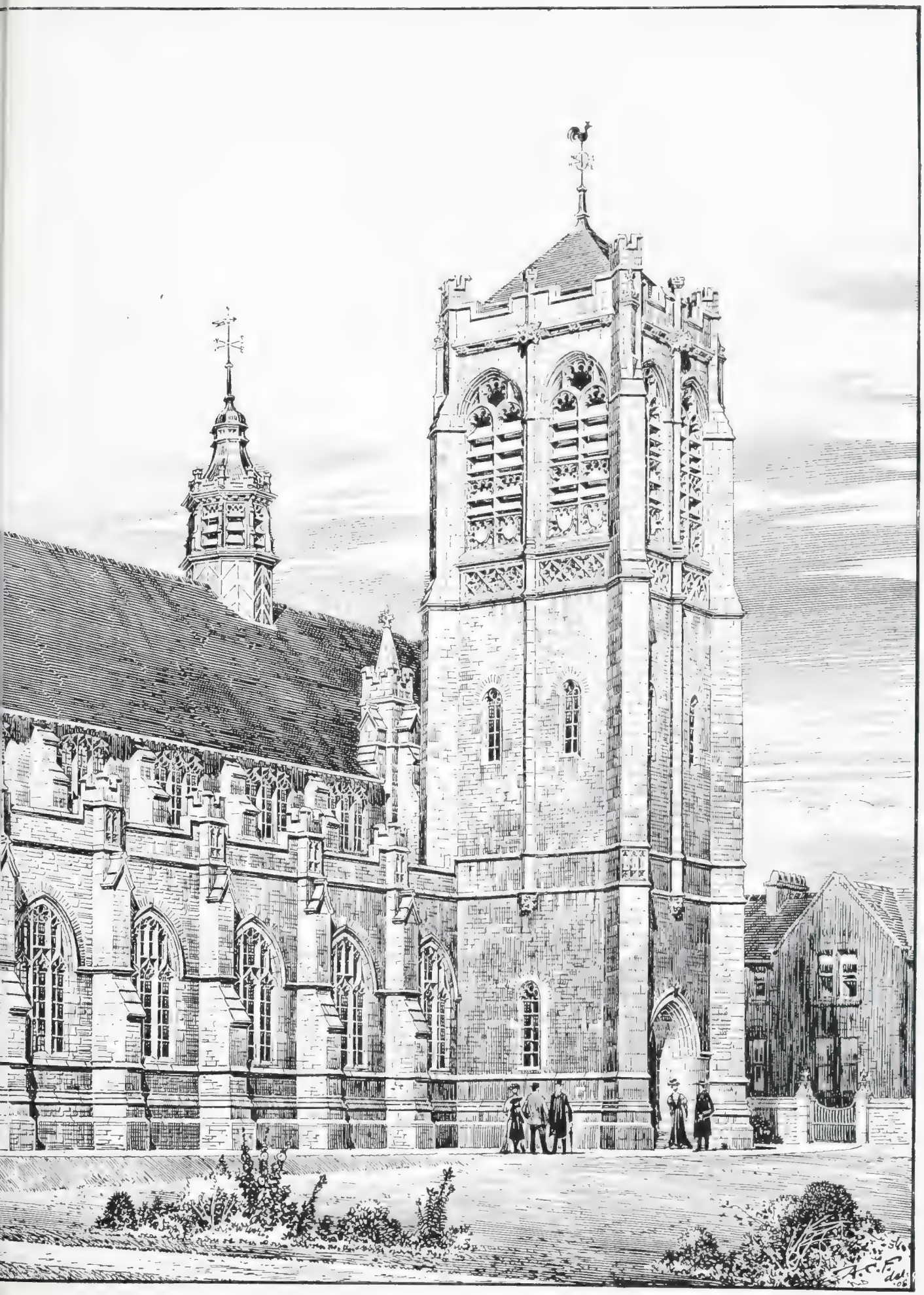
: ELEVATION OF HOSPITAL TO DERBY ROAD:

F. B. HOBBS, A.R.I.B.A., and O. D. BLACK, F.R.I.B.A., Architects.

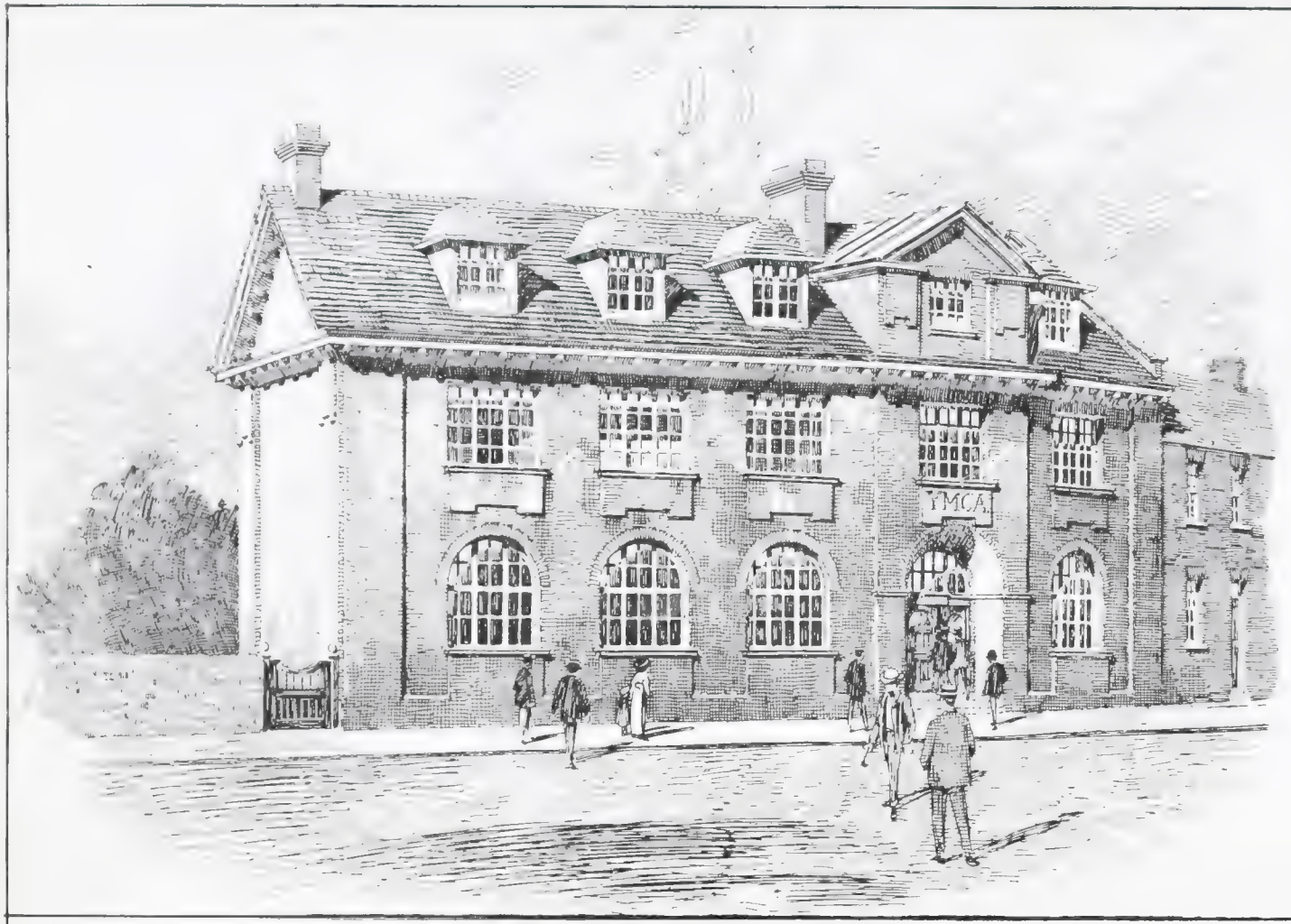




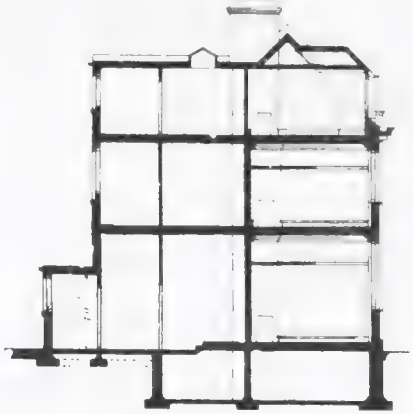
CHURCH OF ST. AMBROSE, BRISTOL.—Messrs. W.



OUGH, F.R.I.B.A., and A. R. GOUGH, A.R.I.B.A., Architects.



Y.M.C.A. NEW BUILDING : CHARD : SOMERSET



SECTION A.A.



Mr. Edward C. H. Maidman, Licentiate R.I.B.A., Architect.

Correspondence.

THE ARCHITECTS' AND SURVEYORS' APPROVED SOCIETY.

To the Editor of the BUILDING NEWS.

SIR,—I think your readers will be interested to have a short account of the first year's working of this society. It completed its first year on July 13 last, and at that date there were 1,606 subscribing members associated with it. These numbers have steadily increased, and at the date of writing this letter the membership stands at about 1,900. The membership is confined solely to those employed in the architectural and surveying professions. In addition to the subscribing members there are sixty honorary members.

When the society was formed I ventured to predict that it would prove advantageous to those concerned, for two principal reasons—viz.: (i.) That the average health of the members, as a class, would be good; (ii.) that the proportion of persons passing out of the category of insured persons would be higher than in non-technical professions and businesses, and that, as a consequence, the funds available for benefits, in addition to those provided by the Act, would be larger than in societies with a miscellaneous membership.

These anticipations have been amply fulfilled. During the year under review benefits have been payable only for six months. In that period the actual sickness and maternity experience of the society, as compared with the estimates of the Government actuaries, is as follows:—

Actuarial estimate . .	£525 16 1
Actual payments ..	153 9 8
Leaving a saving in practice, as compared with estimates, of ..	372 6 5

Thanks to the generosity of the Royal Institute of British Architects, the Surveyors' Institution, the Architectural Association, the Society of Architects, and the Quantity Surveyors' Association, the cost of launching the society has not fallen upon its membership funds, as these five institutions subscribed £220 between them for this purpose.

The cost of the ordinary administration is about 2s. 7½d. per head, as compared with the sum of 3s. 5d. per head allowed under the Act. The satisfactory figure at which it has been kept is due to the united efforts of the secretary and the committee. In this connection it should be mentioned that no member of the committee has accepted any fee or expenses in connection with his attendance thereat.

If the saving on the sickness benefit (as compared with the Government estimate) and the saving on the administration are added together, a surplus of £509 17s. 11d. is arrived at on the year's work. In this connection it should be borne in mind that (as before stated) the sickness benefit has only been payable for six months, and, therefore, there should be a greater saving during this year, if the general health of the members remains the same.

The number of persons who have ceased to be members of the society, owing to their passing out of the category of insured persons, consequent upon the rise in their income, is 102.

In view of the very satisfactory nature of these figures I have confidence in urging all persons who are engaged in architects' and surveyors' offices, and are eligible for membership, to join the society.—I am, etc.,

GEORGE CORDEROY.

Chairman of Committee of Management.

REGISTRATION AND CHARTERED ARCHITECTS.

SIR,—This problem is far too complex to expect a unanimous opinion, and it is by no means strange that differences exist; but, at any rate, the majority of its members realise now that the Institute has accepted the principle of Registration, while those who have most actively opposed the project hitherto, and who objected to the inclusion of the Society of Architects, have now veered round, at least to the extent of supporting the report of the Council brought before the business meeting on the 1st inst.

Any division of forces will set the clock back, and a united front is most essential if progress is to be made, so that extremists on both sides will do well to temper their zeal, though it is to be feared that those who are also members of the Society are showing signs of being irreconcilable. If so, they will split the project on the rocks ahead. Perfect loyalty and esprit de corps ought to actuate both Fellows and Associates, as by give and take alone is success in the least likely.

The letter is from Mr. Edwin T. Hall, reprinted in your last issue from the R.I.B.A. Journal, is timely and suggestive, fairly meeting, as it does, the matter of the Licentiates and representation. He recognises that Licentiates are not corporate members, and in justice to the Associates, who won their position by passing stiff and costly examinations, the Licentiates should be expected to come in by the same door, and so earn their right of entry in the same manner. A pledge was given to all Associates precisely on these lines, and I, as a Fellow, consider we are bound to make good our promise to them.

At the same time, in the best interests of the Institute, I do not agree that the Associates should be allowed to outvote the Fellows in the way proposed by the report of the Council. I cannot see that any such changes in the constitution of the Institute are necessary. There is no reason why Registration should not be promoted without disintegrating either the Society of Architects or the Institute itself. Outsiders seem to think that Registration can go forward irrespective of either professional body, or that one, or both, can be forced in this matter. No line of conduct such as that will succeed, for the only live policy is a constructive one, and Mr. Hall's draft seems to suggest a good outline as its basis.—Yours, etc.,

EMERITUS.

HIGH RAILWAY RATES.

SIR,—With reference to my letter to you on the above subject, which you were kind enough to publish in your esteemed paper of January 26, 1912, I should like to add the following:—

In 1867 the agriculturists of the Western States of North America arose in their might and protested against the exorbitant rates charged by the railway companies. The uprising resulted in turning the representatives of railway companies out of the legislation halls and replacing them with "Grangers," a name given to designate the industrial representatives. Laws were passed—which laws are still in existence—making maximum rates that the public were willing to abide by. These rates were made so low that the railways could hardly pay working expenses, to say nothing of an interest on capital. This forced the railway managers to devise means whereby working expenses could be reduced, which has been done to such an extent that the rates now charged are some 60 per cent. less than the maximum rates then established by law. The American railway companies have been forced to improve their rolling-stock, which they have done, and by so doing have reduced their rates 85 per cent. within thirty years. The English railway companies have not yet been forced; they have never improved their rolling-stock from the type that Stephenson originally gave them, and they have reached their minimum of working expenses without reducing rates. "This is from some correspondence in my possession dated Jan. 31, 1893."

At the present moment our railways are being deprived of passenger traffic by trams and 'buses, and the next thing will be their goods traffic from London, Liverpool, Southampton, and other big centres by motor haulage, and the only way to retain and retrieve such traffic is by a reduction in rates. As far as I can see, the only way to obtain this end is to reduce your working expenses. The American type of car, if used in England, would, I believe, reduce the expenses, both as regards wear and tear to rolling-stock and the labour incurred in loading same. I have been told, on good authority, that these cars would be no use to our railways, as they are too big—we should have to alter our sidings, etc., etc.; but if there is a saving in their use and the cars do not suit our traffic, then we must devise some way or means for our traffic to suit the cars.

The cost of sending meat from Chicago to New York, a distance of 1,000 miles, is 45 cents per 100lb., minimum 20,000lb. carried in a refrigerator car, with a freight capacity of 60,000lb. So that one car will carry, say, 26½ tons; 45 cents per 100lb. equal 10.08d. per ton at ex 4.87, say 41s. 5d. per ton 26½ tons at 41s. 5d. equals 1,097-6d. to carry 26½ tons 1,000 miles in one car. The cost of sending meat from Liverpool to London is 26s. a ton, a distance of 200 miles. Our refrigerator cars carry about 5 tons, so that to load as above we should want to have six cars, equals 26½ at 26s., equals 689s. for 200 miles, for 1,000 equals 5 by 689s., equals 3,445s. This shows one American car 1,000 miles for 5.88 pence per lb. per mile. One English car 1,000 miles for 18.455 pence per lb. per mile, or a difference of 12.575, or 3.139 times more, and were this worked on a ton mileage basis (I am unable to obtain the weight of an American refrigerator car) it would work out more still, and this is not counting the wear and tear, which does not occur with the up-to-date bogey-wheel American car. If American railways, when they were dead up against it in 1867, found their salvation in these cars, surely we can. I am afraid we are a long way behind the times, and it is up to us to make good.

A steel car is used in America for coal and mineral with an inside measurement 40ft., and carrying capacity 100,000lb.; so it is with every kind of goods they have built their cars for, finding that, large as they are, they can still fill them.—I am, etc.,

W. DAVISON.

69, Winns-avenue, Walthamstow.

THE VALUE OF THATCHED ROOFS.

SIR,—Farmers, landowners, and all who love the country must feel an interest in this subject, and a copy of the little pamphlet recently issued, containing a few from among many letters from persons well qualified to speak, will gladly be sent by me to anyone, on receipt of a postcard.

The value of thatch as a roofing for all kinds of stock is emphasised by men of the highest authority, as well as its general utility and economy in the long run, for houses, barns, and all rural buildings, while its beauty and fitness in rural surroundings cannot be surpassed. I am inclined to think that the complaint of the scarcity of men to do the work is exaggerated, for in many districts there are plenty of good thatchers; a recent Devon directory gives 123 in that county alone, and I know that they are not all old men. And, needless to say, when the demand increases lads will learn thatching who would otherwise go into other callings.

It does not seem to be generally known that Lloyds will insure thatched buildings of stone, brick, or cob at only half a crown per cent. This minimises an often-urged complaint; while another objection to thatch, that of harbouring fleas, etc., can, I believe, be guarded against by dressings of corrosive sublimate. I will send particulars of fireproofing preparations, or insurance at the rate mentioned above, to anyone interested in the subject, and shall be glad to receive any suggestions for maintaining the use of the beautiful, serviceable, and typically English roof-covering beneath which millions of our forefathers lived and died.

The pamphlet referred to contains the signatures of prominent agriculturists, medical men, architects, and artists, and architects of the highest standing are using thatch in many parts of the country, well knowing its intrinsic value and rejoicing in its harmony with our matchless English countryside.—I am, etc.,

L. MARK KENNAWAY.

"St. Helens," Teignmouth.

LEGAL INTELLIGENCE.

UNDEVELOPED LAND ADJOINING DEVONSHIRE HOUSE.—Mr. Justice Scrutton reserved judgment in the appeal by the Commissioners of Inland Revenue from the decision of a referee under the Finance Act, who held, in effect, that the forecourt of Devonshire House, in Piccadilly, formed part of the dwelling-house for the purpose of determining how much of the ground round the house was liable for undeveloped land duty. The Commissioners said that the forecourt and part of the land at the back used in connection with the house must be taken into account as undeveloped land in calculating the duty. They said that, subject to the acre allowed by the Act, all the rest of the land must be regarded as undeveloped, regardless of the fact of whether it could or could not be conveniently built on. The Commissioners assessed Devonshire House for £333 6s. 8d., at ½d. in the £1 on £160,000. The total gross site value of the house and land was estimated at £400,000, and the undeveloped land at £160,000. The Duke of Devonshire contended that duty was payable only on £120,000.—Mr. Danckwerts, K.C., for the Duke of Devonshire, argued that undeveloped land meant land in such a situation that, in the ordinary course, it could be used for building or trade purposes, other than agriculture. The only question for the Court was what was a reasonable and necessary adjunct of the house in question, occupied not only by the Duke of Devonshire, but by anyone else who might be likely to take it.—On Wednesday Mr. Justice Scrutton gave judgment. He said that the Commissioners appealed against the decision of the referee fixing part of the land and gardens connected with Devonshire House as liable to undeveloped land duty at the rate of a halfpenny in the pound on its assessed site value. Section 16 (sub-section 1) of the Finance Act (1910) imposed this duty on undeveloped land, and sub-section 2 provided that land should be deemed to be undeveloped if it had not been developed by the erection of dwelling-houses. Section 17 (sub-section 4) further provided that the duty should not be charged on site value of any land not exceeding one acre in extent, enjoyed with the house. Interpreting these sections, the Commissioners limited the land to the actual land on which the house and its foundations stood, and allowed the Duke in addition one acre free from tax. The referee, in effect, found that so much land was developed by the erection of Devonshire House as was essential to its enjoyment, and that in addition the Duke was entitled to a further acre, whether developed or not. The first point to be decided, said his Lordship, was whether the referee was right in his construction of the words "dwelling-house" used in the Act. This was very important, because it affected all large houses occupied with more than an acre of land. What was the meaning of the word "dwelling-house"? The Crown contended that it was limited to the actual buildings and the foundations, and the respondent argued that it included the curtilage and grounds. In his Lordship's opinion the words included the house, outbuildings, and curtilage other than gardens or pleasure grounds. Applying that definition to the present facts, his Lordship found that the courtyard and curtilage was not taxable, as it was essential to the enjoyment of the house. In conclusion, he remarked: "My decision, therefore, is that the hereditament from its Piccadilly front to line C on the agreed plan is free from undeveloped land duty for the reasons given in the judgment. The rest of the hereditament is chargeable. The figures, if not agreed, can be brought before me. As each side has partly failed in its contentions, I order each party to pay his own costs here and below." Mr. Allen: My Lord, on the point that you have decided against me——. Mr. Justice Scrutton: Everybody can have leave to appeal against everything. (Laughter.)

LONDON BUILDERS' AWARD.—In the King's Bench Divisional Court Justices Bray and Lush last week dismissed a motion by the defendant in the case of Trollope and Colls, Ltd., v. Singer, to set aside an award. The firm did alterations, etc., at Mr. Washington Singer's country house at Norman Court, near Salisbury, and a dispute followed, in which an arbitrator allowed the builders a certain sum in respect of loss of profit due, it was said, to delay occasioned by alteration of plans by Mr. Singer from time to time. Mr. Singer now sought to set aside the award on the ground that the arbitrator exceeded the scope of his jurisdiction.

BUILDER'S ACTION FOR LIBEL.—In the King's Bench Division, on Wednesday, Dec. 17, the hearing took place of an action for damages for alleged libel brought by Mr. Wm. James King, builder, of Woodstock, North End-road, Hampstead, and for some years chairman of the Hendon Urban District Council, against Mr. George Barber, of Furnival House, Furnival-street, printer of the *Town Crier* (a periodical published in the Hampstead Garden Suburb); the *Town Crier* Publishing Co.; Mrs. Lucy Crump, the editress of the periodical, of 179, Hampstead-row; and Mr. T. H. Peddie, of 59, Temple Fortune-hill, London. Mr. King alleged that while he was candidate for election on the Hendon Urban District Council in April last, the defendants, who were supporters of a rival candidate, Mr. Edward Gardner, published in their periodical a cartoon, in which plaintiff was depicted as a weed, a jerry-builder, and an axe-grinder, and Mr. Gardner was represented to be walking to a weed with a sickle and a jar of weed-killer. By that plaintiff alleged that the defendants intimated that he was a dishonest builder, who had joined the council with a view to serving his own ends. Defendants denied that the cartoon referred to the plaintiff, or that it was libellous. After Mr. King had given evidence, the parties arrived at a settlement, Mr. Schwabe remarking that the defendants would say now, as they had said before, that they had no intention of imputing any dishonest action to the plaintiff, who had always been regarded as a builder of good reputation, and a man who had done splendid public work. Mr. Hewart said the action was not brought to put money into the plaintiff's pocket. A juror was then withdrawn, and proceedings terminated.

AN ARCHITECT'S CLAIM.—NO ACTION AGAINST UNINCORPORATED AGGREGATE OF PERSONS.—This was the appeal before Lords Justices Vaughan Williams, Buckley, and Kennedy of the defendants in the action of Walker v. Sur, from an order of Mr. Justice Bucknill.—The plaintiff, Mr. Charles Walker, an architect at Newcastle-on-Tyne, is bringing an action against J. Marin Sur, Joseph Gaeth, and Augustus Mitzler, of the Hospital of St. John of God, of Scorton, Yorkshire, and Pacome Hughes, who are sued on their own behalf, and on behalf of all other members of the Brotherhood for £500 for professional services rendered, work and labour done, and money expended on behalf of the defendants as their architect. The appeal was against an order of Mr. Justice Bucknill that the four defendants should defend the action on behalf of or for the benefit of all persons interested, the plaintiff undertaking, in the event of obtaining judgment, not to take any proceedings upon it out of the jurisdiction.—Lord Justice Vaughan Williams said in his opinion the order was wrong. Such an order could not be made under the rule against an unincorporated aggregate of persons. Therefore the order should be discharged, and the appeal allowed, with costs. Lord Justice Buckley concurred. Lord Justice Kennedy agreed.

CONVICTION OF A BANKRUPT BUILDER.—At the Central Criminal Court on Saturday, before Judge Rentoul, Frederick Thomas Johnson, 36, builder, of Greenwich, was sentenced to 12 months' imprisonment with hard labour, the maximum penalty, on a charge of obtaining credit to the extent of £20 and upwards without disclosing the fact that he was an undischarged bankrupt.—Mr. Bodkin, who prosecuted, said the Bankruptcy Act of 1883 was specially passed to affect men like the defendant who rode about in their motor-cars obtaining credit. Since 1900 the defendant had been adjudicated bankrupt on ten occasions under various names in different parts of the country.

DISPUTED LAND VALUATION.—SUCCESSFUL APPEAL.—In the appeal under the Finance Act, 1910, by Frank B. Yates, of West Hill, Brandwood End, King's Norton, against the Commissioners' assessment of his property for land valuation, Mr. H. W. Bruton, of Gloucester, the Official Referee, who heard the appeal at Birmingham on November 18, has issued his decision.—The appeal was brought under Section 33 against the gross value and total value of West Hill, on the ground that the value was insufficient. The property consisted of a residence with five acres of freehold land, which was purchased by the appellant in June, 1912, for £1,350, and the question was whether the auction price represented the market value on April 30, 1909, £1,350 being also the figure at which the Commissioners had placed it. It was urged on behalf of the appellant that the executors of the late owner, Mr. Marsh, were anxious to wind up the estate, and that was the reason Mr. Yates had been able to buy the house so cheaply. The appellant's case was supported by the evidence of Birmingham valuers.—Mr. A. W. Kemp said that in his opinion the property was worth £1,800 on April 30, 1909, but it had depreciated somewhat since, and he now put it at £1,500.—Mr. A. J. Wilson estimated the market value in 1909 at £2,162, and Mr. Carl Hewitt at £1,800. Mr. Yates gave evidence that he was prepared to bid £2,000 at the auction.—In support of the Crown's case, Mr. T. G. Fisher, superintendent valuer for the Central Division, Bennett's Hill, Birmingham, gave evidence that the value of the property for estate duty was returned by the trustees at £1,350, and that was the sum at which it was sold at auction.—Mr. E. J. Bigwood, auctioneer and surveyor, Birmingham, considered the Government valuation a fair one.—The Referee awarded £1,640 as the total value.

WHAT IS A PUBLIC HIGHWAY?—On the appeal of Mrs. Cababe, in her action against the Walton-on-Thames Urban District Council, the House of Lords have decided that Cottimore-lane is not a public highway repairable by the council. It was common ground that it has been a highway since 1864, but the quarter sessions found that it was not a public highway in 1835, and two other Courts have agreed in that view.—Lord Loreburn was not prepared to take a different view. The road, he said, came within Section 23 of the Highway Act, 1835, and was not a highway repairable by the inhabitants before 1835. It became a highway in 1864, perhaps earlier, but after the Highway Act came into force. It might be a hard case on the appellant, but the law was against her.—Lords Kinnear, Dunedin, and Atkinson concurred, and the appeal was dismissed.

WATER FOR DOMESTIC PURPOSES.—METROPOLITAN WATER BOARD v. AVERY.—In the House of Lords on Friday, Lords Halsbury, Atkinson, Dunedin, and Kinnear gave judgment in this important appeal by the Metropolitan Water Board from an order of the Court of Appeal confirming an order of the Divisional Court reversing a decision of his Honour Judge Woodfall in the Westminster County Court in favour of the present respondent, Mrs. Avery. The facts were that Mrs. Avery, the licensee and occupier of the Crutched Friars, Minories, served a number of luncheons daily on the premises. She obtained from the appellants a supply of water for domestic purposes, and paid them the ordinary water rate of 5 per cent. on the rateable value of the whole of the premises. The appellants sought to impose an additional charge of 10s. a year in respect of the supply of water used in connection with the serving of the luncheons, and the principal question was whether the appellants were entitled to impose such additional charge on the ground that the supply was not a supply of water for domestic purposes. They demanded five shillings, two quarters' water rate (non-domestic), and Judge Woodfall gave judgment in their favour, but the Divisional Court (Mr. Justice Channell and Mr. Justice Bray) reversed this decision, deciding on appeal in favour of the respondent, and this order was confirmed by the Court of Appeal (Lords Justice Vaughan Williams, Buckley, and Hamilton) it was stated, at the hearing of the appeal on November 14, that the decision was of the utmost importance to the Water Board, because they now charged an additional rate (in some cases amounting to a considerable yearly sum) for water used by hotel and restaurant keepers throughout the Metropolitan area, and the decision might even prevent them from charging an additional rate to breweries and laundries. An adverse decision to the appellants obviously would probably call for new legislation in view of the financial position of the Water Board.—Lord Halsbury, in his judgment, expressed the opinion that the decision in Colley's case, 1912, was decisive, and that Mr. Justice Channell's judgment in the case of "Pidgeon v. Great Yarmouth Waterworks," 1904, the boarding house, clearly pointed out the mode in which increased consumption of water was intended by the Legislature to be paid for when used for domestic purposes. The difficulty arose in construing the terms "domestic" and "non-domestic" supply. He thought no ordinary person would misunderstand the meaning that the Legislature intended to attach to those terms but for the defining section, which was not a defining section at all. He moved that the appeal should be dismissed, with costs.—Lord Atkinson and Lord Dunedin read judgements to the same effect, and Lord Kinnear also concurred.—The appeal was accordingly dismissed, with costs.

The Bishop of London consecrated on Monday the new church of SS. Michael and George at Fulwell, Upper Teddington. It is the gift of an anonymous donor. The site was bought a few years ago by the Bishop of London's Fund for £1,000, and there is space for a vicarage or a parish hall.

WATER SUPPLY AND SANITARY MATTERS.

DARLASTON.—Mr. A. W. Brightmore, an inspector from the Local Government Board, held an inquiry at Darlaston Town Hall on Friday into an application by the Darlaston Urban District Council for sanction to borrow £15,000 for sewerage and sewage disposal. Mr. J. Corbett, clerk, said the object was to supplement the existing sewage-disposal works at Bentley-road. The existing works had proved to be totally inadequate for the needs of the town. The county council had threatened legal proceedings for polluting the River Tame. A scheme prepared by Messrs. Dodd and Dodd, engineers, Birmingham, was accepted by the council, and had been approved by the county medical officer of health, Dr. Reid. The present sewage-disposal works were designed thirty years ago, and occupied over twenty-six acres of land; but the latter had become sewage-sick and worn-out and ineffective. By the new scheme the sewage would be dealt with on the biological system.

DISPOSAL OF SEWAGE SLUDGE.—A meeting of the Birmingham and Midland Section of the Society of Chemical Industry was held on Friday night at the University Buildings, Edmund-street, Birmingham, when Mr. F. R. O'Shaughnessy read a paper on "The Treatment and Disposal of Sewage Sludge." Mr. O'Shaughnessey, who is consulting chemist to the Tame and Rea Drainage Board, described nine or ten years' work at the sewage-farm at Saltley. As experience had accumulated, he said, the final result had been a process of preliminary digestion by means of microbes, by which the sludge was transformed from a filthy mass into an innocuous solid, which is utterly incapable of giving rise to nuisance or disease. Incidentally, during the process, from a quarter to a third of the sludge was completely destroyed. As to the cost of the process, it compared very favourably with others, such as disposal at sea or trenching into the soil, and was immensely cheaper, and much more sanitary, than the sludge-pressing process. The actual cost was 4.7d. per cubic yard of wet sludge dealt with. The aggregate cost might be estimated from the fact that close upon 300,000 cubic yards of sludge had to be dealt with per annum at Saltley. The process practically eliminated the nuisance so inherent in sludge-disposal operations.

KILKENNY.—Mr. James F. Reade, A.M.I.C.E., has submitted plans and specifications for an important scheme for the city main drainage and sewage-disposal works, at an estimated cost of £22,000. The plans were approved, and application to the Local Government Board for sanction for a loan was ordered to be made.

MALPAS.—Saturday marked another step in the direction of perfecting the scheme for insuring an equalisation of pressure as the water flows from Vyrnwy to Liverpool, when the Lord Mayor of that city opened the new balancing reservoir at Malpas, in Cheshire. When the Malpas works are fully developed, there will be passing through the balancing reservoir every day between 200,000 and 250,000 tons of water. The reservoir has a holding capacity of four and a half million gallons, a volume equivalent to the consumption of Liverpool each three hours of the day. In diameter, the reservoir is 240ft., and it is situated at an altitude of 450ft. above the sea-level. The contract for the reservoir and the waste watercourse amounted to £7,750. Mr. Joseph Parry is the water engineer to the Liverpool Corporation, and Mr. H. N. Giles is the resident engineer at Malpas. A third pipe-line will be constructed, as a relay between Lake Vyrnwy and Liverpool, and this is at present expected to complete the undertaking.

SANITATION IN SALFORD.—A meeting of the North-Western Centre of the Sanitary Inspectors' Association was held in the Salford Town Hall on Saturday. Mr. G. T. Davies, of Little Hulton, presided. Alderman William Huddart, chairman of the Salford Health Committee, afterwards read a paper on the progress of sanitation in Salford during the past 21 years. He pointed out that as the result of the policy carried out by the corporation the borough death-rate had fallen from 26 per thousand in 1891 to 17.2 in 1912. There were now but five closed courts in the borough, and not one single cellar dwelling.

Dundee School Board approved on Monday of plans for the reconstruction of the Harris Academy, Dundee, at an expenditure of £16,300. By the plans the present line of elevation to Park-place will be continued almost to Nethergate, and provision will be made for accommodating 1,160 pupils.

STATUES, MEMORIALS, &c.

THE EDWARD VII. STATUE FOR ABERDEEN.—The town council of Aberdeen, at their meeting on Monday, approved of alterations in connection with the preparation of the site of the statue of Edward VII. in Union-street and Union-terrace, for the memorial statue of King Edward in course of execution by Mr. Derwent R.A. Mr. A. Marshall Mackenzie, A.R.S.A., F.R.I.B.A., had been asked to examine the plans and to report on the subject. Mr. Mackenzie, in his report, recommended that the radius of the proposed circular wall behind the statue should be altered, so that the balustrade may form a complete segment with no straight part. The design of the balusters should be exactly the same as those removed from the old Union Bridge, which, being of fine Classic design, will form a suitable surrounding to the statue. In order to give a further effect of monumental dignity to the statue, he recommended that the balustrade be raised on a base course of about 18in. above the platform, thus lifting it above Union-terrace, as well as Union Bridge. He recommended also that the steps forming part of the statue pedestal be increased in height to correspond with the steps from the pavement to the platform, so that the bronze figures would stand above the top of the balustrade, instead of being bisected by it as at present. The burgh surveyor, who had in consultation with Mr. Mackenzie prepared amended plans to enable a more befitting background to be constructed, estimated the cost of the whole work as now proposed at £4,550 (being an increase of £1,650 on the original estimate).

Mr. W. Bell, of Thorney, near Peterborough, has been appointed surveyor and inspector of nuisances to the Oadby Urban District Council.

A Local Government Board inquiry will be held at Liverpool to-day (Friday) into an application of the corporation for sanction to a loan of £65,750 for the purchase of the Harthill estate and part of the Walton Hall estate, Walton, for public walks and pleasure-grounds.

At a special meeting of Glasgow Corporation Sub-Committee on Art Galleries and Museums on Monday, it was agreed to place on record an appreciation of the services of Mr. James Paton, who is retiring from the office of superintendent of the Art Galleries, and to recommend the corporation to grant Mr. Paton a retiring allowance of £300 a year. Mr. Paton has been in the service of Glasgow Corporation for thirty-nine years, and, previous to coming to Glasgow he was a Government servant in the Edinburgh Museum.

A bronze monument at Bloemfontein to the women and children who perished in the concentration-camps during the South African war was unveiled by Mrs. Steyn on Tuesday. The memorial is the work of the Dutch sculptor, Van Wouw, and consists of a group of three fully draped figures—a mother standing behind her daughter on whose lap is a dying boy. These are placed in front of an obelisk and rising built pedestal to a height of 115ft. On either side of the die are bas reliefs—one depicting a camp concentration scene, and the other women and children on the trek.

A sentence of three months' imprisonment in the second division was passed at Scarborough on Tuesday, on Christopher Baines (39), until recently superintendent of the cleansing department of the borough, who had pleaded guilty to a charge of stealing a quantity of old metal belonging to his former employers. Baines entered the service of the corporation 22 years ago as a clerk in the cleansing department, and in 1907 succeeded, as superintendent, his father, the late Christopher Baines, who had served the corporation for 47 years without a bad mark against his name.

In the Northern Junction Railway Bill, to be revived in next Session, many modifications have been made to meet the objections by which the Bill was defeated last year. It is proposed to cross the Regent's Park-road in tunnel instead of by bridge, and to enter Finchley a good deal farther north than was provided by the defeated scheme. The railway would also now pass through some of the poorest parts of East Finchley. A branch line at Long-lane would probably connect with the Great Northern Railway there. Tunnelling would take the place of the unsightly embankments to which objection was taken last summer, while electricity would be used instead of steam. Vigorous opposition is threatened, however, to this new scheme of Mr. Mallaby-Deeley, M.P., by the residents in the Hampstead garden suburb and Finchley, and there promises to be a stiff fight, highly remunerative to Parliamentary counsel, and expert witnesses next session.

Our Office Table.

Canon A. H. Sanxay Barwell, F.S.A., of Clapham, near Worthing, has left to the British Museum his magnificent collection of Limoges and other enamels. The collection, which is exhibited in the Mediæval Room at the Museum, includes a few excellent examples of champlevé enamels dating from the end of the 12th and the beginning of the 13th century; but the remainder, some ninety specimens in all, are works of the 16th century by Nardon Penicaud, Leonard Limousin, Didier, Court, Reymond and Jean, and Pierre Courtois. From the Hamilton Palace collection comes a triptych representing the Deposition, Entombment, and Resurrection of the Saviour by Penicaud.

Sir Arthur Evans has presented to the Museum of Archæology and Ethnology, Cambridge University, the last instalment of a series of objects which he has selected from the collections of his father, the late Sir John Evans. The gift comprises 121 specimens ranging in date from prehistoric times to the 18th century. It includes some fine examples of celts and spear-heads (figured in Sir John Evans's works on the Stone and Bronze Implements of Great Britain), Roman enamelled brooches and other ornaments, Mediæval badges, finger-rings of various dates, decorated buckles, strap-ends, and other objects. The value of the collection is greatly enhanced by the fact that all the specimens composing it were found in Cambridgeshire and the adjacent counties. By the express wish of the donor the objects will not be kept as a separate collection, but will be incorporated in the various local collections to which they are severally relevant.

At the last meeting of the Devon County Council, held at Exeter, the education committee further reported on proposals to strengthen the architect's staff. Mr. C. Pratt said work was done by the architect's staff which could be undertaken by the school managers. The duties of manager were a great farce. Mr. Tremlett moved, and Mr. Wradcatt seconded, that the subject be referred back to the committee, with the view of bringing up a well-considered scheme for utilising the services of the school managers. Mr. Hurrell thought it would be a dangerous experiment to allow managers to spend what they liked when the money came out of the county fund. The chairman feared managers were likely to pursue the line of least resistance, and give themselves the least trouble in the matter of buildings and upkeep. They had been sweating the staff at the architect's office, and he did not think they ought to go on doing it. The amendment of Mr. Tremlett was, however, carried by a large majority.

The question of the assessment of stone pits has been exciting a good deal of attention amongst Norfolk assessment authorities, and the Forehoe Union, which contains some of the largest and most valuable stone pits in the county, has obtained counsel's opinion on the matter. The practice hitherto in some places appears to have been to assess the land at its agricultural value, regardless of the much more profitable business uses to which it has been put, a practice quite obviously wrong. The opinion from counsel, read at the last meeting of the Forehoe Rural District Council, although it is a lengthy and detailed document, is very clear, and is really only a restatement of the common rule governing all assessments: that property should be assessed on the amount which a hypothetical tenant, hiring in the open competitive market, would pay as rent for it. Why it should ever have been doubted that this rule applies to land used for stone pit purposes in precisely the same way as it applies to other assessable properties, it is difficult to understand.

It is proposed to hold a representative exhibition of woodland and timber industries in London next year, under the auspices of the English Forestry Association. One of the features will be practical illustrations—showing the men at work—of the woodland

industries which the Association are organising and encouraging, and especially those dealing with the conversion of coppice and poles. Another feature of the exhibition will be illustrations of the present uses and markets for English timber and new ones that might now be cultivated will be specially emphasised.

At the Corporation Art Gallery, Birmingham, on Friday night, the keeper, Sir Whitworth Wallis, delivered a lecture in which he dealt with the pre-Raphaelite paintings in the Art Gallery, tracing the development and aims of the movement, and exhibiting slides of the work of the principal exponents. The pictures of Holman Hunt, Rossetti, Millais, Ford Madox Brown, Arthur Hughes, and others were described at considerable length, the lecturer giving interesting and hitherto unknown facts about the painting of many of the famous works. He said that the remarkable series of pre-Raphaelite pictures and drawings, due to the noble generosity of several donors, gave the Birmingham Art Gallery a unique position, as such a collection could not be found in any other gallery in the world.

Mr. Robert Weir Schultz, writing in the *Times* as to the heavy expense of providing housing accommodation in rural districts, points out that a good deal of the heavy initial outlay in the preparation of plans would be saved if a series of standard plans, elevations, and specifications of cottages suited to rural conditions, and issued under the sanction of the Local Government Board, were procurable at a small cost. If these were available they would, in many cases, undoubtedly be adopted by the rural councils as they stood (a matter as to which local architects might reasonably make demur), and in other cases might form at least a guide as to the types of cottage that the Board would be prepared to sanction. The plans of cottages published by the Board, in a memorandum issued during the present year, are, as Mr. Schultz remarks, more suited to urban or suburban than to purely rural conditions. Rural councils are further handicapped in many cases, as the writer says, by the difficulty of obtaining land and by the high prices asked and the arduous conditions imposed.

The Local Government Board have approved the Middlesbrough borough engineer's (Mr. S. E. Burgess, M.Inst.C.E.) recommendation in connection with the paving of streets at Newport, the cost of which has to be paid by the frontage-owners. Objections were raised by the owners, and an appeal made to the Board. A local inquiry was held by one of the Board's Inspectors, and evidence heard on both sides in connection therewith. The case for the corporation was presented by Mr. Preston Kitchen, town clerk; Mr. Luck, barrister, instructed by Mr. M. W. Hutchinson, solicitor, representing the objectors. The Board have made an order under Section 268, Public Health Act, 1875, confirming the decision of the streets committee of the town council, and order the appellants to pay the sums apportioned on them for road-work charges.

A fourth edition of the late Professor Davies's "Handbook of Hygiene" (London: Charles Griffin and Co., Ltd., 10s. 6d.) is published, revised and enlarged. It covers over 700 pages, although the sections on the analysis of Air, Water, Food, etc., in the earlier editions are omitted.

"Reinforced-Concrete Railway Structures," by J. W. Ball, A.M.I.C.E. (London: Constable and Co., Ltd.; 8s.), is at once a rational and reliable comparison of the advantages and deficiencies of reinforced concrete, and a compilation of simple formulæ and calculations which the practical designer will welcome, graphic methods being used wherever possible.

"Elementary Graphic Statics," by John T. Wight, A.M.I.M.E. (London: Whittaker and Co., 2 White Hart-street, E.C., 4s.) is a useful textbook of the application of graphical methods to the solution of the simple problems of engineering and building construction. The problems and examples are carefully worked out, and many a young student who is more bothered than edified by the intricate and cumbrous mathematical equations in which some teachers love to make things difficult will be thankful for the book.

We have received from Messrs. C. Jennings and Co. one of their lists, which contains illustrations and prices of all kinds of manufactured woodwork, amongst which is to be found prices of doors, stairs, windows, shopfronts and fittings in deal, mahogany, Austrian oak, teak, and other woods. This firm is well known as manufacturers of doors to compete against foreign. The list has some excellent illustrations of fretwork grilles. Attention is also drawn to their ash and oak plywood, timber, skirtings, and mouldings. Other illustrations show various patent ways of making windows and fastenings, one window being Messrs. C. Jennings and Co.'s patent P.T.O. fittings, which, when applied to a sliding window, will admit of the window being cleaned inside the room without the use of a step-ladder. The book also gives illustrations and prices of handrails, square cut, round turned, and fretwork balusters. The list at present contains 270 pages; but their new issue, which will be ready in the New Year, will contain 300 pages. Messrs. Jennings hold (without fear of contradiction) that their new issue is without rival for completeness in its own particular line. They also enclose one of their well-known advertising rules. The list and the souvenir brass-jointed boxwood rule is sent post free on receipt of 1s. 6d., or for 3d. extra abroad. The rule alone is worth at least twice the money. Rule and list can be got by sending to Messrs. C. Jennings and Co., 952, Pennywell-road, Bristol.

Trade News.

WAGES MOVEMENTS.

LABOUR IN NOVEMBER.—The Board of Trade report states that employment in November continued good on the whole. The seasonal decline in the building and brickmaking trades continued: but in the building trades there was still a scarcity of certain classes of workmen in some provincial districts. Trade unions with a net membership of 967,361 reported 19,668 (or 2.0 per cent.) of their members as unemployed at the end of November, 1913, compared with 2.2 per cent. at the end of October, 1913, and 1.8 per cent. at the end of November, 1912. Returns from firms employing 423,565 workpeople in the week ended November 22, 1913, showed, as compared with a year ago, a decrease of 1.4 per cent in the number of workpeople employed, and of 0.6 per cent. in wages paid. The changes in rates of wages in November resulted in a net increase of £3,200 per week in the wages of 52,000 workpeople. The principal increases affected 12,000 bricklayers in London, 4,500 carpenters and joiners and labourers at Manchester, and 4,350 bricklayers, carpenters, and joiners at Liverpool.

MEETINGS FOR THE ENSUING WEEK.

FRIDAY (To-day).—Institution of Civil Engineers. Students' Meeting. "Air-Filtration, and the Cooling and Ventilation of Electrical Machines," by W. E. Gurry, Stud.Inst.C.E. 8 p.m.

TUESDAY. Institution of Civil Engineers. Adjourned Discussion on "Cyclical Changes of Temperature in a Gas-Engine Cylinder." 8 p.m.

Mr. C. S. Wright, of Caius, has been appointed by the Senate of Cambridge University lecturer in surveying and cartography (Royal Geographical Society lecture) for two years.

Lord Courtney has enriched his house in Cheyne-walk, Chelsea, with two panels illustrative of Chelsea's great memories. They were set in position on Tuesday. The sculptor is Mr. A. G. Walker, the designer of the Florence Nightingale statue that is about to be set up in Pall Mall. The idea of the tablets is that of Chelsea conversations: one panel containing the heads of Sir Thomas More and Erasmus as they must have talked together in More's garden, Chelsea; the other showing the heads of Thomas Carlyle and Joseph Mazzini, also facing each other.

LATEST PRICES.

IRON.

Steel Joists, Belgian and German (ex steamer, London)	per ton	£6	2	6	to £6	5	0
Steel Joists, English		7	10	0	,, 7	12	6
Wrought-Iron Girder Plates		7	0	0	,, 7	5	0
Steel Girder Plates		7	2	6	,, 8	2	6
Bar Iron, good Staffs		6	5	0	,, 8	10	0
Do., Lowmoor, Flat, Round, or Square		20	0	0	,, 0	0	0
Do., Welsh		5	15	0	,, 5	17	0
Boiler Plates, Iron—							
South Staffs		8	0	0	,, 8	15	0
Best Snedshill		9	0	0	,, 9	10	0

Angles 10s., Tees 20s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £8 15s to £9.
Ditto galvanised, £14 to £15 10s. per ton.

Galvanised Corrugated Sheet Iron—

	No. 18 to 20.	No. 22 to 24
6ft. to 8ft. long, inclusive	Per ton.	Per ton.
gauge	£13 0 0	£13 10 0
Best ditto	13 0 0	14 0 0

Wire Nails (Points de Paris)—

3 to 7	8	9	10	11	12	13	14	15	B.W.G
8/3	8/9	9/3	9/9	10/3	11/-	11/9	12/6	13/6	per cwt

	Per ton.			Per ton.	
Cast-Iron Columns	£7	10	0 to	£9	0 0
Cast-Iron Stanchions	7	10	0 ,,	9	0 0
Rolled-Iron Fencing Wire	8	5	0 ,,	8	10 0
Rolled-Steel Fencing Wire	7	5	0 ,,	7	10 0
,, ,, ,, Galvanised	8	15	0 ,,	9	5 0
Cast-Iron Sash Weights	5	0	0 ,,	5	5 0
Cut Floor Brads	9	15	0 ,,		—
Corrugated Iron, 24 gauge	16	0	0 ,,		—
Galvanised Wire Strand, 7 ply, 14 B.W.G.	14	5	0 ,,		—

B.B. Drawn Telegraph Wire, Galvanised—

0 to 8	9	10	11	12	B.W.G.
£10 10s.	£10 15s.	£11 0s.	£11 5s.	£11 15s.	per ton.

Cast-Iron Socket Pipes—					
3in. diameter	£6	2	6 to	£6	7 0
4in. to 6in.	6	0	0 ,,	6	5 0
7in. to 24in. (all sizes)	5	7	6 ,,	6	0 0

[Coated with composition, 5s. 0d. per ton extra, turned and bored joints, 5s. 0d. per ton extra.]

Pig Iron—	Per ton.			
Cold Blast, Lilleshall	110s. 0d.	to	117s. 6d.	
Hot Blast, ditto	70s. 0d.	,,	75s. 0d	

Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—

Gas-Tubes	75 p.c.
Water-Tubes	72½ ,,
Steam-Tubes	67½ ,,
Galvanised Gas-Tubes	65 ,,
Galvanised Water-Tubes	62½ ,,
Galvanised Steam-Tubes	57½ ,,

OTHER METALS.

Spelter, Silesian	Per ton	£20	5	0 to	£21	7	6
Lead Water Pipe, Town		21	10	0 ,,		—	
,, ,, ,, Country		22	5	0 ,,		—	
Lead Barrel Pipe, Town		22	10	0 ,,		—	
,, ,, ,, Country		23	5	0 ,,		—	
Lead Pipe, Tinned inside, Town		23	10	0 ,,		—	
,, ,, ,, ,, Country		24	5	0 ,,		—	
Lead Pipe, Tinned inside and outside ..... Town		26	0	0 ,,		—	
,, ,, ,, ,, Country		26	15	0 ,,		—	
Composition Gas-Pipe, Town		24	10	0 ,,		—	
,, ,, Country		25	5	0 ,,		—	
Lead Soil-pipe (up to 4½in.) Town		24	10	0 ,,		—	
,, ,, ,, Country		25	5	0 ,,		—	
[Over 4½in. £1 per ton extra.]							
Lead Shot, in 28lb. bags		24	15	0 ,,		—	
Copper Sheets, sheathing & rods		82	0	0 ,,	82	10	0
Copper, British Cake and Ingot		78	10	0 ,,	79	0	0
Tin, English Ingots		174	10	0 ,,	175	0	0
Do., Bars		174	10	0 ,,	175	0	0
Pig Lead, in 1cwt. pigs (Town)		19	0	0 ,,		—	
Sheet Lead, Town		21	0	0 ,,		—	
,, ,, Country		21	15	0 ,,		—	
Genuine White Lead		30	15	0 ,,		—	
Refined Red Lead		24	0	0 ,,		—	
Sheet Zinc		29	0	0 ,,		—	
Old Lead, against account		16	10	0 ,,		—	
Tin	per cwt.	10	0	0 ,,		—	
Cut nails (per cwt. basis, ordinary brand		0	11	3 ,,		—	

TIMBER.

CONSTRUCTIONAL.

Yellow Pine Deals, Quebec, per standard:—	1st quality	£38	0	0 to	£45	0	0
,, ,, ,,	2nd ,,	26	0	0 ,,	32	0	0
,, ,, ,,	3rd ,,	16	0	0 ,,	18	10	0
Spruce Deals: St. Johns		10	0	0 ,,	11	10	0
,, ,, Miramichi		9	10	0 ,,	10	10	0
,, Boards: Swag		11	0	0 ,,	12	0	0
Red Deals: Archangel	1st quality	21	0	0 ,,	24	0	0
,, ,, ,,	2nd ,,	16	0	0 ,,	19	0	0
,, ,, ,,	3rd ,,	12	0	0 ,,	14	0	0
,, ,, St. Petersburg—							
,, ,, ,,	1st quality	16	10	0 ,,	18	0	0
,, ,, ,,	2nd ,,	14	10	0 ,,	15	10	0
,, ,, Wyburg & Uleaborg		12	10	0 ,,	15	0	0
Gefle, Gothenburg, and Stockholm		12	10	0 ,,	17	0	0
White Deals: Crown		14	0	0 ,,	15	10	0
,, ,, Seconds		11	10	0 ,,	13	0	0
Flooring: White and Planed—							
1st and 2nd quality mixed		10	15	0 ,,	11	15	0
1st, 2nd, & 3rd quality mixed		10	5	0 ,,	11	0	0
Red Planed, 1st quality		14	10	0 ,,	17	0	0
Pitch Pine: Prime Deals and Boards		18	0	0 ,,	23	0	0
Lignum Vitæ	Per ton	7	0	0 ,,	14	0	0

	Per cubic foot.					
Yellow Pine Logs (waney board)	0	5	0 ,,	0	5	6
Pitch Pine Logs	0	2	0 ,,	0	2	6
Birch: Quebec Logs	0	2	3 ,,	0	2	9
Oak: Austrian Wainscot	0	7	0 ,,	0	8	0
Mahogany: Gaboon	0	2	0 ,	0	2	3

FURNITURE AND HARDWOODS.

Teak: Burmese, per load, 50ft.	£20	0	0	to	£35	0	0
Teak: Java, per load, 50ft.	16	0	0	,,	21	0	0
	Per cubic foot.						
Oak Planks: U.S.A., imported	0	1	9	to	0	3	6
,, Boards ,, ,, Prm.	0	3	0	,,	0	3	6
,, ,, ,, ,, Mdm.	0	2	6	,,	0	2	9
Sequoia (Californian Redwood)	0	2	4	,,	0	3	6
Birch: Quebec logs	0	2	3	,,	0	2	9
,, ,, sawn planks	0	1	3	,,	0	2	0
Oak: Austrian Wainscot	0	7	0	,,	0	8	0
Walnut: Prime boards and planks	0	6	0	,,	0	6	6
Walnut: Mdm. ,, ,,	0	3	6	,,	0	4	6
Greenheart: Hewn logs	0	3	3	,,	0	4	0
Cedar: Cigar box	0	4	9	,,	0	5	6
Satin Walnut: Imp. sawn boards, prime	0	2	4	,,	0	2	9
Orham: Imp. sawn boards, prime	0	2	0	,,	0	2	3
Mahogany: St. Domingo, Cuba, and Honduras	0	6	0	,,	0	9	0
,, African, Assinee, &c.	0	5	0	,,	0	6	6
,, Lagos and Benin	0	4	6	,,	0	6	0
,, Sekondi and Cape Lopez	0	3	0	,,	0	4	0
,, Gaboon	0	2	0	,,	0	2	0
Satinwood: West Indian	0	10	0	,,	0	14	0
Rosewood Per ton	8	0	0	,,	12	0	3
Lignum Vitæ ,,	7	0	0	,,	14	0	0

STONE.*

Red Mansfield, in blocks per foot cube	£0	2	4
Darley Dale, ditto ,,	0	2	3
Red Corsehill, ditto ,,	0	2	3
Closeburn Red Freestone, ditto ,,	0	2	0
Ancaster, ditto ,,	0	1	10
Greenshill, ditto ,,	0	1	10
Chilmark, ditto (in truck at Nine Elms) ,,	0	1	10½
Hard York, ditto ,,	0	2	0
Ditto ditto 6in. sawn both sides, landings, random sizes per foot sup.	0	2	8
Ditto ditto 3in. slab sawn two sides, random sizes ,,	0	1	3

* All F.O.R. London.

Bath Stone, delivered on road waggons, Paddington Depot per foot cube	0	1	7½
Ditto, ditto, Nine Elms Depot ,,	0	1	9½
Beer Stone, delivered on rail at Seaton Station ,,	0	1	0
Ditto, delivered at Nine Elms Station ,,	0	1	6½

Portland Stone, in random blocks of 20ft. average:—

	Brown Whit Bed. Per foot cube.	White Base Bed
Delivered on road waggons at Paddington Depot, Nine Elms Depot, or Pimlico Wharf	... £0 2 3	... £0 2 4½

SLATES.

	in. in.	£	s.	d.	per 1,000 of
Blue Portmadoc	20×10	12	12	6	1,200 at r.stn.
,, ,,	16× 8	6	12	6	,, ,,
Blue Bangor	20×10	13	2	6	,, ,,
,, ,,	20×12	13	17	6	,, ,,
First quality	20×10	13	0	0	,, ,,
,, ,,	20×12	13	15	0	,, ,,
,, ,,	16× 8	7	5	0	,, ,,
Eureka unfading green	20×10	15	17	6	,, ,,
,, ,,	20×13	18	7	6	,, ,,
,, ,,	18×10	13	5	0	,, ,,
,, ,,	16× 8	10	5	0	,, ,,
Permanent green	20×10	11	12	6	,, ,,
,, ,,	18×10	9	12	6	,, ,,
,, ,,	16× 8	6	12	6	,, ,,

BRICKS.

(All prices net.)

First Hard Stocks	£1	15	0	per 1,000 alongside, in	
Second Hard Stocks	1	11	0	,, ,,	river.
Mild Stocks	1	9	0	,, ,,	
Picked Stocks for Facings	2	5	0	,,	delivered at rly. stn.
Flettons	1	10	0	,, ,,	
Pressed Wire Cuts	1	18	0	,, ,,	
Red Wire Cuts	1	14	0	,, ,,	
Best Fareham Red	3	12	0	,, ,,	
Best Red Pressed Ruabon Facing	5	0	0	,, ,,	
Best Blue Pressed Staffordshire	3	15	0	,, ,,	
Ditto Bullnose	4	0	0	,, ,,	
Best Stourbridge Firebricks	3	14	0	,, ,,	
2½in. Best Red Accrington Plastic Facing Bricks	4	10	6	,,	Net, delivered in full truck loads in London.

"Accrington Best Red Plastic Facing Bricks per 1,000	£2 10 0
3⅜" ditto Second Best Plastic ditto	2 2 6
Ditto Ordinary Second Bricks	1 11 3
Ditto Plastic Engineering Bricks	1 17 6
Sewer Arch Brick not more than 3⅜" in thickest part	2 0 0
3⅜" Chimney Bricks fit for outside work	2 6 0
3⅜" ditto ditto through and through	2 0 0
3⅜" Beaded, Ovolo and Bevel Jambs; Octagons; 2¼" and ½" radius Bullnoses; Stock patterns	3 7 6
Accrington Air Bricks, 9"×2 course deep, each	0 0 6
Ditto ditto 9"×1 course ,,	0 0 3

Accrington Camber Arches:—

3 course deep, 4½" soffit, per foot opening							0	1	3
4	ditto	4½"	ditto	ditto	ditto	...	0	1	8
5	ditto	4½"	ditto	ditto	ditto	...	0	2	1
6	ditto	4½"	ditto	ditto	ditto	...	0	2	6
3	ditto	9"	ditto	ditto	ditto	...	0	2	1
4	ditto	9"	ditto	ditto	ditto	...	0	2	11
5	ditto	9"	ditto	ditto	ditto	...	0	3	9
6	ditto	9"	ditto	ditto	ditto	...	0	4	6

Net free on rail* or free on boat at works.

GLAZED BRICKS.

HARD GLAZES, (PER 1,000.)

White, Ivory, and Salt Glazed. Best.	Buff, Cream, Other Seconds.	Best. & Bronze.	Colours.	Second Colours.
Stretchers—				
£12 7 6	£10 17 6	£13 17 6	£17 17 6	£12 7 6
Headers—				
11 17 6	10 7 6	13 7 6	17 7 6	11 17 6
Quoins, Bullnose, and 4½in. Flats—				
15 17 6	14 17 6	17 17 6	21 7 6	15 17 6
Double Stretchers—				
17 17 6	16 7 6	20 17 6	24 7 6	17 17 6
Double Headers—				
14 17 6	13 7 6	17 17 6	21 7 6	14 17 6
One side and two ends, square—				
18 17 6	17 7 6	21 17 6	26 7 6	18 17 6
Two sides and one end, square—				
19 17 6	18 7 6	22 17 6	26 17 6	19 17 6
Splays and Squints—				
17 7 6	15 17 6	21 17 6	24 17 6	17 7 6
Plinth and Hollow Bricks.	Stretchers and Headers—			
5d. each	4d. each	6d. each	6d. each	5d. each
Double Bullnose, Round Ends, Bullnose Stops—				
5d. each	4d. each	6d. each	6d. each	5d. each
Rounded Internal Angles—				
4d. each	3d. each	5d. each	5d. each	4d. each

MOULDED BRICKS.

Stretchers and Headers—				
8d. each	8d. each	8d. each	8d. each	8d. each
Internal and External Angles—				
1/2 each	1/2 each	1/2 each	1/2 each	1/2 each
Cill Bullnose, Stretchers and Headers—				
5d. each	4d. each	6d. each	6d. each	5d. each
Majolica or Soft Glazed Stretchers and Headers				Per 1,000 £22 17 6
,, ,, Quoins and Bullnose				27 17 6
Compass bricks, circular and arch bricks of single radius £6 per 1,000 over above list for their respective kinds and colours				Not exceeding 9in.
Camber arch bricks, any kind or colour, 1s. 2d. each				by 4½in. by 2⅞in.

Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.

* These prices are carriage paid in full truck loads to London Stations.

	s.	d.	
Thames Sand	7	6	per yard, delivered
Pit Sand	7	0	,, ,,
Thames Ballast	6	0	,, ,,

	s.	d.		Per ton,
Best Portland Cement	36	0	to 41	0 delivered
Ground Blue Lias Lime	21	0	per ton delivered.	

Exclusive of charge for sacks.

	s.	d.	s.	d.	Per yard,
Grey Stone Lime	13	6	to 14	0	delivered
Stourbridge Fireclay in sacks	27s.	0d.	per ton at railway station.		

TILES.

	s.	d.	Dlvrd. at
Plain red roofing tiles	42	0	per 1000 ry. stn.
Hip and Valley tiles	3	7	per doz. ,, ,,
Broseley tiles	50	0	per 1000 ,, ,,
Ornamental tiles	52	6	,, ,, ,,
Hip and Valley tiles	4	0	per doz. ,, ,,
Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000 ,, ,,
Ornamental do.	60	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	0	,, ,, ,,
Selected "Perfecta" roofing tiles:—Plain tiles (Peake's)	46	0	per 1000 ,, ,,
Ornamental do.	48	6	,, ,, ,,
Hip tiles	3	10½	per doz. ,, ,,
Valley tiles	3	4½	,, ,, ,,
"Rosemary" brand plain tiles	48	0	per 1000 ,, ,,
Ornamental tiles	50	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	8	,, ,, ,,
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 ,, ,,
Hand-made sand-faced	45	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	6	,, ,, ,,
Hartshill" brand plain tiles, sand-faced	50	0	per 1000 ,, ,,
Pressed	47	6	,, ,, ,,
Ornamental do.	50	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
alley tiles	3	6	,, ,,

OILS.

Rapeseed, English pale, per tun	£28	15	0	to	£29	5 0
Do., brown ,, ...	26	15	0	,,	27	5 0
Cottonseed, refined ,, ...	29	0	0	,,	30	0 0
Olive, Spanish ,, ...	39	10	0	,,	40	0 0
Seal, pale ,, ...	21	0	0	,,	21	10 0
Cocoanut, Cochin ,, ...	46	0	0	,,	46	10 0
Do., Ceylon ,, ...	42	10	0	,,	43	0 0
Do., Mauritius ,, ...	42	10	0	,,	43	0 0
Palm, Lagos ,, ...	33	5	0	,,	33	5 0
Do. Nut Kernel ,, ...	35	0	0	,,	35	10 0
Oleine ,, ...	17	5	0	,,	19	5 0
Sperm ,, ...	30	0	0	,,	31	0 0
Lubricating U.S. per gal,	0	7	0	,,	0	8 0
Petroleum refined ,, ...	0	0	6½	,,	0	0 6¾
Tar, Stockholm per barrel	1	6	0	,,	1	10 0
Do., Archangel ,, ...	0	19	6	,,	1	0 0
Linseed Oil per gal.	0	2	5	,,	—	
Baltic Oil ,, ...	0	2	7	,,	—	
Turpentine ,, ...	0	2	9	,,	—	
Putty (Genuine Linseed Oil) per cwt.	0	8	0	,,	—	
Pure Linseed Oil "Stority" Brand ,,	0	10	0	,,	—	

GLASS (IN CRATES).

	15oz.	21oz.	26oz.	32oz.
English Sheet Glass:				
Fourths	2d.	3d.	3½d.	4⅝d.
Thirds	2½d.	3½d.	4⅓d.	5⅝d.
Fluted Sheet	2⅝d.	3⅝d.	6½d.	7d.

	⅛in.	3/16in.	¼in.
Hartley's English Rolled Plate:	2½d.	2⅝d.	3d.

	White.	Tinted
Figured Rolled and Reponssine	3½d.	5d.

VARNISHES, &c.

	Per gallon.		
Fine Pale Oak Varnish	£0	8	0
Pale Copal Oak	0	10	0
Superfine Pale Elastic Oak	0	12	6
Fine Extra Hard Church Oak	0	10	0
Superfine Hard-drying Oak, for seats of churches	0	14	0
Fine Elastic Carriage	0	12	0
Superfine Pale Elastic Carriage	0	16	0
Fine Pale Maple	0	16	0
Finest Pale Durable Copal	0	18	0
Extra Pale French Oil	1	1	0
Eggshell Flatting Varnish	0	18	9
White Copal Enamel	1	4	0
Extra Pale Paper	0	12	9
Best Japan Gold Size	0	10	9
Best Black Japan	0	16	0
Oak and Mahogany Stain	0	9	0
Brunswick Black	0	8	0
Berlin Black	0	16	0
Knotting	0	10	0
French and Brush Polish	0	10	0

TRADE NOTES.

Messrs. Siemens Brothers Dynamo Works Limited have obtained a contract for the supply of tractor-type "Tantalum" lamps for the county borough of Walsall Tramways.

Boyle's latest patent "air-pump" ventilators have been applied to the new police-court, Great Marlborough-street, W.

The Simon Langton Schools, Canterbury, are being supplied with Shorland's warm-air ventilating patent Manchester grates and patent hygienic inlet ventilators by Messrs. E. H. Shorland and Brother, Ltd., of Failsworth, Manchester.

Mr. J. Emmerson, of Norton-on-Tees, has been appointed surveyor to the Whitby Rural District Council.

At the Jesuits' Church, Richmond Hill, Bournemouth, a new bay and a west front with projecting baptistery have been added to the nave at a cost of £1,500. The architect for this and a previous extension of the building, is Mr. A. J. Pilkington.

Canon Cooke-Yarborough, vicar of Christchurch, Hants, writes that a sum of money having been bequeathed for the restoration of the Lady-chapel at Christchurch Priory, Mr. W. D. Caroe, F.S.A., has been requested to furnish a report upon the whole subject.

The fine parish church of Blakeney, Norfolk, was reopened last week after the restoration of the chancel. The nave was restored at a cost of £6,000 twenty-two years ago. The present work has been executed from plans by Mr. H. J. Green of Norwich. It has cost £2,600. The special gifts include a new pulpit of oak and stone, the restoration of the rood and figure on the ancient rood beam, the filling of the great west window in the tower with stained glass, and the fitting-up of the Lady-chapel with oak-panelling, reredos, gilded altar, and stained-glass windows.

TO CORRESPONDENTS.

It is particularly requested that all drawings and all communications respecting illustrations or literary matter, books for review, etc., should be addressed to the EDITOR of the BUILDING NEWS, Effingham House, 1, Arundel-street, Strand, W.C., and not to members of the staff by name. Delay is not infrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

*** Drawings of selected competition designs, important public and private buildings, details of old and new work, and good sketches are always welcome, and for such no charge is made for insertion. Of more commonplace subjects—small churches, chapels, houses, etc.—we have usually far more sent than we can insert, but are glad to do so when space permits on mutually advantageous terms, which may be ascertained on application.

When favouring us with drawings or photographs, architects are asked kindly to state how long the building has been erected. It does neither them nor us much good to illustrate buildings which have been some time executed, except under special circumstances.

RECEIVED.—J. F. and Son.—W. H. S. and Son.—T. E. R.—E. B. D. and Sons.—R. and J. B.—J. A.—C. J. W. and Co.—P. and Sons.—J. P.—S., Ltd.—C. M. and Co.—T. L. and Son.—H. G. G. and Son.—M. C.—H. and Son.—G. P.—J. F.—J. E. and Son.—H. H.—B. of T.—G. H. and Co.—D. and Co.

M. C.—Yes.

D. F. H.—Kindly send.

T. P. C.—Given several times.

E. J. H.—We quite agree, but we said much the same ourselves last week.

LIST OF COMPETITIONS OPEN.

Dec. 23	Laying-out about 16 Acres, and Erecting about 310 Houses, Bolton-upon-Dearne	£50, £30	J. Ledger Hawksworth, Council Offices, Bolton-upon-Dearne, Rotherham.
,, 29	New Offices for Board of Trade, Whitehall Gardens, S.W. [R. Blomfield, M.A. (Oxon), A.R.A., P.R.I.B.A. J. Belcher, R.A., and Sir Aston Webb, C.V.O., C.B., R.A., Assessors] Sketch Designs, ten will be Selected,		
1914.	with £300 Honorarium each		The Secretary, H.M. Office of Works, Storey's Gate, S.W.
Jan. 2	Manchester Royal Exchange, Additional New Buildings and Alterations. Open to all architects in U.K. Not more than 12 architects of repute have been specially invited; each of whom will receive one hundred guineas. The three selected architects will receive one hundred guineas each. Author of design placed first will be appointed. (J. S. Gibson, F.R.I.B.A., Assessor)		Rich. J. Allen, Master, Royal Exchange, Manchester.
,, 20	Masonic Temple, Toronto (Estimated cost, about £51,400)	Five unsuccessful competitors to receive 750dol., 500dol., and 250dol. respectively	W. H. Best, 181, Avenue-road, Toronto.
Feb. 1	Municipal Technical Institute, Pool Meadow, Coventry		G. Sutton, Clerk, Education Office, 44, Bayley-lane, Coventry.
,, 15	Savings Bank, Verona (Five Assessors)	£1,200, £600	The Savings Bank, 1, Via Garibaldi, Verona.
Mar. 20	Public Museum and Art Gallery, Belfast (John J. Burnet, A.R.S.A., LL.D., Assessor)	Selected Architect to carry out work; second, £100; third, £75; fourth, £50	R. Meyer, Town Clerk, City Hall, Belfast.
April 2	Departmental and Courts Buildings, Ottawa (T. E. Collcutt, J. H. G. Russell, and J. O. Marchand, Assessors). Double Competition, five unsuccessful competitors in second to receive 3,000dol. each		R. C. Desrochers, Department of Public Works, Ottawa, Ont.
May 4	New St. Paul's Bridge, Designs for (Sir W. Emerson, P.P.R.I.B.A., Assessor)	£300, £100	The Town Clerk, Hallkeeper's Office, Guildhall, E.C.
No date	Town Hall and Municipal Offices, Church-street, Barnsley	£100, £50, and £25	W. P. Donald, Town Clerk, Town Clerk's Office, Barnsley.

LIST OF TENDERS OPEN.

BUILDINGS.

Dec. 20	Recorder and Valve House, Ponden Reservoir, Haworth	Keighley Corporation	M. R. Barnett, M.I.C.E., Town Hall, Keighley.
,, 20	School (130 places), Wickford	Essex Education Committee	F. Whitmore, County Archt., 73, Duke-street, Chelmsford.
,, 20	Military Hospital, Namur		Commandant du Genie 18, Rue Hastedon, Namur-Sud.
,, 20	Coal and Coke Stores, Beaver-place, Worksop	Gas Co.	A. H. Richardson, Archt., Market-place, Worksop.
,, 20	Metal Shedding, Casteau Plaine des Manouvres, Mons		Direction des Ponts, Rue des Compagnons Mons, Belgium.
,, 20	Riding School and Drill Hall, Glynne-road, Bangor	Carnarvonshire Terr. Force Assoc.	E. Evans, Archt., 8, Castle-street, Carnarvon.
,, 22	Shop, Beach-street, Bare, Morecambe	Lancaster Co-op. Soc., Ltd.	Austin and Paley, Archts. Lancaster.
,, 22	Public Offices, Sale	Urban District Council	C. T. Adshead, Archt., 4, St. Ann's-square, Manchester.
,, 22	Three Electricity Sub-Stations, Hackney, N.E.		The Borough Engineer, Town Hall, Mare-street, Hackney.
,, 22	Miniature Rifle Range, Sutton	Surrey Terr. Force Assoc.	Jarvis & Richards, Archts., 10, Queen Anne's Gate, S.W.
,, 22	Council School, Skipton-road, Harrogate	Education Committee	C. H. Channon, Archt., Market-street, Malton.
,, 22	Villa, Barnsole-road, Gillingham	W. Tanner	F. D. Pott, Archt., 54, Copenhagen-road, Gillingham, Kent.
,, 22	Six Cottages, Wrafton-lane, Braunton	H. Isaac	H. S. Johnson, 56, Boutport-street, Barnstaple.
,, 22	School, Toll Bar, Bentley	West Riding Education Committee	The Education Architect, County Hall, Wakefield.
,, 22	Children's Block (150 beds), Township Infirmary, Leeds	Guardians	T. Winn and Sons, 84, Albion-street, Leeds.
,, 23	Dispensary and Stock Rooms, Finkle-street, Kendal	J. Reiss	S. Shaw, F.R.I.B.A., Kendal.
,, 23	Filter House, Castlesbaw, Delph	Oldham Waterworks Committee	C. J. Batley, M.I.C.E., Piethorne, New Hey.
,, 23	Labour Exchange, Wallsend	H.M. Works Commissioners	The Secretary, H.M. Office of Works, Storey's Gate, S.W.
,, 23	Public Offices, Hornchurch	Parish Council	W. C. Allen, Clerk, Council Office, Hornchurch, Essex.
,, 23	Congregational Sunday School, Dewsbury		Kirk, Sons, and Ridgway, Archts., Market-place, Dewsbury.
,, 24	Classrooms, Tullynessle School, Burnside of Fowlis		C. Murray, Burnside of Fowlis.
,, 24	Farm Steading, Newfield, Blackhills		J. Wittet, Archt., Elgin.
,, 27	Four Cottages, Liddington	Highworth Rural District Council	J. P. Kirby, Clerk, 100, Victoria-road, Swindon.
,, 29	Cemetery Chapels and Lodge, Dartford	Urban District Council	W. Kay, Clerk, Council Offices, Dartford.
,, 29	Workshop, Duke-street, Norwich	Corporation	The City Electrical Engineer, Duke-street, Norwich.
,, 29	Claremont Hydro Hotel, Rhyl	Jones Homes Trustees	J. H. Swainson, Archt., 1, Hill-street, Wrexham.
,, 29	Shops, Tangier		Le President de la Commission Generale, Dar En-Niaba, Tangier.
,, 30	Stewards' House and Six Cottages, Beverley	East Riding Asylum Visitors Com.	C. W. Hobson, Clerk, 28, Lairgate-gate, Beverley.
,, 30	Assistant Medical Officer's Quarters, Asylum, Canterbury	Visiting Committee	Jennings and Gray, Archts., 4, St. Margaret's-st., Canterbury.
,, 31	Drill Hall, Bishop's Waltham	Hants Terr. Force Assoc.	Hair and Bucknill, Archts., 23, Portland-terrace, Southampton.
,, 31	Warehouses, Alterations to, No. 1 Leeds Zone	North-Eastern Railway Co.	The Company's Chief Engineer, York.
,, 31	Station Buildings, Repairs to, Scarborough	North-Eastern Railway	The Company's Chief Engineer, York.
,, 31	Schools, Additional Rooms, Chase Farm, Enfield	Edmonton Guardians	J. C. S. Mummery, Archt., 13, Fitzroy-square, W.
Jan. 1	Council Offices, The Knowle, Dawlish	Urban District Council	S. F. Churchward, Sur., High-street, Dawlish.
,, 1	Houses (50), Abertysswg	Tredegar Iron and Coal Co.	A. F. Webb, M.S.A., Tredegar Chambers, Blackwood, Mon.
,, 2	Pavilion, Additions to, Westbrook, Margate	Corporation	E. A. Borg, Boro' Eng., 13, Grosvenor-place, Margate.
,, 2	Veterinary Hospital, Officer's Quarters at, Woolwich	Secretary of State for War	The Director of Barrack Construction, 80, Pall Mall, S.W.
,, 5	Council Chambers and Offices, Sawbridgeworth	Urban District Council	W. Morris, Clerk, 15, Bell-street, Sawbridgeworth.
,, 5	Four Workmen's Dwellings, Harwell	Wantage Rural District Council	J. W. Harris, Eng., East Challow, Wantage.
,, 6	Council School, Additions to, Great Driffield	Education Committee	The Building Surveyor County Hall, Beverley.
,, 7	Council Schools (90 places), Armitage	Staffordshire Education Committee	G. Baltour, Director of Education, Education Offices, Stafford.
,, 7	Three New Farmsteads, Walton	West Riding Small Holdings Com.	The West Riding Land Agent, County Hall, Wakefield.
,, 7	Sanatorium, Middleton	West Riding Public Health Com.	The West Riding Architect, County Hall, Wakefield.
,, 7	Council Schools (128 places), Mavesyn Ridware	Staffordshire Education Committee	G. Balfour, Director of Education, Education Offices, Stafford.
,, 12	Goods Shed (664ft. by 100ft.), Merklands Quay, Partick	Clyde Navigation Trustees	T. R. Mackenzie, Sec., 6, Robertson-street, Glasgow.
,, 16	Oakwood-avenue Council School, Warrington	Buildings Committee	The Education Office, Warrington.
,, 19	Workhouse, Alterations and Additions to, Pontypridd	Guardians	A. Thomas & G. Morgan, Archts., 23, Gelliwastad-rd., Pontypridd
,, 24	New Post-Office, Barking	H.M. Works Commissioners	The Secretary, H.M. Office of Work, Storey's Gate, S.W.
No date	Palmerston Buildings, Reinstatement of, Bradford		W. Ross, Archt., Parkinson's Chmbrs., Hustlergate, Bradford.
do.	Warehouse, near Stone Exchange, Bradford		R. Drake, Archt., 4, Pearson-lane, Chellow Dean, Bradford.
do.	Store at Old Spirit Vaults, Bridgend	W. J. Rogers, Ltd.	G. F. Lambert and Son, Archts., Bridgend.
do.	Shop Premises, Willis-street, Warrington	Equitable Industrial Co-op. Soc., Ltd.	F. E. L. Harris, Archt., 1, Balloon-street, Manchester.

ELECTRICAL PLANT.

Dec. 21	Telephone Cables, Brussels		The Hotel des Postes, Place de la Monnaie, Brussels.
,, 22	Signalling Apparatus, Suburban Railways, Melbourne		Merz and McLellan, Con. Engs., 32, Victoria-street, S.W.
,, 22	Copper Track Bonds, Suburban Railways, Melbourne		Merz and McLellan, Con. Engs., 32, Victoria-street, S.W.
,, 23	Electrically Equipping Five Bridges, Ostend		The Direction des Ponts, 52, Boulevard du Regent, Bruxelles.
,, 31	Insulators, Brisbane	Postmaster's-General's Department	The Commonwealth Office, 72, Victoria-street, London, S.W.
,, 31	Plant, Carlisle	Corporation	F. W. Purse, City Elec. Eng., Victoria Viaduct, Carlisle.
Jan. 3	Electric Trolley Vehicle Equipment, Bradford	Corporation	F. Stevens, Town Clerk, Town Hall, Bradford.
,, 5	Electric Lighting Ainsworth Sanatorium, Bury	Joint Hospital Board	F. Wild, Clerk, Cross-street, Bury, Lancs.
,, 10	Plant, Johannesburg	Municipal Council	The Town Clerk, Municipal Offices, Johannesburg.
,, 21	Telegraph Instruments, Perth		The Deputy Postmaster-General, Perth, W.A.
,, 26	Six Electric Canes, Bassin-Canal Extension, Antwerp	Municipal Authorities	The Burgomaster, Hotel-de-Ville, Antwerp.
,, 27	Switchboards, Melbourne		The Deputy Postmaster-General, Melbourne, Australia.
Mar. 18	Switchboards, Sydney, N.S.W.		The Deputy Postmaster-General, Sydney, New South Wales.

ENGINEERING.

Dec. 20	Rebuilding West Burton Bridge, Aysgarth	North Riding County Council	The County Surveyor's Office, County Hall, Northallerton.
,, 20	Rebuilding Healaugh Bridge, Reeth and Muker	North Riding County Council	The County Surveyor's Office, County Hall, Northallerton.
,, 22	Tunnel (10 miles pipes 25in. diam.), Birkenhead	Corporation	Sir A. Binnie, Son, and Deacon, St. Stephen's House, S.W.
,, 22	Branch Railway (3 miles), Stockton to Billingham Beck	North-Eastern Railway Co.	C. F. Bengough, Eng., York.
,, 22	Retorts, Salford	Gas Committee	W. W. Woodward, Eng., Gas Offices, Bloom-street, Salford.
,, 22	Dock Gates, Dundee	Harbour Trustees	J. H. Thompson, M.I.C.E., M.Sc., Man. and Eng., Dundee.
,, 22	Fire-Engine, Frinton-on-Sea	Urban District Council	E. M. Bate, Fire Brigade Sec., Council Offices, Frinton-on-Sea.
,, 23	Gasholder Tank, New Hunstanton	Urban District Council	E. H. and S. E. Stevenson, 38, Parliament-street, Westminster.
,, 23	Steam Piping at Generating Station, Greenwich, S.E.	London County Council	The Clerk, County Hall, Spring Gardens, S.W.
,, 26	Railway Workshops, Santiago de Chile		Sub-Secretaria del Ministerio de Ferrocarriles de Chile, Santiago.
,, 29	Waterworks (17 miles cast-iron mains), Gillingham	Shaftesbury Rural District Council	Cotterell and Carr, Engs., 17, Old Queen-st., Westminster, S.W.
,, 29	Waterworks, Burnham-on-Crouch	Urban District Council	J. Cook, Sur., Council Offices, Burnham-on-Crouch.
,, 29	Waterworks, Neath	Corporation	D. M. Jenkins, A.M.I.C.E., Gwyn Hall, Neath.
,, 29	Timber Wharf (600ft. long), Aberdeen	Harbour Commissioners	R. G. Nicol, Eng., Aberdeen.

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Warehouse, Pentonville-road, N., for Messrs. Lilley and Skinner. Mr. A. Sykes, F.R.I.B.A., Architect.

"A Suppliant," Royal Academy Prize and Silver Medal Cartoon of "A Draped Figure," by Miss Hilda Marion Heeble.

Measured Drawings of the Dining-room and Drawing-room Fireplaces, Haddon Hall, Derbyshire, by Mr. H. A. Welch.

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REGISTRATION: THE PRESENT-DAY CASE.

The historical view of the Registration movement, which we published last week, will have demonstrated to our readers that this is not a question which has been suddenly sprung upon the profession, but the evolution of an opinion, the growth of which can be traced for a hundred and twenty years. This, of itself, is a warranty that that which is sought will eventually be obtained. The tide which has been so long steadily rising will not be easily withstood when it has reached the flood. Also, it indicates that the case, on which the now universally held opinion is based, must be a very strong one indeed. It has been put differently from time to time; it has appealed differently to men of successive generations; and now, at length, it is understood in its completeness, from the point of view both of the architect and of the general public. It has, too, formed the basis of the policy of both the Institute and the Society from the time of their foundation, as is indicated by their history; in the one case for long unconsciously, but in the other consciously and deliberately. All the numerous changes which have taken place at the Institute have tended thitherwards, even though ostensibly they may each have seemed to have been devised with the object of enhancing the prestige of existing members by forming new classes of lower rank, recruited from general practitioners of apparently lesser qualifications. Each change has been forced upon a reluctant and hesitating Council by pressure from outside. The Society, led by its Council, has made few structural changes yet, but has steadily pursued one policy, continuously strengthening its organisation and influence to that end.

Registration, as now understood, is not discrimination between competent and incompetent architects, but securing, as far as is humanly possible, the reasonable competence of all. The difficulty of discriminating—of determining upon a line of demarcation and adhering to it—was forcibly shown at the time of the enrolment of Licentiates at the Institute. Even if it were likely to be permitted, it would be impracticable; but it could not be permitted. Everyone who, at the time of the passing of an Architects' Registration Bill is earning his or her living by the practice of architecture, must be permitted to do so for life, subject to the payment of some small annual registration fee, and to the usual restrictions of professional conduct. In other words, all practising will have to be permitted to register as architects; but, once on the register, they would come under the control of the governing body, whatever that may be, and will be liable to be called to account, and even to be struck off the register, and so deprived of their means of livelihood, if they are guilty of anything unbecoming to their profession. Thus an architect and undertaker (to take an extreme case) would be eligible to register as an architect; but, having done so, he would soon be called upon either to abandon his business as an undertaker, or to retire from architecture. But the cases actually to be dealt with would probably be few, as the position would be well understood. All the same, the benefits of the Act would immediately be felt throughout the whole profession, owing to this improvement of control, and this would especially be the case in the provinces, where discipline and esprit de corps are notably lacking.

This, it may be said, will not secure universal fitness. This is only to be obtained by insisting that all who *in future* are admitted to the register shall have gone through a proper course of educational training, and have passed at least one examination (and preferably a series of such), to show that they have profited by their training to the extent of competency. This is exactly what has been done under the Registration Acts of other professions. It takes a whole generation to eliminate the comparatively incompetent who are admitted to the register at the outset, and to secure the competence of all whose names appear on the register; but the process commences at once, and proceeds so gradually, as to create no cases of injustice. We have a case in point in the Register of Associates of the R.I.B.A., which now contains very few names indeed, except those of tested men, who have not passed either the old voluntary, or the present compulsory examination, which first came into force in 1882. Moreover, it is unquestionably due to this large class that there has been the notable advance in architecture which all recognise to have taken place throughout the country of recent years, and it is reasonable to argue that if so much has been done by training and testing on proper lines a certain proportion of our architects, very much more will be possible when all have been trained to the same extent. Years ago, at the time of the agitation for the examination for Associates, and even when the Architects' Registration Bill was first drafted, the analogy had to be sought in other professions; now it is found in our own. It even goes further than the matter of the quality of our architectural achievements—though this is no small gain to the amenities of our country—it is to be seen also in a fuller sense of responsibility for sound construction, and in the general all-round competence in all that pertains to an architect's calling. For the general public, it is a great thing indeed that they can now go with confidence to the tested men and be sure that the buildings in which they invest their money are what they ought to be in all respects: well planned, suitable for their purpose, economically yet properly constructed, both as regards design and execution, healthy to live in, and artistic withal; and that they are dealing with professional men whose code of honour is high, and who will not "let them down." This is already possible almost everywhere; but it is, unfortunately, also possible, and often easy, to fall into the hands of the unprincipled commission-seeking shark, over whose doings there is no control. The passing of a proper Architects' Registration Bill would put such men under control at once, and eventually lead to their elimination, to the immense benefit of the public whom they badly serve and batten on.

At the present moment there is in existence the Architects' Registration Bill, which is to be introduced into Parliament next Session, after a lapse of eleven years. Perfect in its machinery, now brought completely up to date, it would, if passed, accomplish what is desired, in the interests of architects, architecture, and the public. There is also in existence a draft sketch for a very similar Bill which has been prepared by the Institute, and this would accomplish the same results if it were perfected and certain inherent faults eliminated which have caused the solicitors who have been consulted to declare against it. Frightened by this declaration, and by the consideration that the promotion of such a Bill would be costly, the Council of the Institute has put forward its scheme for the voluntary enrolment of architects, under a new Charter, as "Chartered Architects" in connection with the Institute; which scheme would not secure the desired objects at all, as it neither provides for the universal education of architects, nor protects the public. It is merely an unconscious development of the old policy of introducing new and lower classes into, or into connection with, the Institute, and so enhancing the position of the present members; though many of these are inclined to think that, on the contrary, their position would be lowered. It is being announced as a step towards Registration; but so was the formation of the class of Licentiates. It is nothing of the sort. It has no case whatever behind

it, either of demand or of expediency, or of prospective benefit to architecture; and it possesses no element of finality.

On this last ground alone it may be put out of consideration, for although much time may be wasted over it, attention must of necessity return to Registration—eventually, if not at once. The fact that the reintroduction of what is known as the Society's Bill is announced for the immediate future is enough to indicate that the subject is ripe for immediate, rather than deferred, discussion; but, really, so far as general principles are concerned, there is little to discuss. Omit the legalisation of a scale of charges, and there is nothing much to choose between the draft Bill published in the R.I.B.A. Journal for December 6 and the fully-considered measure which the Society has ready for presentation to Parliament, except that one is only a draft as yet, while the other is carefully perfected—the advantage in this respect being wholly on one side, and not to be neglected lightly, even by the Institute leaders who are so cautious in the expenditure of funds, all the cost and trouble of perfecting having already been incurred.

But there is another difference, small in appearance, but really great. Under both measures there would be established a General Council to administer the Act; but, whereas under the Society's Bill this would be reasonably representative of all interests, including that of the public by nominations from the Privy Council, and would serve for five years at a time, and thus develop continuity of policy, under the Institute's Draft it would be swamped by the Institute Council (already overburdened with work), and be subject to the annual elections of that body, with all their possibilities of sudden and capricious changes. Also, in the one case the General Council would administer its own funds, and in the other the funds would be available for Institute purposes, and practically at the disposal of a body annually elected by one section of registered architects only. This, like the proposal to include a scale of charges, has been condemned by the Institute's own advisers, as being sufficient in itself to wreck the measure in Parliament.

Boiled down, therefore, it comes to this: that there is only one practicable Architects' Registration Bill, and that is the one which is ready. Whether the credit of securing its passing is to be claimed by Society or Institute matters little now, and will matter less in ten years' time; and as matters stand there seems to be no reason why either should claim more credit than the other. Both have the same object in view, and are pressing towards it in friendly rivalry; why not, then, join forces and proceed unitedly? It would be petty and mean for either to attempt to "dish" or to supplant the other, like the "ins" and "outs" in political life; and it would inevitably lead to wreckage of the prospects for which both are striving. If the way to unity of action does not now lie in amalgamation, surely another way could be found by means of tact and a little statecraft. Thus, and thus only, appears to lie the road, so far as can be seen just now.

But what, it may be asked—and perhaps feared—would be the result of the passage of the Bill as it now stands upon the Institute and the Society? It is a point that is worth considering, though it may be said at once that these bodies exist for the advancement of architecture, and not architecture for these bodies, so that if it be necessary that they should suffer, even to the extent of extinction, for the sake of architecture, they will have played their part, and all the more nobly if they foresee and face the situation. No less than this, in fact, is what the Society has always anticipated for itself, and with this in prospect the Bill has been drafted, giving little to that body, even of representation on the General Council, and much to the Institute, including the management of the test examinations, in order that these might be so arranged as also to serve as the qualifying examinations for Associateship, to which a large proportion of those who passed would undoubtedly proceed. Few, comparatively, would join the Society, and the Society would cease to exist for want of support.

On the other hand, if the Institute were so ill-advised as to hold a further examination for Associateship beyond what was essential for Registration—a degree of folly which can hardly be apprehended—then it would be the Institute which would suffer, while the Society would gain; or just possibly there would be sufficient numerical support for both to co-exist as they do now, coming nearer and nearer to each other in qualification and prestige as time advanced. The opinion has been expressed from time to time that the majority of practitioners would join neither body, but would prefer to remain unorganised so long as they were on the register; but this is contrary to experience elsewhere, and even more contrary to the tendencies of the present time, which are all towards corporate, rather than individual, action in every walk of life. Thus the future, of the Institute at least, may be faced with equanimity, granted that wise counsels prevail; and the Society is prepared for extinction if it be the necessary price to pay for the accomplishment of the object of its existence. But if both bodies can be preserved, so much the better, for it is by means of rivalry that progress is achieved, and there will doubtless be still plenty to be done in that direction after the Registration has been secured. Advance in medicine and surgery did not stop at the passing of the Medical Act in 1854. It may far more truly be said to have only then commenced. But first, let the Registration be real and not a sham; by Act of Parliament compulsorily, and not by Charter voluntarily; and complete like that of the doctors, and not partial, like that of the dentists—about which it is only necessary to talk to a qualified dental surgeon to receive considerable enlightenment.

THE BRITISH SCHOOL AT ROME: PRIZE DESIGNS.

The Municipality of Rome gave a fine site for the new British School in Rome, and Mr. E. L. Lutyens, A.R.A., is now erecting the buildings on the lines of his design carried out for the English section of the Rome Exhibition a short time ago. The Commissioners of the 1851 Exhibition in London have applied £2,000 annually towards the endowment of scholarships in Painting, Sculpture, and Architecture, tenable at this school, which will rank with the national schools established in Rome by France, Germany, America, and other countries. It has been furnished with a Royal Charter, and the scholarships are open to students of British nationality under the age of thirty years. These studentships are of the yearly value of £200, tenable for three years.

An exhibition is now on view in the galleries of the Royal Academy of the first competition, which has just been held, so that the works in Architecture, Sculpture, and Decorative Painting sent in by the successful candidates, together with the other competitors' designs, can be seen by the public up to Tuesday, December 30, between the hours of eleven and four. The result, as a whole, is decidedly encouraging, though in regard to the styles of the architectural schemes and the mannerisms of draughtsmanship adopted, the work almost entirely displays the influence of the Ecole des Beaux Arts, Paris, while typical British ideals in design are singularly absent. Under the circumstances, and considering the grandiose character of the problem—"A Civic Centre, or Modern Forum, surrounded by Important Buildings"—this is scarcely to be wondered at, particularly as two of the most capable candidates happen to be French Canadians who have studied in French ateliers, to say nothing of the practice of the American students in Rome, who have so strongly and invariably hitherto favoured Parisian methods and taste, thus helping to establish a precedent which has had, in its turn, much influence at the Liverpool School of Architecture, where the winning student, Mr. H. L. Bradshaw, has had his training.

He has submitted five large drawings of a very distinguished kind, considering that the whole of them had to be executed during a period of three weeks at the Royal Institute of British Architects, where the competitors were allotted separate cubicles, where they carried out their work under the supervision of Moderators. Each competitor had to give up his sketch design at the end of the first day of the competition, and so proceed from memory. Mr. Bradshaw's best work is the ½in. detail of the chief building, devoted to the Foreign Office, and showing the national monument set in front of a segmental terrace. The whole drawing is artistically tinted, and includes the cupola to the reception-hall in the rear of this fine frontispiece. Behind this hall the suite of reception-rooms occur, bisected by the grand staircase. On one side of this fan-shaped building stands the Conference Hall to the right, with the great dining-room to the left, both having circular waiting-halls at the extremities of the frontal loggia, which is colonnaded, and has the chief range of offices behind it. The style is Neo-Grec, freely handled. In the middle of the main approach stands a Classic church, serving to regulate the traffic. There are also carriage entrances to the Forum on both sides by way of approaches through half-circular open spaces flanking the buildings which complete the great quad. In the midst of it is a pool geometrically set out, with twin fountains at its ends. The fan-like shape of the Foreign Office building was determined by the radial thoroughfares of the city, and thus this Civic Centre gives the key to a well-contrived scheme of town planning such as few of the other competitors have had the foresight to bring into their purview. Undoubtedly, this comprehension of idea counted for much in making this award. The plan in iself is compact, and the lay-out is emphasised by the curved frontages of the premises immediately flanking the Foreign Office, which makes the keynote of the composition, so set at the end of the Forum, in front of the chief approach, as the main object seen at the end of the vista from the base of the Forum. Naturally, these sweeping contours and angular returns, devised to accommodate the radial streets beyond, necessitated awkward shapes to be overcome in the buildings under review; but these details have been treated with no little skill, and irregular internal open areas aid the solution of this part of Mr. Bradshaw's scheme.

Mr. Louis de Soissons comes second as

the winner of the Jarvis Studentship of the Institute. He also submits five fine sheets of drawings which are brightly executed in an attractive and masterly way. He, too, shows an excellent detail, finished in pencil, and delicately washed-in, with chic effect, and very French in the style of shadings, even if the detail in parts favours some coarseness in scale. The principal block of Mr. de Soisson's buildings is located to the left, being planned longitudinally in regard to the Forum. This scheme shows far less connection with the environments of the Civic Centre than is displayed by Mr. Bradshaw's forethought.

Mr. W. Harding Thompson contents himself with a series of disconnected buildings individually grouped round his great square, or Grande Place, and these are unconcerned with the immediate surroundings of the city or its thoroughfares.

The adjoining set of drawings is by Mr. Ernest Cormier, who is much more capable, and his work is handled broadly, though his quadrangle is sacrificed too much to the enormous column monument set in a sunk paved space, or Forum, very awkward to traverse, and a long way to go round every time the public has to reach one departmental building after leaving another. The detail of his façades is large in conception; but the buildings, as a whole, tend towards a commonplace type of outline. The drawing of the plan gives an unquiet and restless appearance, due to its over-elaboration.

Mr. T. Braddock is severe and scholarly. The segmental ends to his Forum are marked by two domed public halls flanking the national monument. The Foreign Office, with its stupendous attic over the Reception Hall, is no doubt handsome in idea, while it is in contrast with the cupola spanning the entrance vestibule, which likewise is big in proportion. The circular terminating blocks, already alluded to, are somewhat prison-like as seen in the perspective from their exteriors, and on their inner fronts their arcades end abruptly in big niches, and lead to nowhere.

The remaining competitor, Mr. Edward G. Wylie, has not been very successful in his proposal, which he has scarcely mastered in a way worthy of such a competition.

The Jarvis Studentship prize designs are displayed in the first gallery at Burlington House. The Institute offered this honour to an Associate or Student of the R.I.B.A. passing next in order to the winner of the Rome Scholarship, and Mr. Louis de Soissons has thus honourably secured £200 a year for two years to enable him to study at the British School at Rome. His Jarvis prize design comprises a circular Assembly Hall set between a grand crush-hall in the front, with a Banquet hall and Reception-rooms to the rear, two lecture theatres being set in front, right and left of the crush-hall, and so are served by it rather ingeniously. Thus it is that the plan assumes somewhat the shape of the letter I. The Assembly Hall, in the middle, has lateral emergency exits leading on to graceful terraces. This Assembly building forms the centrepiece of a Technical University of considerable extent, set by the banks of a river. It makes an ambitious scheme, well done in a a French fashion, dashingly conceived, though the main building, here detailed so well, is in itself restrained and very dignified, worked out with good effect, and internally the decorative treatment is richly realised in colour.

Mr. Cormier's design has a square hall denuded of its angles; a sort of irregular octagon, marked in the corner spaces by niches, and adroitly laid out, in the main, with some skill. He sends a graphic set of drawings, though the lay-out somehow leaves the impression of its being somewhat confused.

About the Sculpture we have only space for a few words. The subject set is "A Standing Figure for a Fountain." Mr. Gilbert Ledward, the successful student, is far in advance of his fellow-competitors, and specially so in the treatment of his fountain, which has singular charm, even though the part which intervenes between the base of his statue and the basin of the fountain is possibly too ornate. Mr. Harold Brownsword has a very chaste design for the fountain, exceedingly refined in idea; but the circular pedestal below the figure is poor, and has a stilted look, and appears mean.

In the Decorative Painting contest Mr. Colin Gill is out and away the best, and the Faculty has recognised his success. His colour scheme is not distinctive, though there is plausible movement in his tapestry-like composition, ranged under trees in front of blue hills and purply-grey clouds, the figure draperies being in dull reds, and dark green foliage overhead. The figure of a man with the guitar is not graceful, and is unfortunately placed in the group.

COMPETITION IN PUBLIC CONTRACTS.*

By Geo. C. Warren.

I believe more can be accomplished by placing even greater responsibilities upon public officials, holding them to a strict accountability for their proper exercise, and then providing adequate means for the detection, exposure, and correction of any abuse of the powers which may be entrusted to them. It is, in my judgment, a serious mistake to attempt to make men honest by the passage of laws which on their face assume that all men are dishonest. I believe our laws at present are generally based too little on the fixing of individual responsibility, and too much on suspicion of general dishonesty of public officials and an effort to force honesty by legal safeguards—a result which I believe can never be accomplished. If more responsibility, confidence, and discretion were placed in our public officers we would find more high-class citizens ready and glad to take public office for the honour it carries and the good they can accomplish. Every contract is made up of three items—labour, materials, and profit. Assuming the cost price of the first two to be approximately the same, there is only room for competition as to the profit to be made.

The above suggestions naturally raise the question as to whether we have not reached the point where the principle of doing business on the competitive basis is not out of date, and where we must look for the correction of abuses to publicity and the general elevation of the moral tone of business, and a higher order of integrity and efficiency in all public servants, coupled with the elimination of the political "Boss" in its generally accepted, and rather uncomplimentary, sense, and recognise that every organisation, political or otherwise, must have a leader, who may, in the case of public service, be honest and work for the public good. Let us proceed on the theory that all men are born honest, and that most men would prefer to remain so, and generally will remain so if encouraged to give the best that is in them, and if given a remuneration for service which is consistent with their effort and responsibility, and which will enable them and their families to live as people in their stations should live, and, in addition, save a reasonable amount. This applies with equal force to contractors as well as public officials. How many engineers and other executive officials in our small, or even large, communities who are expected to devote their entire time to the work are paid salaries which are so small as to be entirely inconsistent with the positions they hold, the results they are expected to accomplish, and the expenses of living in a way such men should live to be a credit to themselves and the public? How frequently does it occur that the public is pleased when there is evidence that a contractor has taken a contract at a low price—one which cannot yield a profit, and will surely yield a loss if honestly administered?

Is not the whole system of competitive bidding and award of contracts to the lowest bidder (regardless of responsibility, including previous experience in the line of work undertaken, evidence of honesty of purpose or otherwise, and of the profit or loss on the work), based on the wrong principle of grinding the contractor down to a basis on which he cannot live and carry out his contract honestly—ruinously excessive competition, in other words? Do not such conditions as to both officials and contractors breed and encourage, if not almost force, dishonesty on the part of both?

In any reform we undertake let us assume that officials (engineers or otherwise) as well as contractors, are honest, and place in the officials the responsibility and the confidence which that assumption would carry with it. Then pay the officials fair salaries, and you will generally get good service, although at times, in public as well as private life, there will be an occasional wrongdoer. Let the contractors understand that their bids will be as readily rejected if too low as if too high, and that experience, responsibility, and general reliability in the past will weigh as heavily in determining the award as the amount of the bid in dollars and cents. Would any of us, if we were to build an expensive house, hire an architect who would work at the cheapest rate, and then advertise for bids and say to the contractors: "The man who offers to do the work for the least money and gives a surety company bond will get the work"? What kind of a house would he get on that plan? In such cases do we not consider price as only one of the many important factors for consideration in awarding the contract? Who has ever heard of satisfactory results through surety bond after the contractor has failed because the contract price is too low?

The specifications should be clear and distinct, and as brief as practicable. They should avoid all trick clauses, and at the end of every paragraph should state under what item of the contract and bid the work embraced in that paragraph is to be paid for. "Discretion of the engineer" should be eliminated, and yet some things must be left to the "best judgment," which is another way of stating "discretion" of the engineer; but its exercise should always be fair. Too often the engineer considers his duty is to get all he can for his employer, however unfair to the contractor. In such cases it is only to be expected that the contractor will do his best to "recoup," and the engineer who is so narrow as to take advantage of the contractor is generally sufficiently dense so that the contractor can find a way to "put one over" on him.

THE UNBALANCED BID.

This is the most potent means of exercising dishonesty. It is only made possible through unbalanced quantities of the engineer's estimate, whether the error in estimate is due to dishonest design, to incompetence, or to undue haste or lack of care in making the estimate. Even contractors with an honest purpose are apt to avail themselves of an opportunity to "unbalance" their bids if the estimate offers the opportunity, knowing that even if they do not "unbalance" some one or more of their competitors are pretty certain to see the opportunity and avail themselves of it. Let contracts provide that if any item of a contract exceeds 20 per cent. of the estimated quantity the excess shall be done at cost of labour and materials plus fifteen per cent., regardless of the contract price for such item, and let the engineer understand that when any item exceeds the estimated quantity by more than 20 per cent. the fact will be regarded as prima-facie evi-

* From a paper by Mr. Geo. C. Warren, of the leading firm, Warren Brothers Company, Boston, Mass., U.S.A.

dence of incompetence, and be followed by rigid investigation and probable discharge, if the investigation proves the error to be due to either incompetence or dishonesty. Then, at least intentional unbalancing of bids and estimates will be promptly stopped, and engineers will exercise more care than they do at present.

In some cases the quantities cannot be accurately estimated in advance, and in such cases the "cost plus fifteen per cent." basis of payment for the excess will check dishonesty. Never put in a contract a clause that if certain unanticipated contingencies arise the work "will be done by the contractor without extra allowance." Nothing could be more unfair, for instance, than a clause in specifications for a pavement that if "soft or springy places develop in the subgrade they shall be dug out by the contractor and refilled with sound material (earth, stone, cinders, or concrete), as the engineer may direct, without extra charge." Yet this is a common clause in pavement specifications, and equally unreasonable, and similar clauses are found in specifications for other classes of work. If the contractor, in the construction, is faced with such a condition, he is sure to know he has been "robbed," and if he doesn't retaliate by "stealing" some cement out of the concrete or otherwise, it will be because he doesn't know how—not because he is dishonest, for he will be pretty certain to figure out in his own mind that, under the circumstances, such retaliation is honest. In every construction unforeseen contingencies are liable to occur. It is absolutely dishonest to throw the extra expense on the contractor, and specifications should always provide for such cases, that such unanticipated or unforeseen work shall be paid for at "cost of labour and material plus fifteen per cent.," or, as is the custom of the City of Toronto and some other cities, include in the specifications and contracts a long list of unit prices generally accepted as fair and reasonable, which will be the measure of pay in case such unanticipated work is required. The cost and percentage basis is the more fair for both parties, because a schedule of unit prices cannot be made which will be fair to all cases, regardless of quantity or other conditions of the unforeseen work.

RELATION OF ESTIMATE TO CONTRACT.

It has been suggested that no bid should be accepted if the price of any item exceeds the engineer's estimate by more than 10 per cent. Such a system would too much encourage engineers to make unfairly low estimated prices or to force the using of an incompetently-prepared estimate as the final basis of contract. I have known cases where such a system was in vogue, and on which, from my knowledge of costs, I believe the engineers systematically estimated about 5 per cent. below actual cost, in order to entice the unwary contractor and get low bids. In such cases you may be sure the contractor will "work his wits" to get even, and, I believe, generally speaking, will succeed in accomplishing the end, at the expense of more or less poor work, and still consider himself honest. So long as contracts are based on such lack of confidence and fairness between the contractor and engineer, so long will there be dishonesty in carrying out of contracts. Employ only competent engineers, pay them fair salaries; treat the contractors fairly, and I believe 90 per cent. of the rascality in public work will be removed.

ARCHITECTS' AND SURVEYORS' APPROVED SOCIETY.

The annual general meeting of members of this society was held in the lecture-hall of the Architectural Association, 18, Tufton-street, Westminster, on Thursday evening in last week. The president (Mr. W. Edward Woolley, President of the Surveyors' Institution) occupied the chair and was supported by leading members of the professional societies interested, while there was a good attendance of subscribing members.

The Secretary (Mr. F. R. Yerbury, secretary of the Architectural Association) made a statement in the course of which he observed that at the first annual meeting, held just a year ago, it fell to his duty to outline the reasons which had actuated those interested to form this society, and also to give a few details of the position of the newly-formed society at that date. The prospects of the society were then, perhaps, merely a matter of conjecture—well-founded conjecture, maybe, seeing that the society had made remarkable progress during the very short time it had then been in existence; but it was now possible, after a year had elapsed, to compare anticipations with actual experience, and, he was glad to say, the comparison was an exceedingly gratifying one. The membership had steadily increased, and they had since the last meeting enrolled 404 members. They had lost 99 members—one, he regretted to say, by death, the majority of the remainder resigning on account of their incomes rising beyond the insurance limit. A few members had gone abroad, and three had been transferred to other professional societies, owing to a change in their professions. They now had 1,879 members on their registers. The sickness and maternity claims had been far below the number estimated by the Government actuaries. Up to the present they had met 25 maternity claims, and 115 members had received sickness benefit. Two members had received sanatorium benefit. He was glad to say that most of the claims dealt with were for illnesses which might be regarded as not being serious, and at the present time there were only six members on the sick list—one lady and five men. The committee of the society had endeavoured to be of as much assistance as possible to those of its members needing its help, and it had been able in many cases to render services not by any means required by the actual letter of the National Insurance Act. Wherever possible, members in hospital had been visited, and they had been invited—as, indeed, all members of the society were invited—to regard the committee as a body prepared and anxious to assist them in any way which might be in their power. A benevolent fund had been formed for the benefit of members requiring it. Happily, very few cases of distress had as yet come before the committee; but it was felt that the existence of such a fund would be a great asset to the society, and would enable the committee to give financial assistance when necessary beyond the monetary benefits to which members were entitled under the Act. A scheme for dealing with this fund in other ways is at present under consideration.

The Treasurer (Mr. Maurice E. Webb) said the society had received of £80 each from the Royal Institute of British Architects and the Surveyors' Institution, and of £20 each from the Society of Architects and the Architectural Association, and the Quantity Surveyors' Association, and the honorary members' subscriptions had amounted to £58 19s., making a total of £278 19s. There had been remitted as advances by the National Insurance Commissioners a total of £440 0s. 4d. A special advance of £50 had since been repaid. For sickness benefits there had been expended £141 9s. 8d., and for maternity benefits £12, while the expenses of administration had been £436 14s. 6d., of which printing and stationery represented £187 12s. 8d., salaries and wages £99 4s., postages £60 3s. 3d., and legal expenses £52 10s. There will be a bank balance of £103 13s. 4d., and £17 11s. 10d. cash in hand, the income of the year being £768 19s. 4d. From the balance £88 19s. will be utilised to form a benevolent fund for the benefit of the members of the society. He proposed a vote of thanks to the retiring president, Mr. Reginald Blomfield, P.R.I.B.A.

The President congratulated the members on the very satisfactory state of affairs shown by the report and balance-sheet. The committee were very anxious to increase the annual income of the Benevolent Fund, and invited subscriptions from architects and surveyors. Already a number of gentlemen were supporting the fund by subscribing amounts from half a guinea upwards per annum. The value of the work of this society would be considerably increased by the existence of a strong Benevolent Fund, which would enable the committee to give financial assistance in cases where it was necessary, beyond the allowances of the National Insurance Act. He moved the election of the following members of a committee for the ensuing year:—

President: W. Edward Woolley (President, Surveyors' Institution). Vice-presidents: Hon. Edward Strutt, F.S.I.; Percy B. Tubbs, F.R.I.B.A. (President, Society of Architects); Reginald Blomfield, A.R.A., M.A. (P.R.I.B.A.); T. J. Carless (President, Quantity Surveyors' Association); W. Curtis Green (President, Architectural Association); Henry Riley; Charles Bidwell, F.S.I.; T. E. Collcutt, F.R.I.B.A.; Sir William Emerson, F.R.I.B.A.; Sir Ernest George, A.R.A., F.R.I.B.A.; J. J. Lish; Howard Martin, F.S.I.; Sir J. F. L. Rolleston, M.P.; Sir A. R. Stenning, F.S.I.; H. T. Steward, F.S.I.; Leslie R. Vigers, F.S.I.; and Thomas T. Wainwright, F.S.I. Trustees: W. Edgar Horne, M.P., F.S.I.; Daniel Watney, F.S.I.; and Sir Aston Webb, C.B., C.V.O., R.A., F.R.I.B.A., F.S.A. Auditors: Turville Brown, F.S.I., and F. R. Priest. Treasurer: Maurice E. Webb, M.A. Secretary: F. R. Yerbury. General Committee: Chairman, George Corderoy, F.S.I.; E. H. Blake, F.S.I.; C. MacArthur Butler; Walter Cave, F.R.I.B.A.; A. G. Cross, F.S.I.; G. Leonard Elkington, A.R.I.B.A.; Ralph Ellis, F.S.I.; A. Goddard; W. J. Fisher; George Hubbard, F.R.I.B.A., F.S.A.; H. A. James; B. Marr Johnson, F.S.I.; R. G. Lovell, A.R.I.B.A.; Ian MacAlister, B.A.; E. C. P. Monson, F.R.I.B.A.; W. G. Newton, M.A., A.R.I.B.A.; F. R. Priest; G. Reeves; Clifford T. Steward, F.S.I.; H. W. Virgo; Maurice E. Webb, M.A.; H. D. Whitham, and H. D. Searles-Wood, F.R.I.B.A.

This list was unanimously adopted.

Mr. G. Corderoy, in returning thanks, drew attention to the low cost of administration—2s. 7½d. per head, as compared with the 3s. 5d. allowed under the Act—and pointed out that every member of the committee declined to accept any fee or repayment of expenses. No society was managed with less red-tape and formality. He appealed to members to induce their friends to join and continue to strengthen its position.

Mr. S. Reeves moved: "That the rules of the society be and are hereby amended in accordance with the provisions of the National Insurance Amendment Act, 1913, provided that all such amendments are subject to the approval of the National Insurance Commission."

This was seconded by Mr. W. J. Fisher, and was carried unanimously.

Mr. Ralph Ellis moved a vote of thanks to the Council of the Architectural Association for so generously providing the society with a meeting-room, with heating, lighting, and attendance, entirely gratuitously. He remarked that Mr. Yerbury acted as secretary at a very modest remuneration, and had been exceedingly kind and sympathetic in visiting sick members, at their homes and in hospitals, and in personally interesting himself in their welfare.

Mr. Reeves seconded the motion, which was carried with applause.

A vote of thanks to the president was adopted on the motion of Mr. T. J. Carless, seconded by Mr. George Hubbard, F.S.A.

At the close of the proceedings a subscribing member inquired if the time of the meeting could in future be altered from 6 to 6.30, to give assistants the opportunity of being present. This suggestion was supported by Mr. Hubbard.

The President replied that the hour of meeting was fixed by the rules; but the committee would bear the suggestion in mind, and would endeavour to change the time of meeting next May.

New oak panelling placed in Longthorpe Church, Northamptonshire, was dedicated last week by Bishop Clayton. It has been executed by Messrs. Stafford and Watkins, of Fitzwilliam-street, Peterborough.



WALSALL BATHS. Edwin F. W. Liddle, Architect.

REINFORCED-CONCRETE BUILDINGS.

By Wm. G. Shipwright. Licentiate R.I.B.A., M.C.I., and Chartered Surveyor (by Examination).

WALSALL BATHS.

Edwin F. W. Liddle, Architect.

The baths which form the subject of this article furnish another illustration of the purposes for which reinforced concrete has proved itself adaptable. The interior of the bath is shown in Fig. 1, and the diagram illustration (Figs. 2 to 12) shows the form of construction employed for the bottom, walls, and steps surrounding the bath. The total length of the bath is 118ft., and the width 56ft., the pond measuring 100ft. long by 30ft. wide. Fig. 2 is a plan showing the general arrangement of the construction, from which it will be seen that the walls of the bath are constructed in the form of continuous reinforced-concrete slabs, the longer sides being braced by beams at intervals varying up to 20ft. from centre to centre.

Fig. 3 shows the construction employed in the walls or slabs on the longer sides. These walls are 4ft. 6in. in height at the higher, and about 6ft. high at the lower end, whilst the concrete, varying in thickness from 4in. at the upper end to 5½in. at the bottom, is reinforced with ⅜in. Rib bars running the full height on the outer edge, and similar bars about one-half the height of the wall on the inner side. The latter bars are bent round a ½in. longitudinal bar, and turned outwards to form a heel, as shown by the detail section, Fig. 4. This detail also shows the tie-rods put in to form the connection with the bottom slab. The angle is reinforced with ⅜in. horizontal bars at 7in. centres. Longitudinal reinforcement is also provided for the sides of the bath by ⅜in. Rib bars at 2ft. centres placed in the centre of the wall. The bottom of the bath consists of a
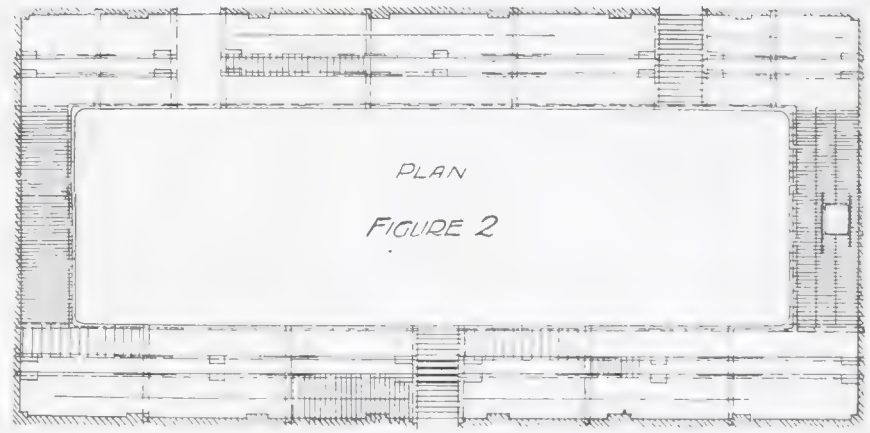


FIGURE 2

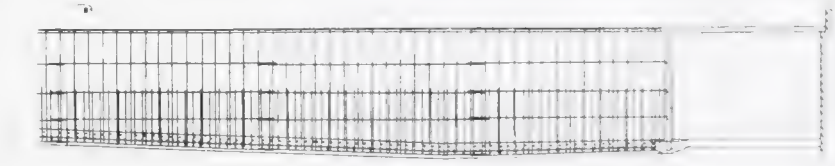
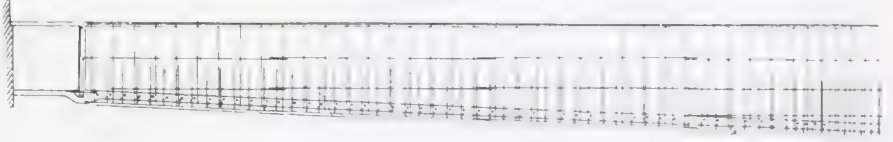
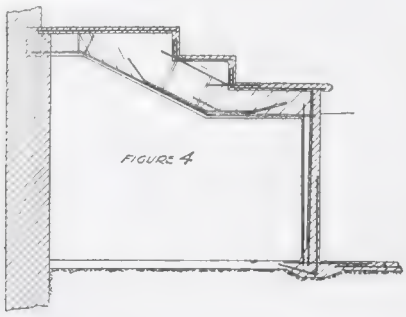


FIGURE 3

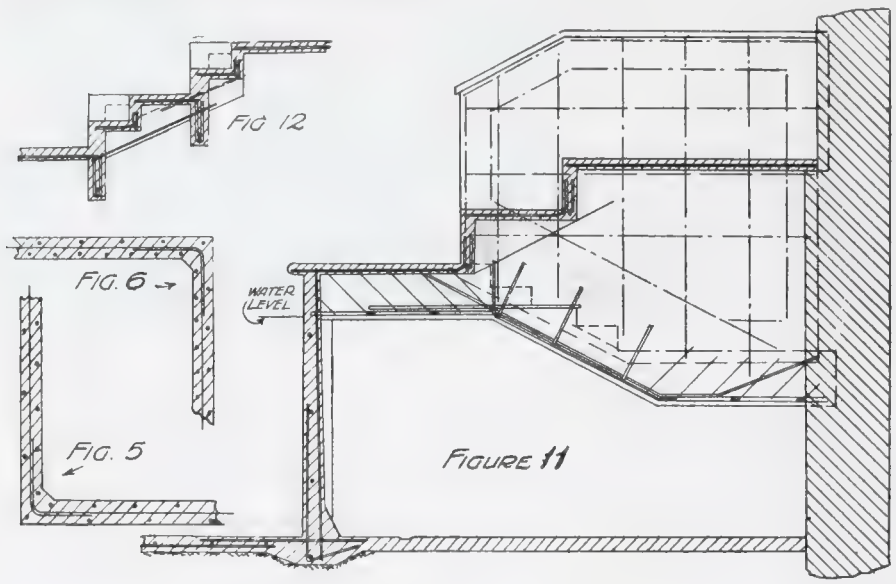


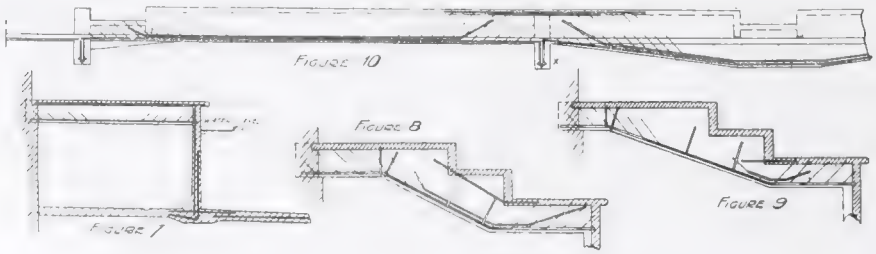
5in. slab of concrete measuring 3,000 superficial feet, constructed in one slab to a fall of about 3in. in 10ft., and reinforced with a lattice of ⅜in. Rib bars placed at 16in. centres, with all the necessary joints lapped at least 12in. Details showing the disposition of the side reinforcing-bars and the lapping of the longitudinal bars, to provide angle-ties at the deep and shallow ends respectively, are shown in Figs. 5 and 6. The flooring and risers surrounding the bath are constructed in 4in. of concrete, with ⅜in.

tension-bars at about 6in. centres in the horizontal slabs at the narrow end, ½in. Rib bars at 8½in. centres the wide end, and ½in. Kahn bars in the risers. Fig. 7 shows the beams employed to support the narrower platform, and occupies a position at the



angle of the bath. The span is 7ft. 3in., and the beams are 16in. deep, with ½in. "trussed"-bar reinforcement. This detail and that given in Fig. 4 also show the connection at the angles of the landing and the top of the wall of the bath. Details of the raker-beams under the side risers are shown in Figs. 4, 8, and 9. These are both 22in. deep, with a span of 12ft. 2½in., and act as buttresses to the bath-wall, as well as supports for the floor. They are provided with 1in. Kahn-bar reinforcement throughout, and bent lengths of ¾in. and ½in. Rib bars to act as ties, essential features being the ¾in. Rib-bar stirrups placed in the position shown. Fig. 10 is an elevation of one of the long beams forming the risers, and shows the manner in which it is supported on the beam detailed in Fig. 8, the section of which is shown at X in Fig. 10. These beams are of unusual section, in order to provide the various rises and falls for steps,





and illustrate one of the problems of construction readily disposed of by the employment of reinforced concrete; the dip formed in the construction of the step being easily arranged in the manner shown. The reinforcement consists of ¾in. Kahn and ⅜in. Rib bar for tensile resistance, and as the beams are constructed on the continuous principle, the negative bending above beam is taken by ½in. Kahn bars and one ⅜in. Rib bar. Fig. 11 shows the construction of the walls around the approach-stairs, which are formed with concrete panels 3in. thick, with 4in. surrounds. The reinforcement is a lattice of ⅜in. Rib bars 18in. apart. A remarkably good finish has been obtained on this work.

The construction of the reinforced-concrete steps is shown in Fig. 12. Cross-bearers are formed by 5in. concrete beams with ½in. Rib and ½in. trussed bar reinforcement, and the steps with 3in. treads and 4in. risers, have reinforcement of ⅜in. Rib bars in the former, and ½in. transverse bars in latter. The walls are constructed in brickwork, and a well-designed iron roof covers the bath.

The reinforced work, which is a very interesting example of one of the economical uses of reinforced concrete, was designed by the Trussed Concrete Steel Company, Ltd., of Caxton House, Westminster.

THE KILN-DRYING OF LUMBER.*

By Harry D. Tiemann, U.S.A. Forest Service.

Before wood is suitable for use for most purposes it must be dried. Dry wood is in a unique condition, since wood in the living tree has never been dry from the time it was first formed. The operation of removing the moisture from wood does not consist of simply evaporating moisture. If evaporating moisture were all there is to the process there would be no problem at all, it would simply be an engineering feat of supplying the necessary latent heat. Wood, however, is a complex substance, and the removal of the moisture is accompanied by physical and mechanical changes. It shrinks and increases in strength and other changes take place. It is a remarkable fact that less attention is given to the conditioning of wood for the purpose for which it is to be used than is given any other material. With iron and the metals, greatest care and the most expert knowledge are used in their preparation. With wood, however, the total value of whose products exceeds that of every other substance except agricultural products, too little expert attention has been paid to the conditioning. The idea seems to have been that Nature will take care of her own, and that the wood can be allowed to dry in almost any way. When it is considered that the quality of the finished product is in part entirely dependent upon the process that has been used in drying, for any injury produced in the drying process cannot subsequently be rectified, the importance of the subject of proper drying becomes evident. Many kilns have been designed with little consideration of the fundamental requirements, and some lay great stress on superficial details. In a kiln recently built at the Forest Products Laboratory at Madison the design is based on fundamental requirements, and the satisfactory results obtained in drying refractory woods have shown the soundness of the theory.

Structure and Composition of Wood.—Before discussing the drying of wood a brief description of its structure and composition will be of assistance. If you will think of a honeycomb it will perhaps give you a good idea of the way in which wood is constructed, except that the cells are very much longer in proportion to their width than in the honeycomb, and they are not as uniform in size. In the "soft woods," or conifers, they are all pretty uniform in shape and size, but in the hardwoods they vary greatly in the stick, some being fifty times as wide as others, the wide ones being termed vessels and the narrow ones wood-fibres. Interspersed between these vertical cells and fibres are the medullary rays, appearing as the silver grain on quarter-sawed oak, and running in a horizontal radial direction. The Forest Service is making a detailed study of the microscopic structure of all the important American woods, and has prepared photo-micrographs showing the structure as it appears under the microscope. These have not yet been published, but may be seen at the Madison laboratory.

The Fibre Saturation Point.—Water exists in green wood in two forms: As liquid water contained in the cavities of the cells or pores, and as imbibed water intimately absorbed in the substance of which the wood is composed. Now it is almost axiomatic that removal of the free water from the holes, or pores, will have no effect upon the physical properties or shrinkage of the wood, but as soon as any of the "imbibed" moisture is removed from the cell-walls shrinkage begins to take place and other changes occur. The strength also begins to increase at this time. This condition of moisture, which is the point when the cell walls or wood substance become saturated, is called the "fibre saturation point." It is a very significant point in the drying of wood. It is easy to remove the free water from woods which will stand a high temperature, as it is only necessary to heat the wood slightly above the boiling point in a closed vessel, which will allow the escape of the steam as it is formed, but will not allow dry air to come in contact with the wood, so that the surface will not become dried below its fibre saturation point. This can be accomplished with most of the soft woods, but not, as a rule, with the hard woods, as they are injured by the temperature necessary. When it comes to evaporating the imbibed moisture there is where the difficulty comes in, and also where the free water has to be removed through its gradual transfusion, instead of boiling. As soon as the imbibed moisture begins to be extracted from any portion shrinkage begins and stresses are set up in the wood which tend to cause checking. The fibre saturation point lies between moisture conditions of 25 and 30 per cent. of the dry weight of the wood, according to the species.

The Wood Substance.—In regard to the substance of which wood is composed: It may surprise you to learn, if you are not already familiar with the fact, that it is half as heavy again as water. If any wood could be compresed so that all the air spaces were got rid of it would sink in water like a stone. The specific gravity of the wood substance is 1.56. This substance is the product of living proceses; that is, it is organic, and its structure is, therefore, very complex. It is thought to be built up of small particles

*Notes of an address given before the quarterly meeting of the Northern Hemlock and Hardwood Lumber Association at Eau Claire, Wis.

closely laid together, the interstices being capable of filling up with moisture. The foundation part of this substance is known as cellulose. Cotton is almost pure cellulose, but in wood there is another material combined with the cellulose called lignin. This has never been isolated by itself, but is known only in combination with other substances. Just how it is combined with the cellulose is not well known. It adds to the strength of the cell walls and gives them a darker colour. The chemical composition of cellulose is the same as that of starch to which it is closely allied, and is represented by the formula $C_6H_{10}O_5$, the hydrogen and oxygen being combined in the same proportion as in water. By the addition of water to the molecule sugar is formed, and closely related substances. Thus cellulose, starch, and sugars occur in the living tree.

Sap.—The term "sap" is an ambiguous expression. The sap in the tree really descends through the bark and except in early spring is not in the wood of the tree except in the medullary rays and living tissues in the "sapwood." It contains sugars, soluble gums, and closely allied materials. What flows through the sapwood is chiefly water with a slight amount of mineral substances in solution. The water rises from the roots through the sapwood to the leaves, where it is converted into true "sap" which descends through the bark and feeds the living tissues between the bark and the wood, which tissues make the annual growth of the trunk. Just what is meant by getting rid of the "sap," as is often said, in drying wood is not clear, since the wood itself contains very little true sap and the heartwood none. The wood contains, however, mineral substances, organic acids, and volatile oils and gums, as resin and cedar oil, etc.

Objects of Drying Wood.—These may be grouped under three main headings: 1. To reduce shipping weight. 2. To reduce the quantity necessary to carry in stock. 3. To prepare the wood for use and improve its qualities.

Drying to Reduce Weight.—When the wood will stand the temperature drying to reduce weight is most easily accomplished by heating the wood above the boiling point in a closed chamber, but so arranged that the excess steam produced will escape. This process manifestly does not apply to hardwoods but is applicable to many of the softwoods. It is used especially in the Northwest, where one-inch Douglas fir is dried in from 40 to 65 hours and sometimes in as short a time as 24 hours. In the latter case superheated steam at 300deg. F. was forced into the chamber, but, of course, the lumber could not be heated thereby much above the boiling point so long as it contained any free water. The heat of evaporation may be supplied either by superheated steam or by steam pipes within the kiln itself.

Drying to Reduce Quantity in Stock.—The quantity of wood it is necessary to hold in stock is naturally reduced when either of the other two objects is attained, and, therefore, need not be discussed here.

Drying to Prepare for Use and to Improve Quality.—In drying to prepare for use and to improve quality careful and technical drying is called for, and it applies more particularly to the hardwoods, although it may be required for softwoods also.

Practice of Drying not Standardised.—Present practice of kiln-drying varies tremendously and there is no uniformity or standard method. Temperatures vary anywhere from 65 to 165deg. F., or even higher, and 1in. stuff 3 to 6 months on the sticks is being dried in from four days to three weeks, and 3in. stuff in from two to five months. We are constantly receiving many inquiries for information as to improving present conditions. Many kilns make a hit at superficial points and fall down on the fundamentals.

Classification of Methods of Drying and Types of Kilns.—All methods in use at atmospheric pressure may be classified under the following headings. The kilns may be either progressive or compartment, and preliminary steaming may or may not accompany any one of these methods: 1. Dry air—generally obsolete. 2. Moist air—a, Ventilated; b, Forced draft; c, Condensing; b, Humidity regulated; e, Oven or boiling. 3. Superheated steam.

Losses Due to Poor Drying.—In some cases there is practically no loss, but more often it ranges from 1 to 3 per cent., and 7 to 10 in refractory woods such as gum. In some cases the losses are as high as 33 per cent. Air-drying is by no means always to be preferred to kiln-drying. In air-drying there is little or no control over the process; it may take place too rapidly some days and too slowly others; it may be very non-uniform. Hardwoods in large sizes almost invariably check. By proper kiln-drying these unfavourable circumstances may be eliminated. However, air-drying is unquestionably to be preferred to bad kiln-drying, and when there is any doubt in the case it is generally safer to trust to air-drying. Green lumber can be better dried in the kiln if the fundamental principles are all taken care of.

Value of Using a Proper Method of Kiln-drying instead of Air-drying.—Some of the advantages of kiln-drying to be secured over air-drying in addition to reduction of shipping weight and lessening quantity of stock are the following: Saving of losses, better quality of product, prevention of sap stain, fixation of gums and resins, reduction of hygroscopicity. Experiments have shown that drying oak and ash at 145 and 170deg. F. has reduced the hygroscopicity 15 to 25 per cent. Specimens from the same sticks were both air-dried and kiln-dried, then placed side by side on a rack for over a year, and their moisture contents then determined. This reduction of moisture means a reduction in the "working" of the material which, even though slight, is of very great importance. Some of the Fundamental Principles Affecting the Drying of wood are:—

1. The evaporation from the surface of a stick should not exceed the rate which the moisture transfuses from the interior to the surface.

2. Moisture tends to transfuse from the hot towards the cold portions.

3. Wood is soft and plastic while hot and moist and will become set in whatever shape it is in as it dries.

4. Shrinkage is greater the higher the temperature of drying while still moist.

5. Casehardening and honeycombing result from the two foregoing circumstances. It may be explained thus: Suppose a block of wood is very wet and is placed in at too high a temperature and too low a humidity. The surface begins to dry and tends to shrink but is prevented from doing so by the wet interior. Being plastic, it yields to this resistance and becomes stretched. If not plastic it will check open. As drying proceeds it becomes hard and set in this expanded condition and acts as a strong shell. The interior now dries very slowly, does not become set but shrinks, and as the exterior is already hard it opens up into honeycombing. When the exterior once becomes set or "casehardened" the interior is quite certain to become honeycombed, whether the drying takes place in the kiln or a long time afterwards. The only remedy is to moisten the exterior by steaming or soaking before it is too late. Air-dried material frequently casehardens and honeycombs as well as kiln-dried. (Samples of sections of white oak felloes exhibited showing one badly honeycombed and the other excellently dried.)

6. Drying should take place uniformly at all points, otherwise stresses are set up in the wood.

7. Brittleness is produced by drying too far.

8. Dried wood absorbs or loses moisture in proportion to the relative humidity of the air.

9. The hygroscopicity and working are reduced by thorough drying, but not eliminated.

To properly utilise these principles in drying, attention should be given to the following factors:

1. The lumber should be heated clear through before drying begins.

2. Humidity should be correct at the start and reduced in the proper ratio as the drying progresses.

3. The temperature of the lumber should be uniform and as high as the kind of material will endure.

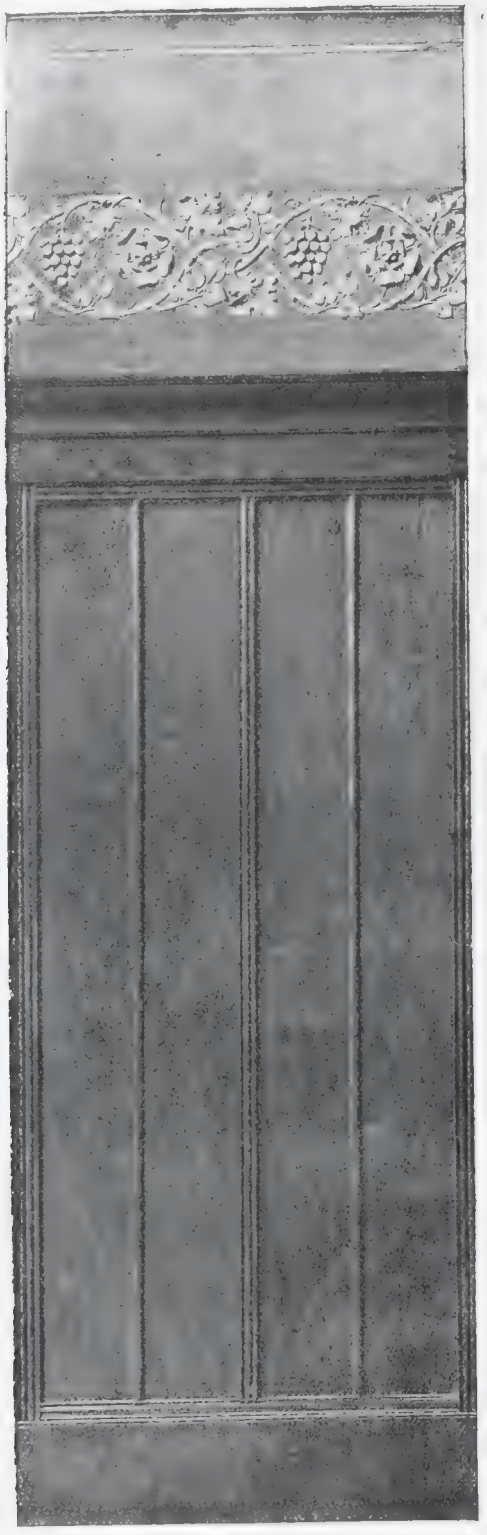
4. The rate of drying should be controlled by the amount of humidity in the air and not by the rate of circulation. The circulation should be ample at all points to supply the heat needed for vaporisation and to keep the humidity uniform. To evaporate one pound of water at atmospheric pressure requires the amount of heat given up by 69,000 cubic feet of dry air in falling one degree Fahrenheit. The regulation of the humidity is to prevent the surface from drying down to the point where it takes a "set" before the interior has dried to nearly the same amount, thus preventing casehardening. If dried too rapidly casehardening will result.

5. The degree of dryness obtained should conform with the use to which the wood is to be put.

Ideal drying depends upon: Ample circulation; control of humidity at all times; proper temperature. Any kiln which fulfils these conditions should be capable of giving perfect drying. The new kiln, which we have designed and are now experimenting with, is a drying-chamber with a partition on either side, making two narrow side chambers open top and bottom. The steam-pipes are in the usual position. At the top of the side chambers is a spray of water; at the bottom are gutters and eliminator or baffle plates to separate the fine mist from the air. The spray accomplishes two things: It induces an increased circulation and it regulates the humidity. This is done by regulating the temperature of the spray water. The principle is very simple, and may be called the dew-point method. The air under the heating coil is saturated at whatever temperature is required. This temperature is the dew-point of the air after it passes up into the temperature of the drying chamber above the coils. Knowing the temperature in the drying-room and the dew-point, the relative humidity is thus determined. The relative humidity is simply the ratio of the vapour pressure of saturated vapour at the actual temperature in the chamber. Thus, by controlling the temperature of the dew-point by means of the temperature of the spray water the relative humidity is positively regulated. This general principle has been applied to ventilation of rooms, though operated by a different method, and it seems strange that no one has heretofore applied it to the dry-kiln. For the past two winters we have been carrying on experiments in drying eucalyptus in California in a wooden kiln of this kind, and a small one is now in operation at the Madison laboratory. In this we have successfully dried large oak, hickory, and birch waggon stock, some from the green condition and some from the partly air-dried. The latter required forty-two days. A remarkable result was obtained in drying some partially air-dried waggon stock furnished by one concern for experiment. It was considerably checked on the ends when placed in the kiln, but when removed these checks had almost all completely closed up, so as to be invisible. The efficiency of this kiln theoretically is much higher than that of a ventilating kiln working at the same humidities; but it is doubtful whether it is much higher practically, since there are so many unseen factors which may enter in to modify it. This has not yet been worked out. All the waste heat, as well as the latent heat of evaporated moisture, goes into the spray water, which is recirculated by a pump. It is proposed to utilise this heat for warming a storage shed by passing the water through a coil of pipe before returning it to the sprays.

The foundation-stone of a new church hall has been formally laid at Clydach. The architect is Mr. G. T. Bassett, of Aberystwyth, and the contractors are Messrs. Arnold Bros., of Clydach. The cost will be £4,520.

Norton Church, W. Suffolk, has been restored under the direction of Mr. William Weir. The high deal box-pens have been replaced by open seats of English oak, and the space under the tower at the west end has been opened out to the nave.



Design 1A.—Machine-finished Dado of Solid Oak Panelling, 1s. 6d. a square foot, stained to any tone and fixed free within the London area. If not required stained and polished, 1s. 4½d. a square foot. Frieze of modelled canvas, with design in relief, 4s. a square yard (without fixing), or with an ivory surface, 6s. 6d. a square yard.



Design 19A.—Dado of hand-carved and finely-finished Solid Oak Panelling, 16s. a square foot, stained to any tone.

THE HOME AND ITS ADORNMENT.

To those of us wise or fortunate enough to make our homes the best that can be made of the best—we who still prefer not to live at hotels or in motor-cars to roam, there has long been [illegible] but to avail ourselves of the welcome aid of the great Regent Street firm which [illegible] has become synonymous all the world over with the hall-mark of good taste and the guarantee of high quality—its indispensable accompaniment.

Few of our own readers need telling why this is so. Among the rest, probably, there are some who, when contrasting the vast difference in the result achieved by others who have promised similar results, have wondered what the cause of failure was. We prefer not to answer that question. It is enough for us to say that, from the outset, Messrs. Liberty and Co. have grasped the fundamental condition of artistic success in a greater measure than any of their contemporaries. Whenever asked, they will place themselves unreservedly under the professional guidance of their customers' own architects in preparing estimates and carrying out any kind of constructive and decorative work. Their workshops are exceptionally well equipped for carrying out copyright designs under personal supervision. Architects know that, and are assured that their designs will be faithfully and effectively carried out, and that their own efforts to satisfy their clients will be seconded by skilled craftsmen furnished with the best appliances and materials. Incidentally, we are sure Messrs. Liberty and Co. would willingly acknowledge that they themselves have benefited by encouraging this expectation, and that it has helped their own endeavours to work for those who, with laudable desire to be surrounded by things of beauty, lack themselves the gift of selection and the opportunities of friendly advice.

As ever—one is thankful to say—the display rooms and factories of Messrs. Liberty

are not a world's show, or a place of rendezvous or amusement; but a visit to them is an intellectual and artistic treat. No man or woman to whom the delights of form and colour appeal can fail to respond to the subtle influences of their beautiful surroundings. They are no happy hunting-grounds for the seeker of the bizarre. Freaks must be sought elsewhere—and easily found.



Bureau and Bookcase, Solid oak, stained dark brown. Handles in dull-finished copper. 3ft. 6in. high, 2ft. 3in. wide. £4 15s

heralded by all the blare of blatant advertisement, and the crude self-assertiveness of ignorance. At Liberty's, whether you want to adorn a palace or to brighten the humblest dwelling with some little treasure from the realm of art that shall transform it into a casket in which at least one gem is shrined, you will depend on it that what you get is of the best, that it is real, and that its beauty bears the ineffaceable stamp of individual craftsmanship and excellence of artistic design.

If, as we have before hinted, you want ostentatious, cast-iron, pompous uniformity, don't go to Liberty's. If you recognise with Ruskin, that "every generation has, in all probability, some peculiar gift, enabling it to do something different from, or in some sort better than, what has been done before," and that with the artistic developments of all the ages to choose from, it would be presumptuous to say this or that style of ornamentation is the most perfect, get one of the charming little books Messrs. Liberty publish, showing six styles of decoration. Read it, study the illustrations, and if you are wealthy, and feel that something in you responds to one style portrayed, seek out an architect and take counsel with him how best your needs, governed by circumstances, may be met; or place yourselves in Messrs. Liberty's hands, and you will be safe and satisfied.

Probably, like most of us, the best you can do is to improve and beautify the homes in which Fate has planted you. If in any degree a "permanency," Messrs. Liberty will so transfigure your surroundings that you need envy no one. If you are only a "temporary," at little cost you may still so change the dull barrenness of your walls into harmonies of beauty, and yet spend so little money, that surprise will rival satisfaction. Get the two Liberty brochures, "Solid Oak Panelling," and "Suggestions for the Decoration of Walls." Design 1*a* will show you what you can do for 1s. 6d. a square foot for the panelling, and 4s. a square yard for the modelled canvas frieze. For 8s. 3d. the square foot you can buy Design 18*a*, with a frieze of plaster, as shown, for a little extra. We should like to give some of the fabric and paper wall decorations, but they are in colour. You will get them in the second booklet just mentioned, or you can see them in the model rooms at Regent-street.

Space would fail us adequately to tell you what you can get in furniture at Liberty's to suit your new or remodelled home. If you can afford really antique carpets, fabrics, pottery, etc., send for their larger book, "Furniture, Antique and Modern," and the moderate charges for really authentic old works of all kinds will astonish you. Much more so, every way will the reproductions, at most modest prices, and of most conscientious adaptation. Another furniture book gives a tempting display of up-to-date furniture for town houses, flats, and week-end cottages, all combining artistic effect with utility, accommodation, balanced proportions, and sound construction. Another, "Reproductions of XVIIth Century Furniture," offers some most alluring and moderately figured later Stuart and William and Mary chairs, etc. In "Upholstered Chairs," luxurious ease is achieved with no sacrifice of good design or economy. For curtains, blinds, and draperies, "Liberty Specialities for Furnishing" is the booklet that will delight you. No woman of taste will ever endure the abominations in curtains and cretonnes that defile the bedrooms of the parvenu after a glance through this dainty collection, in which are figured fast-colour Indian cotton curtains from 5s. 6d., rich, lustrous Holbein velvet pile ones at 55s., and other fabrics of attractive and economical character.

At this season of the year, when money is wasted by foolish people on the trumpery that the recipients of "seasonable presents" get rid of somehow as soon as possible, the Liberty booklet, "Small Pieces of Furniture," will prove a boon to judicious givers, and still more so to generous-hearted injudicious people who would like to spend their money on something that would be valued if they knew how. Many a humble friend would be gladdened by the receipt of one of the rush chairs figured on pp. 2 and 3 at from 9s. only to £1 5s. Or one of the stools, on pp. 10 and 11, would certainly save more than one impetuous relative from kicking across the room abortions forced into his possession by some well-meaning donors. Tables and stands, bookcases, book-rests, umbrella-stands, clocks, mirrors, etc., offer themselves at prices to suit all pockets, but all of good design and make. Here, for instance, is a well-made solid oak bureau and bookcase at £4 15s., that will last a dozen generations, and become more beautiful every year; or buy this wall-bracket, with its centre-leaded glass door, only 18s. 6d. Get this last-named booklet, by all means. If it proves your first introduction to Messrs. Liberty and Co., you will owe us the best New Year's gift we can desire—one of ourselves to some friend—and the more so if you couple with it the assurance, "I should never have got it for you if I had not seen it in the BUILDING NEWS!"



Wall Bracket and Cupboard. Stained brown. Centre cupboard with leaded glass door. 2ft. wide, 2ft. high. 18s. 6d.

THE NEED FOR BEAUTY IN LIFE.

An interesting lecture was delivered on December 17, at the Manchester University, by Mr. Ian B. Stoughton Holborn, on "The Need for Beauty in Life."

Mr. Holborn laid it down that the main cause of the social evils of to-day was a want of art-appreciation, and that we should never get true social reform, and never conquer the evils of our times, until a national love of beauty had been brought about. He wished it to be taken for granted that in every human being there was implanted a natural instinct to distinguish between what he considered the beautiful and what he considered the ugly, and to prefer the beautiful. He instanced the choice of one tie as against another, the choice of one colour instead of another for the paint upon a door, the preference for one girl's face instead of another's. It might be dormant. Our modern civilisation tended to thwart its development, and what we wanted to do was to train it just as we did the moral faculty.

THE GREEK "GENTLEMAN."

What was the relation at Athens of art and beauty to the life of the people? What did the Athenian, for instance, understand as that which constituted a gentleman? Not large property—too much money was considered as vulgar, like too much dinner or too much drink; not blue blood, unless the possessor "came up to sample." It was personal worth—the man who was both beautiful and good. Mr. Holborn expounded the intimacy of connection in Greek thought between the beautiful and the good. It helped to explain the part which gesture and graceful movement played in Greek life. A man must, and could, only express himself outwardly, and so it became important to the Greek that this power of expression should be cultivated to the utmost and made as beautiful as possible. Hence, possibly more than half of Greek education was devoted to that which we ignored, or even deliberately discouraged—to athletics and dancing (a movement with the Greeks of the whole body), to pose and gesture, to reading and rhetoric. Not one person out of a hundred amongst us could read decently, and the proportion of those who could speak with fluency and agreeableness of intonation could not be one in a thousand.

POSTERITY'S VIEW OF US.

In taking the Greek as the example of the all-round man, Mr. Holborn did not claim for him that he reached the highest point in each department in the three great fundamentals of man's nature, the intellectual, the moral, and the artistic. He wished only to show that no side of his nature was left

out of consideration. There was the intellectual side. It had been said that, "save the blind forces of Nature, nothing moves in modern life which is not Greek in its origin." On the other hand, many people spoke slightingly of Greek morality. What of our own? We must look at our own morality from the point of view of posterity. How would posterity judge our sweated industries? What would be thought of the fact that 3,000,000 of our wage-earners earned less than 25s. a week? What would posterity think of our national drunkenness —£160,000,000 a year on alcoholic liquor? What would the Greek have thought of that? What would he have thought of the idle crowds at our football matches? What of our trusts and combines, our bread-and butter education, our materialism, Congo atrocities, Putumayo atrocities, white-slave traffic?

And then the artistic side. Look at the site of Athens, and at Athens herself—a dream of beauty; look at any specimen that was found of humble Greek crockery: would posterity do any wrangling for the possession in its museums of our meat-tin cans? There was the Greek drama. In a hundred years, Athens, a town about the size of Salford, produced four thousand dramas of the highest literary quality the world had ever seen. Could Salford do that in ten hundred years?

THE CAUSE OF OUR TROUBLES.

In Mediæval times the intellectual side was wanting; truth was not loved for its own sake, and that made Mediæval morals cruel and narrow, and its art barbaric. The Renaissance was the re-birth of the Greek outlook. The artistic and the intellectual were developed, but not the moral. To-day we had developed our moral standards. We did care for the fallen, and we were a moral people in the main. Again, we had the intellectual side developed almost as strongly as the Greeks. It was the age of science. But what about the artistic side? Never was there an age when beauty played so small and unimportant a part in life. And that was the cause of our troubles. Our hideous factories, our hideous warehouses, our slums, our smug villas, our love of gain—the whole age was marked by grossness and materialism. We talk science to the slums, but that won't put things right; we talk to the slums about morals, we preach to them—with no effect. There will be no effect till we realise that man is a being with three parts to his nature. We must instill in the people who live in the slums—and in the rich people, too, who don't live in them—a love of beauty, and the slums will disappear. We want to take from Greece not a copy—all copies are bad—but an inspiration. Mr. Holborn did not despair; he was not a pessimist. We may yet, he said, make a completer man even than Greece.

PAINTING STRUCTURAL STEEL: THE PRESENT SITUATION.*

By A. H. Sabin, Assoc.M.Am.Soc.C.E.

The corrosion of structural metal (principally steel) by atmospheric and other natural causes is a subject which has long been of importance to the engineer. A few years ago the greatly-increased use of concrete structures aroused the hope that danger from such corrosion would be much reduced; but unarmoured steel seems to be used as much as ever. Concrete has not taken its place, but has made an entirely distinct place for itself. Much has been written, and much has been done, relative to the protection of steel; but improvement has been slow, progress being made step by step. The writer can remember when corrugated iron was introduced, some thirty years ago, that it was common practice to send out with a shipment a suitable quantity of powdered iron oxide, to be used as a pigment, with directions for mixing it with oil and applying it as a paint. It was supposed that, because it contained iron, it was a proper paint to apply to iron, like "applying the hair of the dog to cure the bite" (which the writer has also seen done).

Some years ago, Mr. G. W. Thompson attempted to classify pigments, as to their relation with iron, by suspending them in water and immersing pieces of iron or steel in these mixtures. The results were somewhat surprising; some of the pigments which common experience approved seemed to increase corrosion in this condition, and others, known to be useless in protective paints, seemed to be much better for preventing it. Lampblack, for instance, was the worst in preventing corrosion, and white zinc or pulverised chalk prevented it. This was probably due to the fact that lampblack contains, condensed on the surface of its particles, considerable carbonic acid, which is the most generally active agent in the corrosion of iron, and white zinc and chalk are basic substances by which iron is not rusted; however, the carbonic acid in lampblack is displaced by grinding in oil, and the well-known lack of durability in paints made of white zinc and chalk prevents their good qualities from coming into action.

So great is the need of more knowledge as to the value of pigments in paints, and their mode of action, that nothing promising new information is neglected. A committee of five chemists from different parts of the United States, with the approval of the Society for Testing Materials, made a series of tests of the principal pigments, and of some other substances, on steel immersed in water; and, as was to be expected, arrived at substantially concordant results. These results, as has been stated, were of no value from the standpoint of the paint-maker, being inconsistent with the known value of the pigments when ground in oil or varnish. When the report was published, however, the pigments were classified, according to their water value, into three groups—namely, inhibitors, indeterminates, and stimulators. This was the origin of the use of these now well-known words in paint terminology. It was expressly stated in the report that this was a classification as regards water only; but the names were so convenient and so tempting that those not familiar with the subject, and also many who saw their value for advertising purposes (two quite distinct classes), put them into common use to classify pigments in oil. It is obvious that any classification of pigments in oil should be based on their behaviour in oil, and if, as must be conceded, this is radically different from water tests, the latter should not be regarded. All this investigation began some years ago; meanwhile, numerous young men, mostly students working under the supervision of their teachers, have made brief and generally inconclusive studies of paints, and almost without exception have used these indefinite terms, inhibitors and stimulators. Patents have even been taken out—which, in the writer's opinion, are not only worthless but invalid—covering the use of old and well-known pigments. What is worse, every maker of a paint nostrum assures his hearers or readers that his particular paint absolutely inhibits rust, and that everything else stimulates it. This is the whole history of this jargon about inhibition and stimulation; it never had any particular value to the consumer, and it is generally used to mislead him. It is obvious that in a good paint the pigment particles are enveloped in a film of oil; they do not come in contact with the iron; if they did, the paint would peel off, for no dry pigment adheres well to metal. It is as true to-day as it has been in the past that steel rusts because air and moisture act on it, and paints are used to keep air and moisture from it. They do not inhibit rusting, except as they inhibit the cause of it.

The important practical question is whether paints have been, or can be, improved as to being non-porous or durable. This is essentially dependent on the relation between the pigment and the oil. As to the true nature of this relation, very little is known; but something is known about its visible manifestations. It is known, for instance, that 1lb. of dry red lead mixed with ¼lb. of oil makes a paint of ordinary consistency, and 1lb. of dry lampblack requires at least 6lb. or 8lb. of oil, say, thirty times as much, or making allowance for difference in density, say six times as much, as the red-lead. Similarly, 1lb. of white zinc takes twice as much oil to make a paint as 1lb. of white-lead, and white-lead nearly twice as much as red-lead. These are things we know; but we have no idea why they are so. Again, red-lead, which is an oxide of lead, makes an excellent paint for iron; oxide of iron is neither very good nor very bad; oxide of manganese is bad. Our knowledge of paints is as yet largely empirical; chemists dislike to admit this; for, like everybody else, they hate to confess that there is anything they do not know, and thus when a new theory is offered some of them make a great rejoicing over it, without first finding out whether or not it agrees with the facts. Where we are gaining is in more general appreciation of the value of the proper application of paint, better preparation of surface, more confidence in good paint rightly used, and in the better preparation of paint materials. For instance, in the older books, and until about twenty years ago, we find analyses of red-lead showing as low as 55 per cent. of true red-lead, with 45 per cent. of litharge. Red-lead is made from litharge, and the presence of the latter is not a sign of adulteration, but of incomplete conversion. At the same time other samples showed as high as 80 per cent. of true red-lead. As is well known, there was much difference of opinion in those days as to the value of red-lead as a paint for iron; though most users liked it, some thought it poor stuff. It is now known that its value depends on the quantity of red-lead it contains. Coarse red-lead always contains litharge, because the litharge in the middle of a large particle is never oxidised. It was observed that the finer the red-lead, the better it was, and so a demand arose which forced the manufacturers to make higher grades; now they are grinding their litharge to an impalpable powder before roasting it, with the result that 94 per cent. of true red-lead has been on the market for some years. Then an unexpected fact was developed. The old red-lead, when mixed with oil, would set in a day or so—often in a few hours—into a cement, just like plaster-of-Paris and water; this tendency made it work with difficulty and unevenly in application, and its coarseness gave it a tendency to run; but the new, or high-grade, article is inactive to oil, and brushes out smoothly like a house-paint. This enables the painter to cover 50 per cent. more surface with the same quantity and still get a coating having a uniform thickness which gives more protection than the thin portions of the paint formerly used. This secures greater economy, even at a slightly larger cost per gallon; and this is an economy not only in the cost of the paint, but in the labour, because the paint works more easily, and a man can cover more surface in a day; it also requires less skill, and, therefore, a less highly-paid man to do good work. For the last year or two red-lead ground in pure linseed oil has been offered to the trade as a paste ready to be thinned with more oil; such a paste keeps for a year or more, or indefinitely, as far as known, like white-lead paste. Its use saves time and waste in mixing, and, being ground through a mill, the mixture is perfect, which is not the case with hand-mixing; and, as it avoids the presence of a dusty pigment, it is more sanitary.

The only serious objection to the use of such red-lead is that it dries more slowly than the older kinds. This can be obviated, however, by the use of a little japan drier. There is a well-founded prejudice against the use of excessive quantities of drier in any paint; but it should be remembered that red lead mixed in the (standard) proportion of 28lb. of pigment to 1 gallon of oil, contain 20¼lb. of pigment per gallon of mixed paint If this pigment contains 15 per cent. of litharge, it has 3lb. of litharge per gallon Now, ordinary, good, lead japan driers, of lead and manganese driers of approved quality, contain the equivalent of 1lb. of litharge in about 3 gallons of drier; and 3lb of litharge will make 8 or 10 gallons of drier

* To be presented Jan. 7, 1914, at a meeting of the American Society of Civil Engineers.

To make 1 gallon of mixed 94 per cent. red lead paint dry requires only 1 pint of drier; the rest is excess. It is much safer to add the desired quantity of drier. It may be asked why the litharge in the 94 per cent. red lead is not more active; it is probably because, when the peroxidation of the lead has been carried so nearly to completion, the particles of litharge are enveloped so completely by a dense coating of true red-lead that the oil does not reach them. This is obviously not the case with the commoner and less thoroughly oxidised pigment.

It has sometimes been suggested, by those not very familiar with the chemical questions involved, that the litharge is the essentially valuable part of the paint, and that the red-lead is only an inert extender. This is not so. The whole history of the subject shows that the improvement in red-lead for paint during the last twenty-five years has been made by reducing the litharge contained in it; litharge alone, or used with other pigments, has not been satisfactory, though orange mineral, which is red-lead free from litharge, is most excellent, and would be used if the cost were not so great. Further progress will undoubtedly produce red-lead with a lower percentage of the protoxide; in fact, the 94 per cent. red-lead now in the market usually contains much more than 94 per cent. of true red-lead. Progress has also been made in our knowledge of linseed oil. Within a few months the American Society for Testing Materials has adopted specifications for North American raw linseed oil, which is of better quality than that made from South American seed. These specifications are the result of a great deal of work by many of the best oil chemists, and it is now possible for any good analyst to tell whether or not an oil is pure and good. Methods of paint analysis are in general being standardised, and a vast amount of work is going on in Germany and England as well as in the United States, on the chemistry and nature of drying oils. At present linseed oil has adulterants, but no substitute; China wood oil is a valuable drying oil, more valuable for some purposes than any other; but, as an oil for ordinary paints, it is used, as far as the writer knows, only to cover up the use of non-drying oils which must be regarded as adulterants. At present prices it is not likely to be used even in this way. Fish oil is used to some extent, as it always has been, in paint for roofs and smokestacks; but one should not be disturbed by talk about the "newer paint oils," for, except China wood oil, there are none.

In closing, it may be well to mention that the committee appointed by the American Society for Testing Materials has made a final report on the condition of the paints on the Havre de Grace Bridge; as is well known, this bridge was painted six years ago by a committee of that Society, which committee included several members of the American Society of Civil Engineers. This report describes three of the paints as excellent; two of these were straight red-lead in oil, and the third was red-lead with about 15 per cent. of a pulverised silicate added, in oil, the red-lead being about 98 per cent. true red-lead. Nine other paints, of varying composition, are reported as affording generally effective protection to the structure. As all these paints were carefully applied, it is fair to conclude that the durability of any good paint may be increased one-half, and probably doubled, by proper care in its use as compared with average practice. It is only by continually reiterating this fact that we shall ever secure the most elementary and fundamental requirement for the economical treatment of structural steel.

RETAINING WALLS.*

In buildings of ordinary construction the weight of the upper floors and stories increases the stability of basement walls, and it seldom becomes necessary to compute the moment of stability or overturning moment.

With regard to steel-frame buildings, the basement wall receives no assistance from the upper walls. It is therefore necessary to design such basement wall as a retaining wall. The usual allowance for live load due to traffic is:

Heavy vehicular surcharge of 5ft.
Light vehicular surcharge of 3ft.
Pedestrian surcharge of 1ft.

Rankine's formula for earth-pressure—

$$p = w h \left(\frac{1 - \sin. \phi}{1 + \sin. \phi} \right)$$

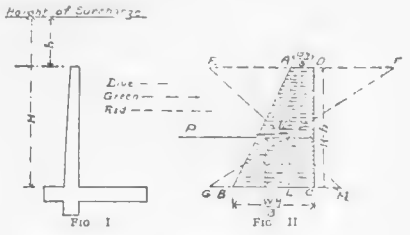
ϕ = angle of repose of soil,
W = weight per foot cube of earth,
H = height from base to top of surcharge,
h = height from top of wall to top of surcharge.

Assume w = 90lb. per cubic foot, ϕ = 30 degrees,

$$p = w h \left(\frac{1 - \sin. \phi}{1 + \sin. \phi} \right) = 90 h \left(\frac{1 - \frac{1}{2}}{1 + \frac{1}{2}} \right)$$

= 30 h lbs., or equal to ⅓ hydraulic pressure.

This pressure has been adopted for checking all designs submitted to the Melbourne City Council. Even where ground will stand by itself, there is always the danger of hydrostatic pressure due to burst mains and service-pipes. In the case of wet ground, such as is experienced in west end of the city of Melbourne, the provision of subsoil drains will reduce the weight of earth, and, consequently, the pressure to 30lb. per foot.



The press at top of wall = $\frac{w h}{3}$ .....(i)

The press at bottom of wall = $\frac{w H}{3}$ .....(ii)

Average press = $\frac{w}{6}(H + h)$.....(iii)

Total press in lbs. p per lineal foot of wall

$$= \frac{w}{6}(H + h)(H - h) = \frac{w}{6}(H^2 - h^2) \text{.....(iv.)}$$

Taking moments of area A L C D and A B L about base B C (Fig. II.) to ascertain the height at which the total pressure P acts—

$$Y = \frac{\text{Area A L C D} \times \text{Height to C. of G.}}{\text{Area A L C D} + \text{Area A B L}} = \frac{\frac{w h}{3}(h - h)\left(\frac{H - h}{2}\right) + \frac{w}{3}\left(\frac{H - h}{2}\right)(H - h)\left(\frac{H - h}{3}\right)}{\frac{w}{6}(H^2 - h^2)}$$

$$\therefore \frac{w h}{6}(H - h)^2 + \frac{w}{18}(H - h)^3 = \frac{M}{P} \text{.....(v.)}$$

$$\frac{w}{6}(H^2 - h^2)$$

or distance Y may be obtained graphically as shown by Fig. II.

Make A E and D F = B C
Make G B and C M = A D
Join E M and G F.

The intersection K gives height Y at which P acts above base B C.

Moment about base = P × Y..... (vi)

Taking a numeral example basement 12ft. deep, ground floor level with pavement. Traffic heavy vehicular. This is an extreme case, such as will seldom be met with in actual practice. The basement wall may be designed as a plate or beam supported at the ground and basement floors, the thrust of the earth-pressure being taken up by the concrete floors. In the case of the ground floor, it is not advisable, therefore, to stress the concrete to its maximum fibre stress when designing same. When the surface levels do not differ materially on the opposite sides of the building, the thrusts are equal and opposite to one another. If the levels vary greatly, the unbalanced force has to be taken up by the stanchions.

Referring to Fig. II., it will be seen that the pressure against wall is made up of the uniformly-distributed pressure $w h/3$, due to the surcharge, and the uniformly-increasing pressure from w H 3 $w h$ 3) due to the pressure of the earth.

The max. B M in both cases is equal to W/8, W being total load, l being space in feet. The max. B M in latter case does not occur at the centre of space, but at a point equal to 0.57 l.

The total B M can be taken as the sum of the two without appreciable error.

Total pressure = 15 (17² − 5²) = 3,960lb....(eq. iv.)

$$\text{Total B M} = \frac{3,960 \times 12}{8} = 5,940\text{ft lb.}$$

This would require for concrete composed of one part cement, two parts sand, and three parts screenings, a 10in. plate reinforced with ½in.-diameter rods 4in. pitch.

When stanchions are placed fairly close together the wall is sometimes designed as a plate spanning between stanchions; it is usual in such cases to vary the thickness of the concrete according to the pressures about every 3ft., the reinforcement in such cases being horizontal.

Design of a brick wall acting as a beam.

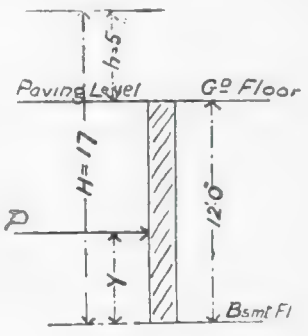


FIG. III.

Total press. = 15 (17² − 5²) = 3,960lb.....(eq. iv)
Moment about base—

$$= \frac{15}{2}(17 - 5)^2 + \frac{5}{3}(17 - 5)^3 \text{ ...(eq. v.)}$$

= 10,800 + 8,640 = 19,440lb.

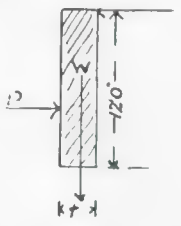


FIG. IV.

E = moment due to earth press.
= 19,440lb. .....(eq. v.)
T = moment due to thrust of ground floor
W = moment due to weight of wall
T must equal E W, or E equal T + W
Moment of wall = $12 t \times 130 \times \frac{1}{2} = 780 t^2$
Moment of resistance of wall = $\frac{b t^2 f}{6}$

$$\therefore \quad 19,440 = 780 t^2 + \frac{b t^2 f}{6}$$

Assuming f = 30lb. per square inch, or 4,320lb. per square foot (cement mortar 3 to 1), we get $19,440 = 780 t^2 + 720 t^2$.

$$1,500 t = 19,440$$
$$t^2 = 12.96$$
$$t = 3' 6",$$

or wall 4½ bricks thick.

DESIGN FOR CANTILEVER TYPE OF RETAINING WALL.

This type is constructed of reinforced concrete, and is not usually employed in buildings. The usual factor of safety against overturning is 2—i.e.,

$$\frac{\text{moment of stability}}{\text{overturning moment}} = 2$$

Assume heel = 2' and thickness of base = 18" (see Fig. 7), forces acting are taken down to underside of base.

E = weight of earth over heel in lbs.
W = weight of wall in lbs.
B = weight of base in lbs.

Total earth press—

P' = 15 (18.5' − 5²) = 4,758lb.....(eq. iv)

* A paper read at the Royal Victorian Institute of Architects by H. E. MORTON, City Architect, Melbourne, Sept. 23, 1913.

Moment about base = $75(18.5 - 5)^2 + 5(18 - 5)^3$
$= 13,668 + 12,302 = 25,970$lb.

$$Y = \frac{B\,M}{P'} = \frac{25,970}{4,758} = 5.46' \text{ (eq. Y.)}$$

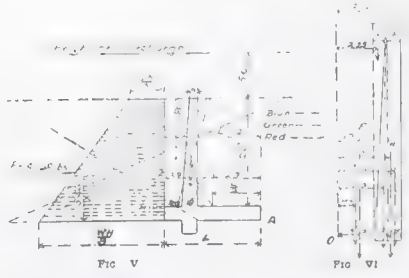


Fig. V. Fig. VI.

Centres of gravity of E and W may be obtained by moments or graphically, as shown by Fig. 2.

Methods of Moments. (See Fig. VI.)

Moments of E about O = $(12 \times 2 \times 1) + \frac{12 \times 0.75}{2} \times (2.25) = 24 + 10.125$

C. of G. of E from O = $\frac{34.125}{\text{area E}} = \frac{34.125}{28.5} = 1.2'$

Moment of W about O = $\frac{12 \times 0.75}{2} \times 2.5 + 12 \times 0.75 \times 3.125 = 11.25 + 28,125$

C. of G. of W from O = $\frac{39.375}{\text{area W}} = \frac{39.375}{13.5} = 2.91$

Weight of E = $12 \times 2\frac{3}{8} \times 90 = 2,565$
Weight of W = $12 \times 1\frac{1}{2} \times 150 = 2,025$
Weight of base = $L \times 1\frac{1}{2} \times 150 = 225\,L$

Taking moments about A (Fig. V.), and allowing Factor of Safety of 2.

$2(P' \times Y') = 2,565\,(L - 1^1)^2 + 2,025\,(L - 2.9) + 225\,L\,(L/2)$
$51,940 = 2,565\,L - 3,078 + 2,025\,L - 5,872 + 112.5\,L^2$
$51,940 = 112.5\,L^2 + 4,590\,L - 8,950$
$112.5\,L^2 + 4,590\,L - 60,890 = 0$
$L^2 + 40.8\,L - 541 = 0.$

Formula for quadratic equation—

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$L = \frac{-40.8 \pm \sqrt{1,664 - 2,164}}{2}$$

$$= \frac{-40.8 \pm \sqrt{3,828}}{2} = \frac{-40.8 \pm 6,200}{2} = 10.6$$

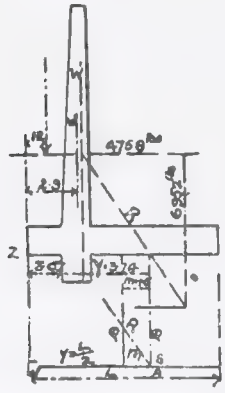


Fig. VII.

To find where resultant R cuts the base vertical (forces only), take moment about Z (Fig. VII.) of all vertical loads and divide by sum of loads to get distance X from Z.

$$X = \frac{2,565 \times 1^1 + 2,025 \times 2.9 + 10^1 \times 1\frac{1}{2} \cdot 150 \cdot 5\frac{1}{2}}{6,952} = \frac{21,350}{6,952} = 3.07'$$

The distance Y from this line at which resultant of all forces cuts base can be obtained graphically or by simple proportion.

$$6,952 : 4,758 :: 5.46 : Y$$
$$\frac{4,758 \times 5.46}{6,952} = 3.74$$

Distance from Z = 3.07 + 3.74 = 6.81.

We have now VIII. figure, the base of wall with inclined resultant R acting at A. This may be replaced with two forces, Q and S—viz., of vertical forces and horizontal pressure of earth.

The vertical force Q at point m feet from centre of base may be shifted to any other point by introducing a couple = $Q\,x$ lever arm through which the force has been moved.

This does not alter total effect of force,

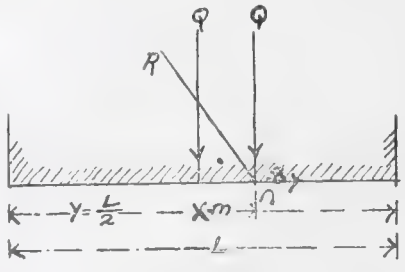


Fig. VIII.

but shifting Q to centre will cause a uniform pressure over entire base and couple $Q\,x\,m$ will tend to cause tension over the left and compression over right half of the base, the total upward earth reaction being the sum of these forces and will equal.

$$\frac{Q}{A} \pm \frac{Q\,x\,m\,x\,y}{I}$$

y = distance in feet of edge of base from centre of same,
A = area of base in square feet taking one foot strip,
I = moment of inertia in foot units of base about its centre of gravity.

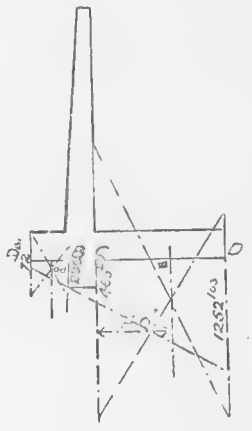
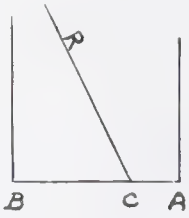


Fig. IX.

$$\frac{6,952}{10.5} \pm \frac{6,752 \times 1.56 \times 5.25 \times 12}{1,157} \qquad I = \frac{b\,d^3}{12}$$

$= 662 + 590$
$= 1,252$lb. compression at D
72lb. compression at A

Another formula for finding the minimum and maximum pressures on the soil is as follows: (A) When resultant pressure falls inside base (Fig. X.) (B) When resultant pressure falls outside base (Fig. XI.)

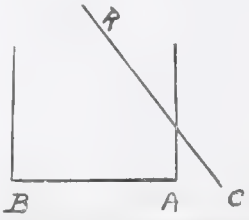


(A) When resultant falls inside base.

Fig. X.

$$\text{Max. compn.} = 2p\left(2 - \frac{3\,A\,C}{A\,B}\right)$$

$$\text{Max. tension} = 2p\left(1 - \frac{3\,A\,C}{A\,B}\right)$$



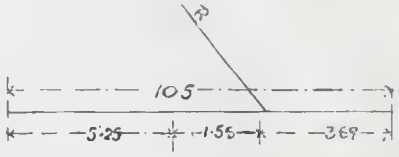
(B) When resultant falls outside base.

Fig. XI.

$$\text{Max. compn.} = 2p\left(2 + \frac{3\,A\,C}{A\,B}\right)$$

$$\text{Max. tension} = 2p\left(1 + \frac{3\,A\,C}{A\,B}\right)$$

p = mean normal pressure on the base per square foot.



$$2p\left(2 - \frac{3AC}{AB}\right) \qquad p = 662 \text{ lbs., (see above)}$$

Max. compn.—

$$662 \times 2\left(2 - \frac{11.07}{10.50}\right) = 1,324\,(2 - 1.055)$$
$$= 1,324\,(.945) = 1,252$$

Max. tension—

$$2p\left(1 - \frac{3\,A\,C}{A\,B}\right) = 1,324\left(1 - \frac{11.07}{10.50}\right)$$

$= 1,324\,(1 - 1.055) = 1,324 \times -0.055 = -72$lb. —i.e., compn. of 72lb.

Next, by graphical construction, find centres of gravity of upward earth reactions causing bending on A B and C D (Fig. IX.).

B M at C = upward reaction on C D × distance of C of G – weight of C D × distance of its centre of gravity from C.

$$\frac{465 + 1,252}{2} \times 7.0 \times 4.0 = 24,024$$

(This causes tension on lower side and compression on upper.)

$7 \times 1.5 \times 1 \times 150 \times 3.5 = 5,512$

(Reinforcement for this B M not computed.)

18,512ft.lb.

B M at B = weight of earth over heel x diastance of C of G from B and weight of heel x distance of C of G – upward earth reaction on A B x distance of C of G from B.

$+ 2 \times 12 \times 90 \times 1 = 2,160$

(This causes tension on upper and compression on lower.)

$+ 2 \times 1\frac{1}{2} \times 150 \times 1 = 450$

2,610

$$-72 + \frac{296 \times 2 \times 0.8}{2} = 294$$

2,316ft.lb.

(Reinforcement not computed.)

Try base for vertical shear at C = upwards reaction less weight of portion C D of base = 6,006 – 1,575 = 4,431lb. Shear strength of base = 18″ × 12″ × 60lb. = 12,960lb. Horizontal shear at B C = earth pressure = 4,758lb. Shear strength of wall = 18″ × 12″ × 60lb. = 12,960lb. Wall and base will not fail by shear.

Sliding.—Forces tending to make wall slide on its base = total earth pressure to underside of base = 4,758lb.

Total weight of wall and earth filling over heel equal 6,952lb.

Co-efficient of friction between concrete and soil may be taken as .33.

The wall would therefore be on point of sliding at 6952/3 equal 2,317lb., but would be prevented by the vertical pressure of the toe against the earth. When necessary to further increase the resistance, the wall is carried down as shown in by Figs. V. and IX.

A heel of greater size would be substituted in this case so as to reduce the length of toe. When a retaining wall abuts on a boundary, the heel is omitted.

The above examples have been worked out to show fully the methods of computation, and I trust will be of use to members for future reference.

Children's homes are being built by the Grimsby Board of Guardians, at a cost of £13,000. They will accommodate 160 children, and are approaching completion.

Mr. James Ross, of Peel-street, Montreal, engineer and contractor, one of the contractors for the Canadian Pacific Railway, who died on September 20, left estate in the United Kingdom of the gross value of £113,438. It is stated that the Canadian estate exceeds in value £3,000,000.

Currente Calamo.

A Merry Christmas and a Happy New Year to every reader! All the wishes which we can offer, we know, cannot insure the first. Even where hearts know not their own bitterness that mocks at all stereotyped mirth-making, the changing conditions of modern life hardly make for the enjoyment of the conventional Christmastide that reached high-water mark in the days of Dickens. Many, this week, are seeking far and wide the recreation which, perhaps, is healthier, if not heartier, than the home feasts of our fathers. May they find it, and reassemble merrier and stronger! All down the ages, we suspect, the keeping of the Christmas feast, and of those which preceded it, has changed oftener than most of us wot. It does not seem to have been observed by Christians at all till the second century, and then it was certainly kept in different places at different times—for the most part in January, April, or May. The Armenians kept it on January 18, the Eastern Church on January 6, and the Latins on December 25. Differences of climate, to-day, differentiate the observance of the feast as much as anything. The Briton is conservative everywhere, of course, and may yet insist on pudding and punch, blaze the Tropical sun ever so fiercely, or the delicious summers of Australia or New Zealand tempt the young folk out of doors to spend the holiday. May its merriment be as real and world-wide as still nobler, and perhaps more lasting, traditions of our race!

To insure the "Happy New Year" which begins next Thursday, we are, at any rate, doing our share. Our "New Year's Number" is—of course—our "veribest." They all have been, and for the best of all reasons. To each in its turn the best men of the time have contributed, and that is why we can boast without egotism. We, after all, are only the gatherers of other men's good stuff. On those who once again next week enjoy it is laid the loyal and, we are sure, well-recognised obligation to help us in their turn, as they climb to the high places of success, to inspire yet another generation with genuine admiration and healthy emulation. Our leading illustration next week is produced by the kind permission of the Trustees of the Wallace Collection, and is a reproduction in colours of Paul Delaroche's "Virgin and Child." As those familiar with the original know, it differs in treatment somewhat from the traditional types. It is neither a "Mater Dolorosa" nor the conventional "Queen of Heaven" of some of the earlier Masters, but rather the most perfect embodiment of the ideal of the ecstasy of maternal love ever realised. Among the best of the rest is a view of St. Mary's Cathedral, Edinburgh, showing the completion of the western towers, and the consummation of the work of Sir Gilbert Scott, Mr. John Oldrid Scott, and Mr. Charles Oldrid Scott. Then there is a view and plan of the New Government Offices, Dublin, of which Sir Aston Webb and Sir T. Manly Deane are the architects. Mr. Walter Crane kindly permits us to give his two lunettes, "Painting" and "Craftsmanship," from the Royal West of England Academy, Bristol. To Mr. Frank O. Salisbury we are indebted for his decorative painting, "The Great Artists of Chelsea," in the Chelsea Town Hall. Miss Wilhemina D. Hickson allows us to reproduce her spirited Prize Design, "A Boar Hunt," intended for the decoration of a public building, for which she was awarded the Royal Academy Bronze Medal this month. Mr. Maurice B. Adams contributes a pencil drawing and plan of the Hall, Castle Howard, Yorkshire, built by Sir John Vanbrugh. Some other good things will complete a number for which we bespeak the willingness of all to accept it as the earnest of our resolve to do our best during 1914 for every reader—and for ourselves!

Mr. G. A. T. Middleton, A.R.I.B.A., has given notice that at the next business general meeting of the R.I.B.A. on Jan. 12 he will move "That this Institute do support to the utmost the Architects' Registration Bill which is to be introduced into Parliament next Session." This brings matters to a crucial issue, and will, at any rate, test the feeling of members on the main question. A special general meeting (adjourned from December 1) will be held Monday, January 5, 1914, when the chair will be taken at 8 p.m., to resume consideration of the report and recommendations of the Council in regard to the Statutory Registration of Architects. The report and recommendations, with the various documents referred to therein, together with summary of the discussion at the special general meeting of December 1, have already been given in these pages. At this business meeting on the 12th proximo the chair will be taken at 8 p.m., when the minutes of the adjourned special general meeting held Monday, June 16, 1913, will be read, and consideration will be resumed of the draft revised schedule of professional charges, commencing with Clause 2.

The letter from the secretary of the Land Union, which will be found on another page, ominously foreshadows the prospective value of Mr. Lloyd George's assurances to taxpayers in another and probably disastrous direction. The Chancellor of the Exchequer has written to the Birmingham Chamber of Commerce stating that no increment value duty is charged on buildings, fixed plant, or machinery, and that all the value attributable to these things is eliminated before any tax is levied. As all builders and others connected with the building trades know to their cost, the bitter experience of the past three years has proved the misleading nature of such assurances; and, so far, the futility of all our efforts to prevent the Commissioners of Inland Revenue from charging increment value duty unless the value of the bare land, independently of buildings, etc., has risen in value. In the Plymouth, Richmond, and Palmer's Green test cases it was admitted, on behalf of the Crown, that the value of the land had not risen a penny, nevertheless increment value duty was claimed. Is it not but too probable that if owners of houses are to be taxed when they sell their houses for more than the Commissioners think they are worth, it will soon be the turn of owners of machinery to suffer the same fate? Is it not certain, when that comes, that the blight which has fallen on our own trades will blast every industry in the country?

Mr. Cheverton Brown, of Hull, the president of the United Kingdom Federation of Property Owners' Associations, at the half-yearly conference held last Friday in Manchester made some very pertinent comments on the present system of taxation and the housing schemes of a number of local authorities. During the last few years, he said, rates—levied and extracted solely from land and houses—have increased by not less than 2s. 5d. in the pound. Bearing that in mind, it seemed incredible that investments in land and houses were once more to be made the object by Government of heavy burdens. The Chancellor of the Exchequer by his Budget of 1909-10 had depreciated capital investments in land and houses by millions, had practically stopped building, and had frightened capital to such an extent that 300 millions had been deflected abroad during the last three years. He took the Liverpool Corporation housing scheme as an illustration of his argument against municipal housing. Up to the end of December last Liverpool, he said, had erected 2,747 dwellings at a total cost of £1,245,040, or an average price of over £453 per house. The net rental, after deducting expenses and repairs, was £10,535, and after crediting all net receipts, the total deficiency falling on the Liverpool rates was £37,327, or a rate of 2½d. in the pound, while the houses built were occupied, not by people out of the "slums," but by the better class of skilled workmen, at the expense of the ratepayer.

It is proposed to hold an important and representative exhibition of woodland and timber industries in London next year, under the auspices of the English Forestry Association. Invitations to co-operate will be extended to all bodies interested in the subject, and it is hoped to obtain the enthusiastic support of all concerned with English timber and underwood, so that a real effort may be made to improve the present unsatisfactory position of affairs. Wherever sufficient and proper supplies can be insured, a greatly-increased demand is being organised for *all* classes of English timber and underwood, and especially for oak, larch, and Scots pine. At the coming exhibition all these points will be illustrated, and, in order to secure the best results, the council of the English Forestry Association invite particulars from landowners and land agents as to supplies of timber and underwood that might be felled in the near future, so that the demand may be cultivated and regular supplies insured; from timber merchants and others as to English timber which they convert, or as to stocks which they hold, so that architects, railways, and other consumers can be given the names of those who can supply whatever may be required; and from all interested in woodland industries as to goods which they sell, as to supplies of coppice-poles or timber which they require, and as to special difficulties with which they have to contend. The English Forestry Association invite all who are interested to communicate with the honorary secretary, English Forestry Association, Farnham Common, Slough, Bucks, with a view to making the coming exhibition a success, and helping them to prove that British timber and British goods, manufactured by British labour, can compete successfully with foreign productions.

Lord Plymouth has saved the Crystal Palace. But for his spirited generosity, its doom would have been sealed. He first came to the rescue two years ago, and he has once more been the good genius who, by an act of rare munificence, has removed all difficulties. Relieved of the heavy charges which

rendered its continued existence impossible, the Crystal Palace will, we all hope, now start on a fresh lease of life. It undoubtedly possesses natural attractions and advantages which should secure for it, under a discerning management, all the public favour it at one period enjoyed. The problem of good management will not be an easy one. The building itself is a costly structure to maintain, and may at no distant date necessitate burdensome expenditure. It can hardly be said that the preservation of the Alexandra Palace has proved a complete success as far as the use of the building goes, or that full advantage is taken of all the beauty of the grounds; and most of us will hope that at Sydenham the resources of those concerned may, somehow, prove more adequate.

Some New York architects and engineers seem to believe that the "inverted sky-scraper," which is to be built downwards instead of upwards, is a certainty of the near future in that city. It has been reported many times that the State of New York, or the City authority, was about to fix the limit of the sky-climbers—the latest, for the Pan-American Union, is to be 800ft. high—but nothing comes of it. Anyhow, it is rumoured that very shortly the first inverted sky-scraper is to be started, and carried "fifty or sixty stories" below-ground. We suppose the conditions beneath the surface—sewerage, water supply, and the like—are much the same as prevail here, except that there are no deep tube railways. Burrowers in the bowels of the earth will therefore, we take it for granted, have to devote one subterranean story, at any rate, to the accommodation of the sewers and the gas- and water-mains. Here in London, if necessity ever induced underground construction of the kind, would the obligation rest on the building-owner to arch-over and tunnel beneath the trains on the Twopenny-tube and Bakerloo routes?

A village hall has just been opened at Westbury-sur-Mendip. The builders were Messrs. Dennis Brothers, of Westbury.

The Local Government Board have granted sanction to the borough council of Southwark to borrow £29,334 for extensions to the electricity undertaking.

More street-paving was done in Buenos Aires in 1912 than in any previous year. The supply of imported setts amounted to over 200,000 tons. About 55 miles of streets were repaved.

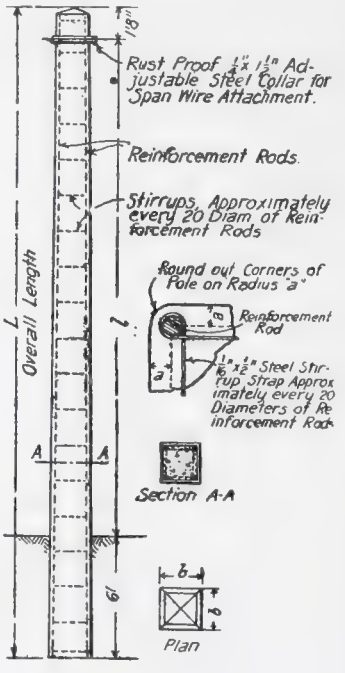
A new council school at Bettws, built at a cost of £3,077, has been formally opened. The plans were by Mr. D. Pugh-Jones, the county architect, and Messrs. Knox and Wells were the contractors.

At a meeting of the public health and housing committee of the Birmingham City Council on Friday, it was reported that satisfactory progress was being made with the extension of the Yardley-road Sanatorium for Consumptives. It was further intimated that the extension at Salterley Grange Sanatorium was nearly finished, and that the new accommodation at West Heath was completed. The extension scheme provides for 142 additional beds at Yardley-road, 20 at Salterley Grange, and 22 at West Heath, which will cost over £31,000.

Arising out of applications made by the urban district council of Weston-super-Mare for sanction to borrow sums of £11,000 for the erection of new slaughter-houses in Langford-road, £2,120 for wood paving to be laid in Waterloo-street and Regent-street, and £1,600 for the construction of what is known as the new "Middle Road to Worle," Mr. W. M. Cross, M.Inst.C.E., an inspector of the Local Government Board, attended at the Town Hall, Weston, on Tuesday, for the purpose of taking evidence in regard to such applications. The only opposition arising was directed against the proposed £11,000 expenditure for new abattoirs.

SUGGESTED DESIGN FOR REINFORCED CONCRETE POLES.

A suggested design for concrete poles was included as a part of the report of the committee on power distribution presented before the American Railway Engineering Association at the annual convention, at Atlantic City, N.J., October 15. The committee reported that not much information was available on the subject of reinforced concrete poles, and the design, which is shown in the drawing reproduced herewith, was presented only in a tentative way for experimental purposes. "An effort was made to have a simple design," the committee states, "and it is fully believed that that presented will meet the ordinary requirements for a trolley line. No doubt experience will determine a number of ways in which the pole may be improved." It is intended to serve the same purpose in trolley line construction as the wood or steel pole ordinarily used. This particular design has not been manufactured or tested in actual use, as yet.



Specifications accompanied this section of the report, of which those parts pertinent to the design of the pole are as follows:—

"Poles may be manufactured in wooden or steel forms, cast in horizontal position, and will require great care in handling during erection. The area of reinforcing rods shall constitute practically 4 per cent. of the base area of the pole, and shall be made up of four reinforcing bars placed as shown in Fig. 1. The modulus of elasticity of the reinforcing steel shall be at least 30,000,000. The longitudinal reinforcements will require stirrups at intervals of from twenty to fifty diameters of the reinforcing rods. These stirrups may be ¼in. rods, or 1-16in. by ½in. straps, and should be bound around the four rods with a few inches extension of the ends to insure anchorage. By using sufficiently heavy stirrups and giving a complete turn about each longitudinal rod, the reinforcement can be formed into a self-supporting frame that will require only an occasional wooden spacing block to hold it in position while concreting the blocks to be removed as the concreting progresses. The span wires may conveniently be fastened to the pole by an adjustable collar of steel, or an aluminium fixture may be embedded. If steel is used, it should be approximately ¼in. by 1½in., adjustable and rust-proof. Steel pin pole steps may be inserted, and gains for cross-arms may be moulded when pole is being manufactured, as desired. The pins used shall be rust-proof. The concrete shall be made of Portland cement, meeting the test requirements of the American Society of Mechanical Engineers, of clean, sharp sand, and crushed stone, which shall be clean and free from dust, and not more than ¾in. in its largest dimension. Clean washed gravel of the same size may be used in place of stone. The mix shall be of a richness of at least 1 part cement, 2 parts sand, and 4 parts stone."

OPEN-AIR SCHOOLS.

The Education Committee for Cheshire received and discussed at the last meeting reports on the question of providing open-air classes at elementary schools, and finally decided not at present to make specific provision for such schools, but to direct the managers of departments in which physical exercises are carried out to arrange, where permissible, for such training to take place out of doors. A letter had been sent out to the managers of all elementary schools in the county area, asking for an expression of their opinion on the desirability and practicability of extending (under suitable conditions) the practice of holding open-air classes in the usual school subjects, and especially in physical exercises. Only 162 replies were received to inquiries addressed to 455 departments, and these answers varied greatly in tenor.

Mr. H. Beswick, of Chester, the county architect, sent a report giving his views on open-air schools. Mr. Beswick reported that it would be quite possible to provide in new buildings about to be erected classrooms constructed so as to have one side of the room thrown open at will to form an open-air classroom without interfering with the main lighting from the windows. The movable side of the classrooms would open on to a low verandah, which would protect it from the rain and form the means of access in place of a corridor. The arrangement of classrooms would require an entirely different type of school to that adopted by the Cheshire Education Authority. The type of plan would be considerably influenced by the nature of the site, its aspects, surroundings, and approaches, which would have to be considered in designing the building. Only one-story buildings could be erected to meet the special requirements of open-air schools. The Council schools erected during the past few years appear to have been well-designed and provided with sufficient means of natural ventilation by means of windows, ventilator dormers, and fresh-air inlets. If these were used to the full extent available, there would always be a healthy state of atmosphere in the various rooms, but evidently not equal to an open-air classroom. With regard to old school buildings taken over by the county and adopted as Council schools, these are generally so full of original defects as to make it very difficult to adapt the buildings on modern lines.

Dr. Meredith Young, the county medical officer, in a report expressed himself in favour of building as many classrooms as possible with the whole of one side constructed of a folding partition, glazed for about the upper two-thirds, and with glazed verandah with concreted floor outside. Teachers should be encouraged, in fact, definitely instructed, to demonstrate methods of ventilation practically in the schools under their charge, and not merely to discuss the special methods and appliances available in the schools, but to teach children how to make the best uses of those methods which are available in every home.

A new Congregational church, built on a plot between the Manchester- and Tapton Crescent-roads, Sheffield, has been formally opened. The architects were Messrs. Chapman and Jenkinson, of Norfolk-row, Sheffield.

The partnership hitherto subsisting between M. Boff, T. Waterman, and A. K. Waterman, under the style of G. and J. Waterman, at Watford, in the business of builders and contractors, has been dissolved so far as regards T. Waterman.

The Walsingham Rural District Council having applied to the Local Government Board for sanction to borrow a further sum of £3,000 for the purpose of the Fakenham sewerage and sewage disposal, Mr. F. O. Stanford, A.M.I.C.E., one of the Board's inspectors, held an inquiry in the Corn Hall, Fakenham, last week.

Our Illustrations.

WAREHOUSE, STAMFORD STREET, BLACKFRIARS, S.E., FOR MR. J. SAINSBURY.

This distributing warehouse is built of ferro concrete to take very heavy loads, with outside walls of brick, stone, and granite. The plinth, about 6ft. high, is polished grey granite, with axed grey granite to sill of second floor. Above that is Portland stone, with Lawrence's dark red facing-bricks. The roof is covered with Westmoreland green slates. There are two stories below the street and the foundation work was rather difficult, the site being so near the Thames. The offices are on the top floor, and are being very handsomely fitted. Mr. A. Sykes, F.R.I.B.A., of Finsbury-pavement, is the architect.

NORMANDY STUDIES.

(Royal College of Art Sketch Club. Club Prize Set of Sketches in Black and White. By Mr. W. M. Keesey, A.R.C.A.)

The Grande Place, St. Lo, shown by the upper left-hand sketch, includes the lower part of Notre Dame, which is very beautiful in colour, and much finer architecturally than many cathedrals, with its two noble western towers and spires. The canopied external pulpit attached to the N.E. side of the building is of 15th-century date, and makes one of its distinguishing features. From this pulpit the bishops of old time used to deliver their temporal and spiritual edicts. On the other side of the market-place stands La Maison de Dieu, a very beautiful old half-timber house, well known to architects. Glazed earthenware pots and pans are displayed for sale in this market-place. The Place de St. Sauveur, Coutances, seen in the second top study, is singularly level, considering the hilly site on which this old town stands, and hemming in the magnificent cathedral, built chiefly during the episcopate of Hugues de Morville (1208-38); its picturesque streets of common-place houses radiate round the market-square, at one end of which this great church stands enthroned, as it were, above the grey citadel stronghold, environed by its verdant ramparts. The Bishop's Garden eastward, beyond the great apse of the cathedral, is a memorable and beautiful spot, from whence the triple towers of the mother church are seen to great advantage.——The West Door, depicted below to the left, is from the famous Late Gothic Church of St. Etienne, Caen, the convent of which belonged to the Abbaye aux Hommes, founded in 1064 by the Conqueror to expiate his marriage with Matilda of Flanders, who already was another man's wife, and whose divorce had not received Pontifical sanction. This 15th-century Church of St. Etienne de Vieux on the Boulevards, a little beyond St. Etienne, is now much mutilated, and used as a warehouse. A much-broken equestrian figure on its walls is pointed out as intended for William the Conqueror. Mr. Keesey's charming sketch gives a capital idea of the delicacy and richness of the detail of this most interesting but desecrated building.—— The last subject furnishes a good idea of the tortuous streets of the hillside town of Coutances, already mentioned, and Rue Geoffroy is very typical of its smaller thoroughfares, which, from the central tower of the cathedral may be seen twisting in and out, round about the precincts, filled on market day with varied merchandise allocated in different classification, so that the vendors of each sort trade together—crockery in one street, poultry in another, and so on.

WAREHOUSE, PENTONVILLE ROAD, FOR MESSRS. LILLEY AND SKINNER, LIMITED.

This is a large distributing warehouse, six stories high, built of ferro-concrete, except the outside walls. The front is of Lawrence's bricks in two shades, with rubbed pilasters and Excelsior patent stone cornices, etc. Mr. A. Sykes, F.R.I.B.A., is the architect.

"A SUPPLIANT": ROYAL ACADEMY PRIZE AND SILVER MEDAL CARTOON.

Sir Edward Poynter, R.A., the President, when announcing the awards, said this Cartoon was just what he wished to see, and he added that in studies of drapery all the competitors' work for this subject this year were of a very high order. No warmer praise could be accorded, and it was well deserved, for no doubt the simple, restrained attitude of the figure shown by the prize Cartoon finely expresses its subject, which was set by the Royal Academy Council. Miss Hilda Marion Hechle, of Hampstead, is the winner of this Silver medal and prize of £25. There were three competitors, but the other two designs were by no means so successful in realising the idea of "A Suppliant," though both cartoons were marked by skill of a decorative and dramatic order. Miss Hechle relied more on dignified simplicity and on a refined delineation of graceful folds of her draperies, which were well arranged and excellently expressed. The proportions of her Cartoon precluded its reproduction as a double-page plate, for which size the composition is too long and narrow.

MEASURED DRAWINGS OF FIRE-PLACES, HADDON HALL.

These two sheets form part of a series which Mr. H. A. Welch, of Huddersfield, is intending to publish in the collected form of a book, and these two excellent examples show how thoroughly the subjects chosen have been dealt with and delineated in a workmanlike manner. We have on many occasions illustrated and described this famous baronial mansion, which is one of the most complete and well preserved of its kind in England, standing as it does, replete with historic associations, on a wooded hill-side overlooking the windings of the Wye. Some parts of the building date back to Norman times, and the oak panellings and plaster decorations form a fine feature in all the principal apartments. We gave a reproduction of a silver medal set of drawings of Haddon Hall by Mr. Frank Bellis in the BUILDING NEWS for February 11 and 18 and March 11, 1887, while in April, 1875, a series of measured drawings of woodwork in the chapel, etc., appeared from drawings by Messrs. Morrison Marnock and Maurice B. Adams. Photographs of the buildings have also been included in our pages from time to time, several appearing on Sept. 23, 1904, when we reviewed the capital handbook on "Haddon Hall," by Mr. F. H. Cheetham (Messrs. Sherratt and Hughes, 27, St. Anne-street, Manchester). One of the fireplaces illustrated to-day is that in the "dining-room," which is approached from the Banqueting Hall. It was formerly known as the "withdrawing room"; but that was a misnomer, as it was more probably the "Solar" or the Lords' Chamber. This "dining-room" is beautifully wainscoted and enriched by carvings in the upper panels, arranged as a kind of frieze, with lovers' knots, heraldic bearings, and shields of arms between boars' heads and quaint designs. Other panels contain warriors' heads in circles, one being said to be that of Will Somers, Court Fool to Kings Henry VII. and Henry VIII.; but his representation at Hampton Court without a beard makes it doubtful whether the hirsute head of Renaissance character here seen justifies the story about this "jester of Haddon." The ceiling is divided in bays by five beams, the mouldings at one time being painted and gilt, as traces still observable bear witness. The ceiling was originally coloured. This has been verified by chipping away the plaster and whitewash in places. It appears that this scheme included the Talbot dog, the ancient coat of Vernon, and this work is attributed to Sir Henry Vernon (1467-1515), who married Anne, daughter of John Talbot, Earl of Shrewsbury. The oriel recess is a most lovely piece of work, the bay window overlooking the lower garden. This is a later addition to the room. By the end of the 16th century the old use of the hall as a common living place was going out of fashion, and was chiefly utilised for great occasions and Christmas revels, so that privy parlours and family dining-rooms came into use, as, for example, at Wanswell Court, in Gloucestershire, dating 1400. The dining-room fittings date about 1545, as these numerals appear in the panelling done by Sir George Vernon. It is 32ft. long by about 16ft. wide, and is low in height. The mouldings are worked in the solid, and over the panelling is a carved cornice pierced with quatrefoils and Tudor roses set between the cuspings. Over the fireplace, along the middle rail, is a carved motto, taken from an edition of the Bible older than the Authorised Version: "Drede God and Honor the Kyng" (1 Peter ii. 17). Above are the Royal Arms and the arms of Vernon. The fireplace is executed in local sandstone, and the grate is interesting and quite plain, with a vertical grille, as used in modern grates. The "drawing-room" is approached from the banqueting hall by a stone staircase; but it is larger than the "dining-room" which is below it. The room measures 40ft. by 15ft. wide. The name, of course, is modern. Flemish tapestry hangs round the walls below a deep plaster frieze treated like a cornice, in five heights, each division being enriched by a running pattern of floral character. The details of the panelling are more refined than those in the "dining-room"; but part of the plasterwork was destroyed about the middle of the last century. The copper fire-dogs are extremely fine, with their circular bosses of elaborated open design, and the old grate is of the "basket" type, with fleur-de-lis on the independent uprights in wrought iron.

The public works committee of the Birmingham City Council has appointed Mr. H. A. Purchase building surveyor to the corporation in the place of the late Mr Aaron W Lee.

New central premises for the Young Men's Christian Association in Colston-street and Trenchard-street, Bristol, are about to be built from plans by Messrs. Oatby and Lawrence of that city.

At the parish church of Friston, East Suffolk, the Bishop of Norwich has dedicated a reredos of oak picked out in gold and colours. It was designed by Mr. Gambier Parry, architect, of London.

Mr. J. S. Pickering, borough engineer of Cheltenham, has been elected president of the Institution of Municipal and County Engineers. Mr. Pickering began his professional career as a pupil of the late Mr. J. T. Eayrs, at West Bromwich, and was for some years surveyor of Nuneaton. The annual meeting of the institution will be held in Cheltenham in July.

An offer by Councillor E. F. Melly to build a public art gallery and museum adjoining Riversley Park, Nuneaton, if the town council would buy the site has been accepted by the town council. Councillor Melly said his idea was to promote a love for art, and in addition to giving the building he would find a number of pictures. He has already given a public park to the town.

The demolition will shortly take place of five of the old houses standing between the Standards Department of the Board of Trade in Palace-yard and 28, Abingdon-street, with the result that much of the inconvenience which has hitherto attended the entry of the Royal coach into the courtyard of the House of Lords, and the subsequent turning for the journey back to Buckingham Palace, will be avoided.

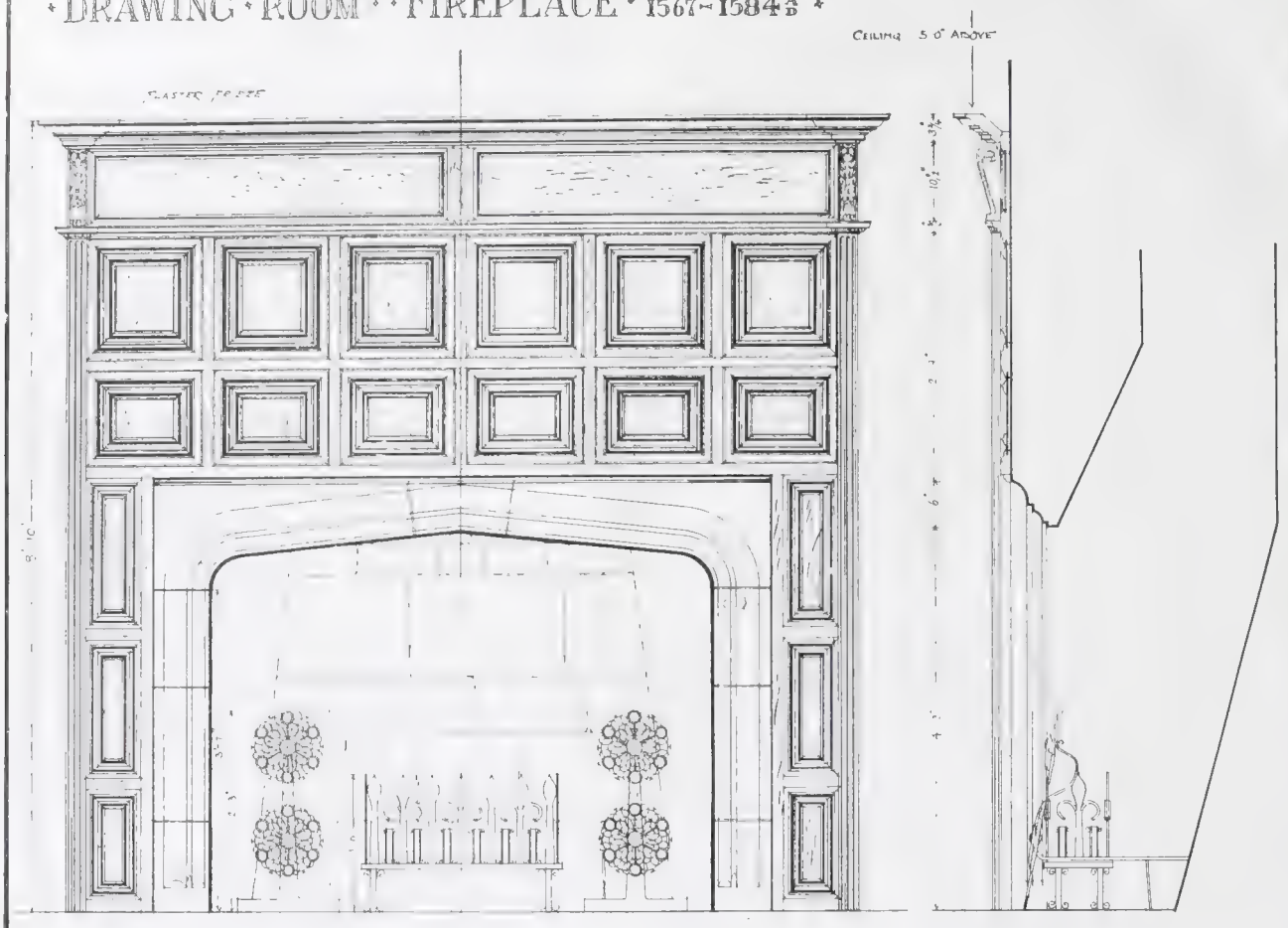
The Lowestoft Town Council are about to extend their sewerage system into outlying districts at an estimated outlay of £11,120. The 15in. and 18in. sewers are to be lengthened, and the further extensions will be carried out in 9in. stoneware glazed socket pipes. The sewage will be raised at three automatic pumping-stations, each provided with duplicate vertical centrifugal pumps driven by electric motors.

A junior architectural club has been formed at McGill University, Montreal, by the students of the Department of Architecture. At its meetings addresses will be given by men prominent in the profession. Membership is to be extended beyond the university, to all junior draughtsman in the city. The officers elected for the year are: President, W. C. Hyde; vice-president, J. L. Robertson; secretary, H. G. Henson; treasurer, R. W. Robertson; advisory board, Prof. Ludlow, Prof Groquair, C. Booth, M. Todd, and W. A. I. Anglin.

HADDON HALL DERBYSHIRE

DRAWING ROOM FIREPLACE 1567–1584

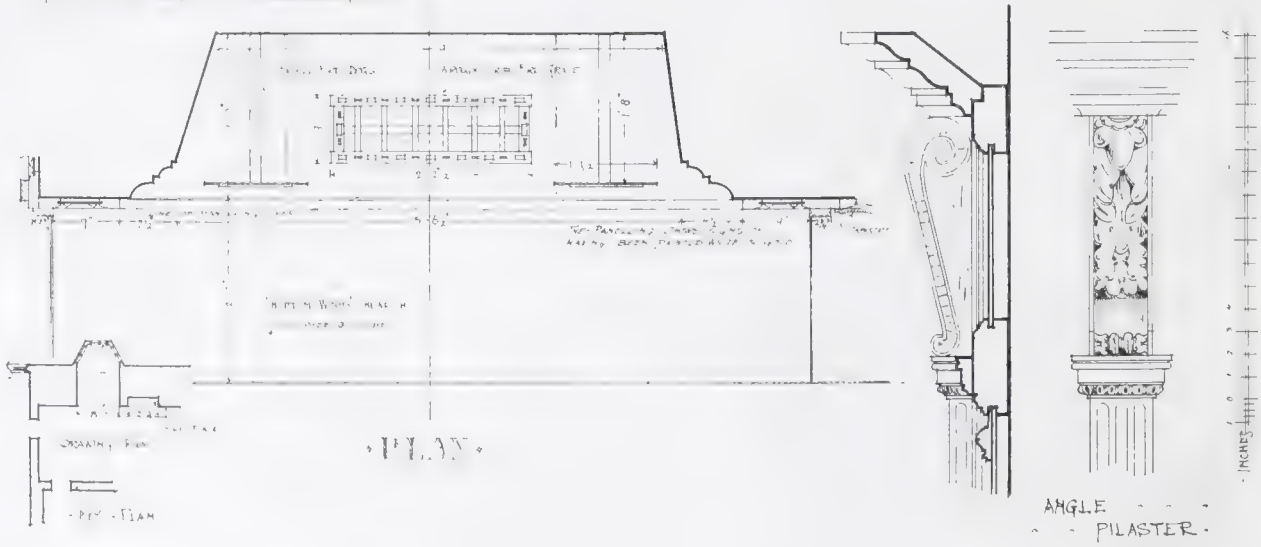
Measured and Drawn by
H. A. Welch



ELEVATION SECTION

Note.

This fireplace is executed in stone with wood panelling around. Above this [illegible] a deep and beautifully [illegible] frieze of late 16th century work [illegible] tapestries are hung, [illegible]

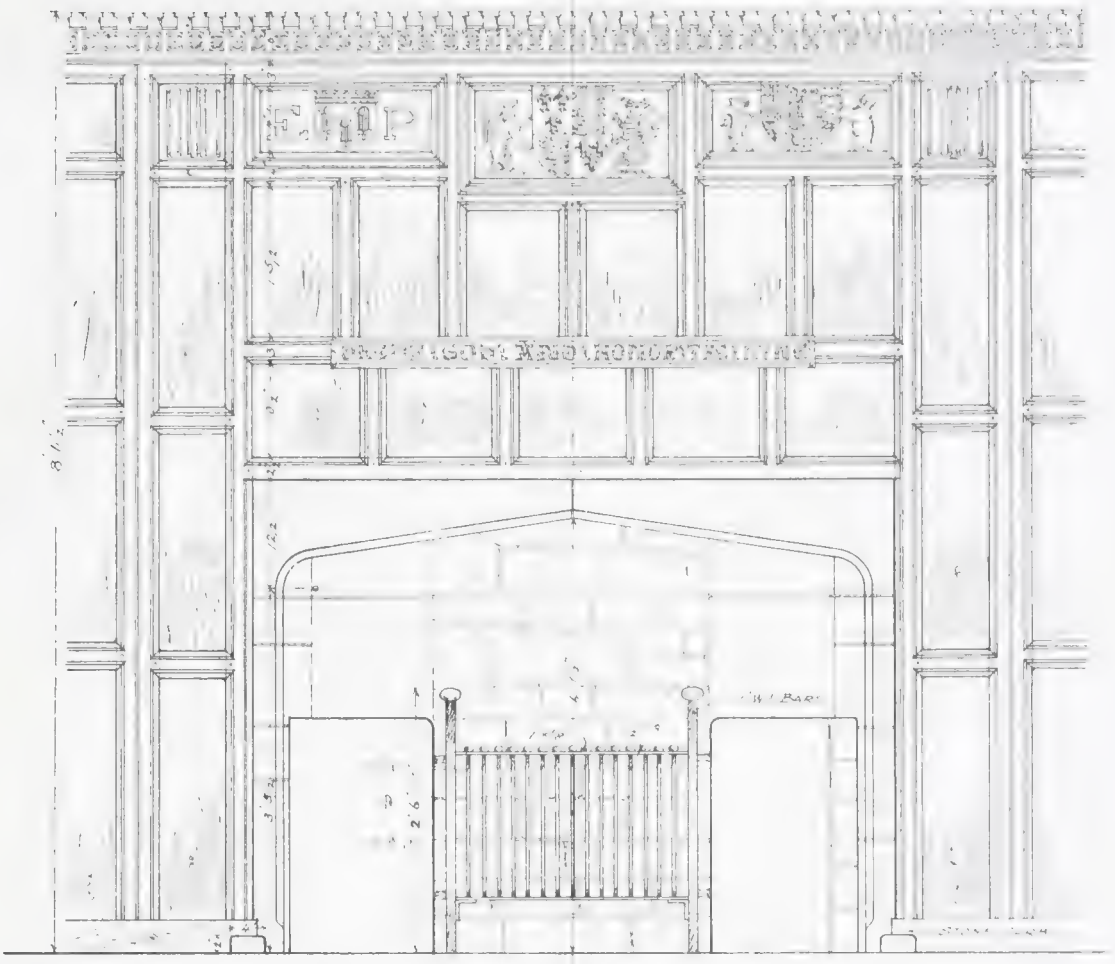


PLAN

Angle Pilaster

Inches Feet

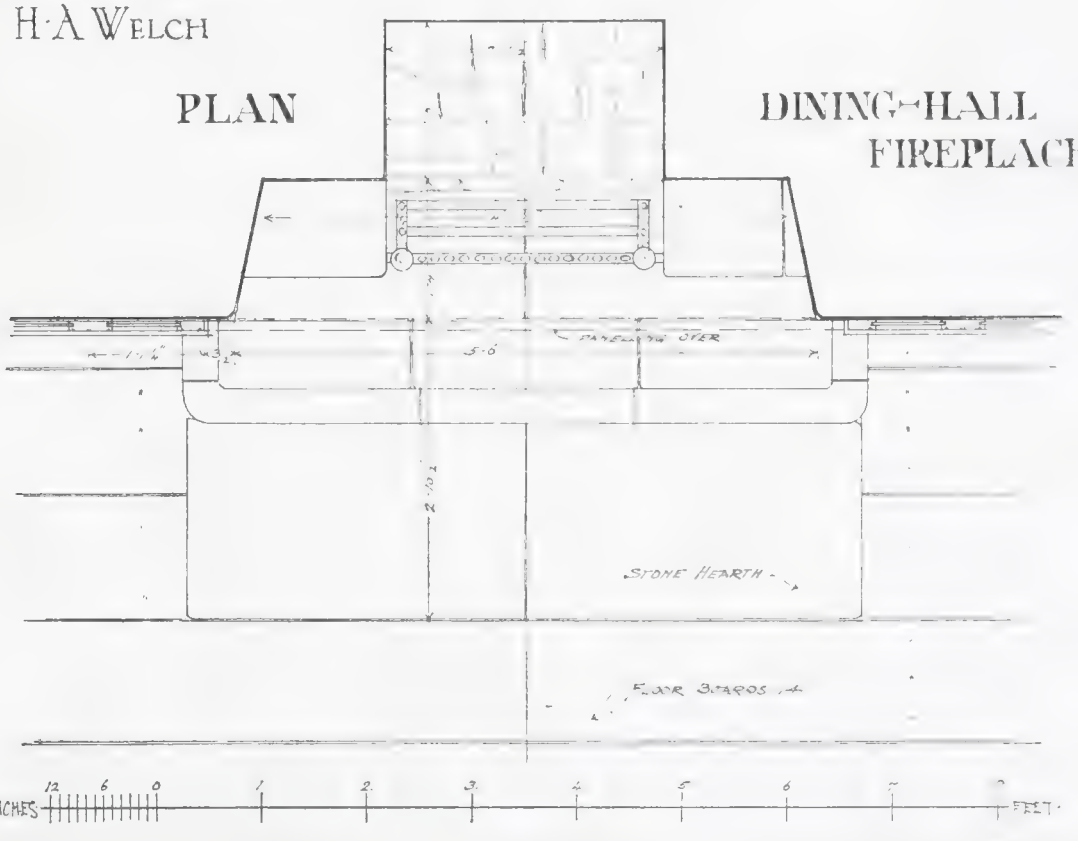
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DINING-HALL FIREPLACE



BOYLE'S LATEST PATENT AIR-PUMP VENTILATOR.

Messrs. Robert Boyle and Son's system of Natural Ventilation, which for half a century has been too well known to all readers to need more than mention, continues to elicit the complete satisfaction of all who adopt it.

It goes without saying that their world wide experience cannot fail from time to time to suggest to Messrs. Boyle fresh adaptations of the principle identified with their name. Two of these, illustrated and described in a new leaflet just issued, are well worth attention. One is their latest patent "Air-Pump" Ventilator, which has double the extracting power of earlier forms. Design No. 175 B is especially commendable. As the extracting power of a ventilator of correct scientific construction is solely determined by the size of the head, and not by the diameter of the shaft attached to it, small pipes can be employed with this ventilator, reducing the cost of the installation without affecting the efficiency, friction being allowed for. In addition, the ventilator is considerably lower in price than its previously catalogued predecessor of similar form.

We may also direct notice to Messrs. Boyle's latest improved air-inlet bracket, design No. 245 B, which, though but slightly less ornamental than their catalogued designs, No. 245 is equally as effective and well made, and substantially lower in price.

OBITUARY.

Mr. John Sutcliffe, well known through out the United States as a church architect, died recently at his home in Oak Park, Illinois. His birthplace and early home was the county of Lancaster, England, and for several years he served the British Government as chief draughtsman in the dockyard at Portsmouth. In 1886 he went to America, working first in New York City, then on the staff of the *American Architect* in Boston. Later he moved to Chicago, where he specialised in church architecture of Gothic design. Among the examples of his work in Illinois are St. Luke's Church at Evanston, St. Paul's (the pro-cathedral), at Springfield, and Grace Church in Oak Park. Mr. Sutcliffe is survived by his wife and five children.

The Théâtre Edward VII. in the new street in Paris, which has been named after our late King, has been formally opened. The work of building, decorating, and furnishing has been carried out by Messrs. Hampton and Sons, Pall Mall, S.W., under the direction of the architect, Mr. W. G. R. Sprague.

"J. C. G.," of Edstone, Kirby Moorside, asks advice as to the best means of saving the old Saxon sundial over the south door of Edstone parish church. The lettering, which is said to date from the 7th century, is being gradually effaced by the weather. The stone is built into the sundial under the eaves of the roof.

Several South Yorkshire towns and colliery villages are combining to improve their means of communication by carrying out a light railway scheme, estimated to cost about £120,000. This will serve a populous section of the Don Valley between Barnsley and Mexborough. The scheme has been prepared by Mr. Steven Sellon, and provides for a route about 15 miles in extent.

The general prosperity and steady growth of New South Wales are strikingly demonstrated by the building operations in Sydney. A sum of about £7,000,000 was expended during the year on building, being an increase of £750,000 as compared with last year's figures. New buildings numbered 8,476, of which 200 were in the city proper. There is a promise of still greater activity next year.

The contributions to the fund for a memorial of the late Bishop of Lichfield now amount to £1,022. It has been decided by the committee to allocate £350 to the erection of an episcopal seat in the sacrarium of the cathedral, and £200 for the provision of a portrait of the Bishop to be added to the collection at the Palace. The Hon. John Collier has been selected to paint the portrait. The balance is to be devoted to the Tyrrell Selwyn Fund for sick and infirm clergy [illegible]

Engineering Notes.

LIVERPOOL.—The Mersey Docks and Harbour Board have received a report from the works committee recommending them to increase the length of the proposed river entrance lock leading to the new Gladstone half-tide dock from 870ft. to 1,076ft., at an estimated additional cost of £118,000. The consideration of the matter was postponed to the next meeting, in conformity with standing orders. Mr. Hughes, chairman of the committee, said that since the original plans had been approved by the Board, Mr. Lyster (late chief engineer) had made arrangements which would bring about a saving of £64,000 or £65,000, so that the alteration would only exceed the original estimate by about £50,000 or £60,000.

PETERHEAD HARBOUR OF REFUGE.—The engineer's report of progress for the year ending March 31, 1913, has been issued as a Parliamentary Paper. During the past year the south breakwater was extended 75ft. to its altered termination at 285ft., the blockwork of the circular head completed to formation level ready for the erection of the lighthouse, and about one-quarter of the concrete apron around the pier-head foundations was laid. In May, 1912, a beginning was made with the north breakwater on the basis of the modified alignment. The excavation of loose rock and debris on the site of the breakwater root and Titans table was completed, and the superstructure, 154ft. in length, erected thereon, up to formation level, 20ft. 6in. above low-water level. The breakwater was also extended seawards of the root work for 28ft. at formation level, and a further length of 17ft. 6in. of the seaward face brought up to 15ft. above low water, making altogether 182ft. of breakwater completed to formation level during the year. A branch railway was constructed across the foreshore between the workyard and the Peterhead Trustees' south harbour, and a discharging berth formed there for unloading material. The daily average number of convicts employed during the year was 245. In 1911-12 the number was 258, and in 1910-11 277. The annual report of the surveyors shows the measurements of work done on the basis of Sir John Coode's original estimate, plus a percentage to cover the estimated increase of cost of £160,000 due to the dearth of convicts, and the consequent greater cost of labour. The total value of the work executed to March 31 was £760,047, and the expenditure was £737,396. The net saving was £22,651.

The Barnet Urban District Council have before them a proposal to apply to the Local Government Board for authority to prepare a town-planning scheme for the parishes of Arkley and Totteridge.

The second International Conference for drawing up a map of the world on the scale of 1 to 1,000,000 has just concluded its sittings, held in Paris. A proposal submitted by the British delegation was adopted creating a permanent bureau of the Conference in the Ordnance Survey at Southampton, with a branch in London.

At the annual meeting of the State of Washington Chapter of the American Institute of Architects, the following officers were elected for the ensuing year:—President, Charles H. Alden; vice-presidents, J. F. Everett, G. F. Gove, K. K. Cutter; secretary, Arthur L. Loveless; treasurer, A. C P. Willatzen; for council, W. R. B. Willcox.

At the meeting of the town council of Devizes on Friday, the town clerk reported the receipt of an offer from the agents to Lady Rich (widow of the late Sir Charles Rich, Bart., of Shirley) to the borough to sell the Castle and grounds (an approximate area of 42 acres), the price being about £15,000. It was agreed to write and courteously decline the offer.

Mr. Alexander Walker, city assessor, has prepared a statement showing the valuation of the burgh of Glasgow for the year 1913-14 to be £7,472,675, exclusive of new buildings which have been erected since May last. The increase for the year amounts to £165,000, of which £121,416 is in the area of the burgh as it existed before the extension of 1912.

COMPETITIONS.

THE LONDON SOCIETY'S PRIZE.—The gold medal of the society and £15 is offered for the best design for the improvement of the North and South Entrances to the Broad Walk of Kensington Gardens, London. The fullest liberty is offered to competitors with regard to the alteration of existing conditions and as to the nature of the architectural and garden treatment to be proposed. The extent to which the proposals shall apply is not limited, provided that in accordance with the promoters' intentions both entrances to the Broad Walk are dealt with. It is suggested that in any case the scheme should include handsome gates. Emblematical ideas might be embodied in the sculpture, etc., such as, for example, the Progress of Queen Victoria's Reign and the Peace of King Edward's. Drawings required: Block plan to Ordnance scale (88ft. to 1in.); plans and elevations of north and south ends, showing architectural features to ½in. scale; one double-elephant sheet of detail to ½in. scale; at least one perspective sketch. All schemes, to be eligible, must be delivered on or before Wednesday, March 11, 1914, at the office of the Royal Institute, addressed to the Secretary, R.I.B.A., 9, Conduit-street, Hanover-square, London, W. Each packet is to be clearly marked on the outside with the words "London Society's Prize," and the competitor's motto must be legibly written on the outside of the packet at the right-hand lower angle. The award will be made at the request of the London Society by a committee appointed by the Council of the R.I.B.A.

Alderman William Oulton, contractor, a former Lord Mayor of Liverpool, left estate of the gross value of £85,924, of which £81,783 is net personalty.

The foundation-stone of a new town hall for Burnham Market, North Norfolk, has just been laid. Mr. G. E. Mullard is the architect of the building, which will be constructed of brick and illumined by the electric light. The contractors are Messrs. A. M. Wright and Co., of Brancaster.

The equestrian statue of the late King Edward, which has been erected in the King Edward VII.-square, near the Opera House in Paris, was exposed to view for the first time on Sunday afternoon, in order that representatives of the Ministry of Fine Arts might pass judgment on it, and make arrangements for the coming unveiling ceremony.

The general purposes committee recommend the town council of Rochdale to advertise for tenders for carrying out the scheme of alterations at the town hall approved in the early summer. The cost is about £1,100, and the object is to provide better accommodation in the rate collecting department of the borough treasurer's office.

The Bishop of St. Asaph dedicated on Saturday the new church of St. Francis, Sandycroft, built in the parish of Hawarden, in memory of Mr. Frank Taylor, of Sandycroft, with its chapel of St. Ambrose, in memory of Canon Drew and his work there. It is built of brick and Runcorn stone, and is complete with the exception of the nave and aisle. The cost is about £3,000, a considerable portion of which is being borne by members of the Taylor family.

Affirming a decision pronounced by the Land Court, the First Division of the Scottish Court of Session, consisting of the Lord President, and Lords Johnston, Mackenzie, and Skerrington, held on Friday that a tenant of the Marquis of Breadalbane was a statutory small tenant under the Small Landholders Act. It was contended that as the tenant's rent was £50 1s. 10d., the 1s. 10d. being a proportion of insurance premium for the buildings, the holding did not fall within the scope of the Act.

Mr. F. E. Stanford, C.E., Local Government Board Inspector, held an inquiry at the Union-house, Spalding, on Friday into the application of the Spalding Rural District Council to borrow £2,470 for the water supply of Deeping St. Nicholas. It was explained that the council proposed to purchase the South Lincolnshire Fen Water Co.'s bore near Littleworth for £450, also to take over the Hop Pole bore sunk by private subscription, and to sink another bore on Deeping High Bank. The project also provided for laying water mains in the parish. There was no opposition to the scheme.

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"A SUPPLIANT"—ROYAL ACADEMY PRIZE AND SILVER MEDAL CARTOON OF "A DRAPED FIGURE."

By Miss HILDA MARION HECHLE.



WAREHOUSE, PENTONVILLE ROAD, N., FOR MESSRS. LILLEY AND SKINNER.—Mr. A. Sykes, F.R.I.B.A., Architect.

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NORMANDY STUDIES.

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RUE GEOFFREY, COUTANCES.

ROYAL COLLEGE OF ART SKETCH CLUB: CLUB PRIZE SET OF SKETCHES IN BLACK-AND-WHITE.—By Mr. W. M. KEESEY, A.R.C.A.





WAREHOUSE, STAMFORD STREET, S.E., FOR M



JOHN SAINSBURY.—Mr. A. Sykes, F.R.I.B.A., Architect.

PROFESSIONAL AND TRADE SOCIETIES.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.—The following are the problems in Design set by the Board of Architectural Education for the examinations.—The Final: Alternative Problems in Design.—1. The drawings, which should be on uniform sheets of paper of not more than Imperial size, must be sent to the Secretary of the Board of Architectural Education, Royal Institute of British Architects, 9, Conduit-street, W., on or before the dates specified below. 2. Each set of drawings must be signed by the author, and his name and address, and the name of the school, if any, in which the drawings have been prepared, must be attached thereto. 3. All designs, whether done in a school or not, must be accompanied by a declaration from the student that the design is his own work, and that the drawings have been wholly executed by him. In the preparation of the design the student may profit by advice. 4. Drawings for subjects (a) are to have the shadows projected at an angle of 45deg. in line, monochrome, or colour. Drawings in subjects (b) are to be finished as working drawings. Lettering on all drawings must be in a clear scholarly character. Subject XIII.: (a) A large Fireplace in the Main Reception Room of a Town Hall. Drawings required: Detail drawings to ½in. scale. Important details to 1in. scale. (b) A Single Span Footbridge over a Stream 40ft. wide, in any material that the candidate may select. Drawings required. Detail drawings to ½in. scale. Important details to 1in. scale. Subject XIV.: (a) Council Offices for a Small Town on an open Site. The cost of the building not to exceed £15,000. Drawings required: ⅛in. scale and ½in. (b) Completion of a Tower by a Lead Spire. The tower is 24ft. square outside measurement, 60ft. high to top of parapet. (Cornice and parapet not existing, but to be provided.) There is a newel staircase in the centre of one side of the tower. Drawings required: ½in. scale and ½in. Subject XV.: (a) A Museum (detached) in the Park of a Country Town. The cost of the building not to exceed £15,000. Drawings required: ⅛in. scale and ½in. (b) An Open Timber Roof to a School Hall, span 45ft. The hall is 80ft. long. One bay only to be shown. Drawings required: ½in., and important details to 1in. scale. Dates for submission of designs in 1914:—

	Subject XIII.	Subject XIV.	Subject XV.
United Kingdom	Feb. 28	April 20	June 30
Johannesburg	April 30	June 30	Aug. 31
Melbourne	May 30	July 31	Sept 30
Sydney	May 30	July 31	Sept 30
Toronto .. .	Mar. 31	May 30	July 31

THE CROSSES OF WEST CORNWALL.—A lecture on "The Antiquities and Topography of the Land's End District" was delivered before the Selborne Society at Burlington House on Friday evening by Mr. J. Harris Stone. The lecturer strongly pleaded for the preservation of stone crosses and other relics of the past, which had been neglected, and in many cases had become defaced and even buried under dirt and vegetation. He expressed deep regret at the destruction of the prehistoric remains of Cornwall and Dartmoor in the present day. Some crosses had even been built into pigsties, or used to make bridges across the stream. The clergy, who knew the value of the relics, were extremely anxious to preserve them, but they had not the money to do it, and he thought the work of preservation should be undertaken by the nation.

ANCIENT SCOTTISH BRIDGES.—Mr. Harry R. G. Inglis, F.S.A., Scotland, delivered a lecture the other night on "Ancient Bridges, Roman and Scottish," to the members of the Scottish Automobile Club. In England, he said, there were many names ending in "ford" at the crossings of rivers, and it was difficult to believe that many permanent bridges had ever been erected by the Romans, and north of the Northumbrian Wall the rivers seemed to have been crossed by paved fords. It was, therefore, doubtful if early Scottish bridge builders ever had a large arched stone bridge as a pattern to follow. Nothing was known of Scottish bridges till Perth Bridge was named in 1202 in one of the Inchaffray records. Other bridges were mentioned in the following sixty years; but the chaos at the death of Alexander III. ended all the fine work of the previous century, and it was not till 1427 that it began again. By the time of James IV. practically all the more important stone bridges had been completed. Most of the commercial pre-eminence of Glasgow was due to the enterprise shown by the citizens in undertaking or rebuilding the building of bridges.

LONDON MASTER BUILDERS' ASSOCIATION.—The ordinary meeting of the council was held at the offices of the association on Thursday, the 18th instant, when the president, Mr. Walter Lawrence, jun., occupied the chair. Since the last ordinary meeting on November 20 last, two special council meetings have been held for the purpose of considering what action should be taken to deal with the frequent occurrence of strikes in the building trade which have taken place during the past six months, and which were in distinct contravention of the rules quite recently entered into with the various trade societies. As a result of the deliberations, a special general meeting of the members of the association was held on Monday, the 15th instant, and was very fully attended, when a decisive course of action was decided upon. The council at its meeting on Thursday, recognising the urgency of the matter, resolved unanimously to request the attendance of representatives of the nine societies with whom working rule agreements exist to a conference to be held on Tuesday, the 23rd instant, whereat they will be asked to give the necessary guarantee required. The reports of the law and Parliamentary, finance, and special committees were adopted. The professional auditors were duly appointed to audit the accounts for the year ending December 31st. A number of new members were elected, and applications for ordinary membership were received and recommended to the next council for election.

THE PLANTING OF MOORLANDS.—At the annual meeting on Saturday of the Aberdeen Branch of the Royal Scottish Arboricultural Society—at which Mr. Irvine, of Drum, the president, occupied the chair—Sir John Stirling Maxwell, Bart., of Pollok, gave an address on the subject of "Planting of Moorlands." At the outset Sir John said that England now had a well-equipped forestry branch attached to its Board of Agriculture, with a staff of travelling inspectors. It had also five ordinary officers stationed in different districts. It had a large demonstration area in the Forest of Dean, with a school for forest apprentices. A great deal of valuable forestry information had been issued by the Publication Department of the Board of Agriculture. Proceeding to deal with the subject proper of his address, Sir John said that afforestation in Scotland would have to find its field very largely in the moorlands and rough pastures. There was first the effects of elevation on the growth of trees, and then there was the question of how to plant best in poor soils. No trees could hope to flourish on an exposed windy top; but, given reasonable shelter, and reasonably good soil, he thought it was not too much to say that elevation made extremely little difference in the growth of trees. When these two conditions were present the growth of trees appeared to be as good, or nearly so, at a high elevation as lower down. On the question of planting on poor soils, peat was the most puzzling thing they had to deal with, as there were so many qualities of it. One of the first things a Government Department devoted to forestry should do for them was to turn their experts to the work of classifying the various kinds of peat, this to be followed by a careful analysis of different samples of peat, in the hope that they might be able to arrive at some co-ordination of the evidence for future practical guidance.

SOCIETY OF ANTIQUARIES.—A meeting of the Society of Antiquaries was held at Burlington House on the 18th inst., under the presidency of Mr. Minet (treasurer). Mr. W. Dale, local secretary for Hampshire, exhibited a hoard of scrap bronze implements found in laying out a waterpress bed near Andover Junction; an iron axe-head from Clausentum, and a greenstone celt of foreign type from Braishfield. The bronze he showed consisted of rapiers and swords, pieces of large winged spearheads, ferrules, and portions of scabbards. The type was of the latest period of the Bronze Age in Britain. The weapons looked too good to have been broken up as old metal for casting. Mr. Reginald Smith thought the sword had hardly been used at all, and that the articles had been broken as if they were no longer serviceable for the purpose for which they were made. He considered that they belonged either to the Early Iron Age or the end of the Bronze Age, five or six centuries BC. Mr. Hilary Jenkinson described an original Exchequer account of 1304, with private tallies attached. Mr. H. Clifford Smith exhibited the foot of an English altar cross of latten, recently bought at Bristol, and compared it with the foot of a portable cross from Stoke Pogis church. The fact that it escaped the destruction of church ornaments under Edward VI. was probably due to the fact that the foot had a stem which allowed it to be used as a domestic candlestick.

THE THEATRES OF ATHENS.—In his closing lecture on Monday, at the Victoria and Albert Museum, Mr. Banister F. Fletcher, F.R.I.B.A., referred to the buildings which played their part in the social life of Ancient Athens. Theatres, Stadia, Agora, Propylæa, and Town Gates, all helped us to reconstruct the daily life of people who went in and out of the unfortified town gates, did their business, and gossiped in the arcaded agora, frequented theatres, attended foot-races in the stadia, or passed through the propylæa of massive columns to the temples. Through this portico all free-born Athenians must have passed for the religious Panathenaic festival. Greek theatres were not closed up and badly ventilated, but were open to the sky and air, and thus suited to a race that valued physical fitness above all earthly possessions. The lecturer described the typical theatre of Dionysus, hollowed out of the side of the Acropolis, and within the sacred enclosure of the Temple of Dionysus, to which it was connected by beautiful colonnades. There was also the great Stadion of Athens in a valley between two hills, which accommodated 40,000 spectators. Begun 331 B.C., it was finished by Herodes Atticus, and was now again restored for the revived Olympian Games.

YORK MASTER BUILDERS' ASSOCIATION.—The annual meeting of the York Master Builders' and Contractors' Association was held at headquarters, the Old George Hotel, on Thursday evening in last week. Councillor J. Hardgrave, J.P., presided. The secretary read the statement of accounts and balance-sheet, which were approved and adopted. The following were unanimously re-elected to office for 1914:—President, Councillor J. Hardgrave, J.P.; vice-president, Mr. C. Dent; treasurer, Mr. G. Turner; secretary, Mr. J. Hague; executive committee, Alderman W. H. Birch, J.P., Councillor G. Sharp, Messrs. R. Dent, J. Bellerby, W. J. Bellerby, T. Belt, T. F. Clark, H. Colman, J. Fairweather, H. Hopkins, H. Harrison, W. Mansfield, G. Rawling, A. J. Warrillow, R. Pearson, L. Wray, T. Shouksmith, W. Usher, and J. Hodsman; representatives on council of the Yorkshire Federation of Building Trades Employers, Councillor J. Hardgrave, J.P., Mr. C. Dent, and Mr. George Turner. The president, in his address, gave a résumé of the work of the local association, and that of the County Federation during the past year, and outlined the policy of the association in its future work.

The old town hall of Howden, East Riding, has been secured by the church officials and converted into a men's institute.

A library will be built at University College, Reading, by members of the Palmer family as a memorial to the late Right Hon. G. W. Palmer, a munificent benefactor to the college.

Correspondence.

INCREMENT VALUE DUTY.

To the Editor of the BUILDING NEWS.

SIR,—The Chancellor of the Exchequer has written to the Birmingham Chamber of Commerce stating that no Increment Value Duty is charged on buildings, fixed plant, or machinery, and that all the value attributable to these things is eliminated before any tax is levied.

For three years the Land Union has been engaged in trying to prevent the Commissioners of Inland Revenue from charging Increment Value Duty unless the value of the bare land, independently of buildings, etc., has risen in value. In the Plymouth, Richmond, and Palmer's Green test cases it was admitted on behalf of the Crown that the value of the land had not risen a penny, nevertheless Increment Value Duty was claimed.

Is it not mockery to suggest in these circumstances that houses are not being taxed, and that the value of the house is eliminated before duty is charged? Such a statement is calculated to mislead. It is an attempt to throw dust in the eyes of the business world, who realise that fixed plant and machinery are, within the meaning of the Act, in the same category as houses, and that if owners of houses are to be taxed when they sell their houses for more than the Commissioners think they are worth, it will soon be the turn of owners of machinery to suffer the same fate.—I am, etc.,

C. H. KENDERDINE, Secretary.

The Land Union, St. Stephen's House, Westminster, S.W.

The Willesden Urban District Council have appointed a committee to prepare a scheme for municipal workers' dwellings.

Mrs. Jane Saunders, widow of Mr. James Ebenezer Saunders, F.R.I.B.A., a well-known City architect, died on the 17th inst. at 9, Woodstock-road, Croydon, in her 84th year.

A complete sewerage scheme is about to be carried out through the town of Newcastle, County Down. The engineers are Messrs. Swiney and Crosdaile, of Avenue Chambers, Belfast.

Middlesex County Council have agreed to purchase Upper Edwards Hall farm, Essex, for the erection there of a sanatorium. The site contains nearly 99 acres, and the price is £40 an acre.

Mr. Arthur Walburgh Ward, deputy surveyor of Stockport, at a meeting of Shrewsbury Town Council on Friday, was appointed borough engineer and surveyor out of 275 applicants. The salary is £400 per annum

The preliminary stages of preparing the ground for the first portion of the new building for the Science Museum have now been completed, and an access has been formed from Exhibition-road to the main part of the existing building.

Mr. Ernest Edward Briggs, R.I., the well-known painter of salmon and trout river scenes, author of "Art and Angling in Scotland" and "Between Two Rivers," left estate of the gross value of £49,767, of which £43,140 is net personalty.

Birkenhead's scheme for incorporating Noctorum, Prenton, Storeton, Higher Bebington, Lower Bebington, and Bromborough, now within the jurisdiction of the Wirral Rural District Council, now appears likely to be carried through, all opposition having been withdrawn.

The restored cloisters of Chester Cathedral and a rood erected on the choir-screen were dedicated on Saturday. The work of the cloisters has been carried out under the direction of Mr. G. Gilbert Scott by Messrs. J. Thompson and Sons, Peterborough. The rood is the gift of the Rev. Wilfrid J. Stanton, of Thelwall Hall, Warrington. The architect and builders are now engaged in restoring the ancient refectory. When the organ was rebuilt four years ago, the choir portion, which stood upon the screen, was removed from that position, and the space was left in a very unfinished state. This space has now been filled by a representation of the crucified figure of Our Lord, and the attendant figures of St. Mary and St. John, carved in white Austrian oak.

LEGAL INTELLIGENCE.

LIABILITY FOR DEFECTIVE SEWER-GRATING.—Papworth v. Battersea Borough Council.—In this action, heard in the King's Bench Division on Monday and Tuesday in last week, before Mr. Justice Horridge and a common jury, Miss Papworth claimed damages for injuries sustained by a fall from a bicycle, alleged to be caused by a broken sewer-grating in Lombard-road, Battersea. Judgment was delivered by his lordship on Saturday. For the defence, Mr. Campbell, K.C., had raised the point that the gully in question was constructed by the defendants' predecessors in title, the Wandsworth District Board of Works, and any liability for damage due to original faulty construction was not transferred to the Battersea Borough Council by the Local Government Act of 1899. His Lordship held that such liability was never transferred from the Wandsworth District Board. As to whether or not the defendants were liable for not having remedied the defect in the gully, his Lordship held, on the authority of McClelland v. Manchester Corporation, Meek v. Whitechapel Board of Works, White v. Hindley Local Board of Health, and Blackmore v. Vestry of Mile-end, that the defendants were liable as sewer authority for not seeing that the inequality caused owing to their gully being so much below the roadway was remedied, and the jury having found against the defendants on this question, the plaintiff was entitled to judgment upon it. His Lordship did not think the defendants would be liable in their capacity as highway authority for this. As the jury had found that the gully was broken at the time of the accident, and that such breakage contributed to the accident, and was not repaired owing to the negligence of the defendants in both capacities, the defendants were liable as sewer authority in respect of this cause of action, though not in their capacity as road authority. For these reasons he gave judgment for the plaintiff for £1,961, with costs. A stay was granted on terms.

BUILDERS' LIABILITY FOR QUANTITY SURVEYORS' FEES. — At the Manchester County-court on Dec. 16th and 17th, Judge Mellor, K.C., heard an action in which Mr. Charles Swain, architect and surveyor, of Exchange-street, Manchester, sued Messrs. J. Parkinson and Sons (Blackpool), Limited, contractors, of the Talbot Sawmills, Blackpool, for £74 as fees due to him for work done in connection with the foundations of the New Queen's Theatre, in Great Bridgewater-street, Manchester. Mr. Lustgarten was solicitor for the plaintiff, and Dr. Atkinson, K.C., and Mr. Wharton counsel for the defendants. Mr. Lustgarten said that in 1911 a number of people, including Mr. Richard Flanagan, the theatre manager, desired to erect a theatre in Manchester at a cost of about £20,000, and the plaintiff was engaged, as architect, to prepare the necessary plans and specifications. It was intended to form a limited company to carry out the venture, and he believed that that company was formed, but at the material date in this case the several persons interested had themselves started the erection of the building, and they let to the defendants the contract for the building of the foundations in Great Bridgewater-street. The scheme did not get beyond the building of those foundations, and litigation followed. In connection with the contract for the foundations, the first document was a schedule of prices amounting to £2,630, and this included £66 14s., being 2½ per cent. for surveyor's fees. This raised a question of custom of the trade. In the absence of an express contract to the contrary, the charge for the surveyor's fees was to be included in the first certificate which the contractor obtained and was then paid by the contractor. It might be said that the plaintiff had received certain payments from Mr. Flanagan and Mr. Ryder Boys. That was true, but not in respect of the work now claimed for. The plaintiff, in evidence, said the builder was liable for these fees in every case, whether he himself was paid or not. Cross-examined, he denied that Mr. Flanagan and Mr. Ryder Boys had paid him anything in respect of quantities. Henry Green, a member of the Association of Contractors, with forty years' experience, stated that the custom of the trade was for the contractor to pay for the bills of quantities out of his first cash payment, and the contractor was liable to the architect, whether he himself was paid or not. Similar evidence was given by Frank Hewitt, a member of the Council of the Quantity Surveyors' Association, and William Tinker, a member of the Federation of Builders. Dr. Atkinson said it was admitted in this case that the first payment of £400 was made to the defendants before the plaintiff made out his certificate. It was entirely in respect of work done by the defendants for the promoters of the scheme, and did not include the architect's fees. The custom of the trade had been embodied in the rules of the Royal Institute, and these provided that the surveying fees were only paid out of the first payment to the contractor when they were specifically included in the certificate on which payment was made. In this case there was no contractual liability on the part of the contractors. Contractors were only liable to pay over to the architect moneys which they themselves received for that purpose. The £33 payment was only a matter of grace. The architect was engaged by the owners of the building, and not by the contractors. Moreover, the defence was that the plaintiff had already received from Mr. Ryder Boys, Mr. Alexander Summers, and Mr. Richard Flanagan £140 for services which they said included the quantities for which he was now suing. Confirmative evidence was given by Mr. Parkinson, Mr. Ryder Boys, and Mr. Richard Flanagan. The Judge, after hearing further legal arguments, gave judgment for the defendants, with costs.

The city council of Newcastle-on-Tyne are about to extend their hospital at Walkgate for the reception of cases of tuberculosis. Pavilions for sixty beds, a laundry, and dispensary are to be provided, at an estimated outlay of £12,825.

Count Plunkett has been elected a member of the Société Archèologique de France, and a Fellow of Det Kongelige Nordiske Oldskrift-selskab (the Royal Society of Northern Antiquaries) of Copenhagen.

The urban district council of Downham Market, West Norfolk, have adopted plans and a scheme for the sewerage and sewage disposal of the town, prepared by Messrs. Elliott and Brown. The estimated outlay is between £5,000 and £6,000.

Mr. Webb, the consulting engineer to the Egyptian Government, Mr. Macdonald, the Under-Secretary for Public Works, Mr. P. M. Tottenham, the Inspector-General of Irrigation in the Sudan, and Mr. McClure are to meet Lord Kitchener at Khartoum early in January to study projects for constructing irrigation works on the White Nile and the Blue Nile. In all likelihood a dam on the White Nile will be taken in hand first.

At Friday's meeting of the urban district council of Llandridson, a letter was read from the general manager of the Light Railway Company asking that the double tracking of the line, which has already been sanctioned, along Mostyn-avenue and Moston-broadway to the North-Western Hotel should be extended as far as St. John's Chapel. The council decided to agree to the proposal on certain conditions. If the proposal of the company is carried out, the track will then be doubled from Rhos-on-Sea to the centre of Llandudno

The Lord Mayor and Sheriffs will attend in State on Wednesday, February 18, the dedication of the new porch of St. Alphege, London Wall. A church has existed on the site since the early years of the eleventh century. The original church was taken down in the 16th Century on account of its dilapidation, and the Priory Church of Elsynge Spital, which was opposite, and had been built in 1327, became the parish church of St. Alphege. This priory church escaped the Great Fire of 1666; but, in 1777 the nave was rebuilt. The tower, arches, and inner porch still remain. The new porch in Portland stone harmonises with the ancient church, and its lower part is a replica of the inner porch, which, happily, is still well preserved.

At the meeting of Rhins District Committee of Wigtownshire County Council, held on Friday in the County Buildings, Stranraer, Mr. W. K. Gibson, the district road surveyor, in his report on the upkeep of the main roads, stated that in three years the self-propelled traffic had increased 97 per cent., and unless something substantial were done, to maintain the roads, the expenditure in future years would be serious. He had submitted to the Road Board a comprehensive scheme to reconstruct and tar macadam the whole of the roads which were subjected to heavy motor traffic, the extent of which is fifty miles. The total estimated cost of the work is £25,000. Towards this expenditure he had asked the Board for a grant of £12,500 and the balance on loan, and undertook to carry through the scheme in about three years. He had since interviewed Sir George Gibb, chairman of the Road Board, who stated that the Board were satisfied with the scheme, and intimated that they would give a grant of £8,500, and a loan of £16,500, free of interest, repayable in eight years. The scheme was approved, and it was agreed to accept the offer of the Road Board, and to proceed with the work as soon as possible.

WATER SUPPLY AND SANITARY MATTERS.

A TROUBLESOME EAST LOTHIAN WATER SCHEME.—A meeting of the East Lothian County Council was held on the 17th inst. in Haddington Sir Archibald Buchan-Hepburn, Bart., of Smeaton-Hepburn, presided. A report as to Stobshiel Waterworks, and the serious leakage of water which has developed below the newly-constructed reservoir of the supply, was submitted from Messrs. Carter and Wilson, C.E., Edinburgh, engineers for the scheme. The report stated that the discharge from the bank below the dam now amounted to about 265,000 gallons per day. This discharge had been increasing as the depth of water in the reservoir increased. The engineers recommend the construction of a concrete tank for utilising the water from the leak below the dam, both for compensation and supply. Considerable discussion took place with reference to the serious nature of this leak. A theory is that it does not proceed from the reservoir itself, but from the pressure as the reservoir fills, sending water along some old buried water-course beneath the reservoir. The original estimated cost of the scheme was about £30,000. The actual cost now approaches between £50,000 and £60,000. It was agreed to hold a committee meeting with the engineers to consider the position of matters.

The Great Yarmouth Harbour Commissioners will promote next session a Bill to authorise the construction of a new bridge at the Haven, and to provide tramways upon it and its approaches.

A new organ in Jesmond Church, Newcastle-on-Tyne, was dedicated on Sunday week. It is one of the largest instruments in the city, and has been built by Mr. J. J. Binns, of Leeds.

Mr. Harold Parsons, R.A., distributed at the Clapham School of Art on Friday evening the awards gained by students of the school. He stated that the year had been a record one for the institution. In the Board of Education National Competition one student, Noel L. Nisbet, gained two gold medals and the Princess of Wales Scholarship, value £25. Another student, Alice Lilian Hitchcock, who obtained the distinction last year, received a second scholarship. Four silver and seven bronze medals and four book prizes were also gained.

At a meeting of the parishioners of West Clandon, Surrey, held under the presidency of Earl Onslow, instructions have been given to Mr. W. D. Caröe, F.S.A., to prepare two plans for a spire, one as it was originally and the other as it was at the time of the recent fire. It was also decided that the six bells and clock, which were destroyed by fire, should be replaced and the damage to the organ repaired. Earl Onslow intimated to the meeting that his mother, sisters, brother, and himself were desirous of providing a memorial of the late Lord Onslow, and would like to do something which would improve the beauty of West Clandon Church and increase its accommodation.

The Vale of Bagdad has inaugurated the Hindieh barrage. The water, being successfully diverted into the old Euphrates Channel, has passed by Babylon. The inauguration of the Hindieh dam marks the completion of one of the most important of the constituent parts of the scheme for the irrigation of Mesopotamia, framed by Sir W. Willcocks early in 1911. The contract for the work was allotted to Sir John Jackson, Ltd. Sir W. Willcocks proposed an initial expenditure on the Euphrates of £1,034,000. The works to be erected afterwards would have cost £822,000 on the Euphrates and £710,000 on the Tigris. A further expenditure of £1,532,700 would have followed.

Consequent upon the application of the corporation of Hemel Hempstead for leave to borrow £6,100 under Part III. of the Housing of the Working Classes Act, for the purchase of land and for the erection of working-class dwellings, Mr. E. Leonard (Local Government Board inspector) held an inquiry at the Hemel Hempstead Town Hall. The town clerk stated that the council had provisionally accepted plans for the buildings, and a provisional agreement had been entered into for the purchase of six acres and three roods for the sum of £700. Dr. Gruggen, medical officer of health, stated that at the present time there were half-a-dozen houses in the borough unfit for habitation, but the council was loth to condemn the houses owing to the lack of suitable accommodation. The sanitary inspector, Mr. S. S. Ranson, said that in 275 cottages he had inspected since December, 1910, he had found 38 cases of overcrowding. The architect (Mr. Deacon, of Luton) said 26 cottages would be erected, and the estimated cost of building was £4,683.

Our Office Table.

The Trustees of the British Museum recently purchased at a sale at Messrs. Sotheby's a pen and sepia drawing, washed with Indian ink, by James Gibbs, of the column in honour of Queen Anne, which he designed for erection in the Strand, 80ft. from the west front of St. Mary-le-Strand Church. Gibbs, in his "Book of Architecture," 1728, says that his design for the Column was approved by the Commissioners and a great quantity of stone was brought to the place for laying the foundation of it; but owing to the death of Queen Anne the scheme was abandoned, and the present tower was built at the west end of the church. The column was to have been surmounted by a colossal statue of the Queen. The trustees have also bought some sketches by Sir James Thornhill for his frescoes in the dome of St. Paul's Cathedral, illustrating scenes in the life of St. Paul.

Excavations at the Roman site of Lowbury, on the Berkshire Downs, four miles west of Goring, have been made by Mr. D. Atkinson, on behalf of University College, Reading. No trace of internal structures was discovered in the first mound opened out, but the quantity of broken roofing-tiles found makes it certain that such structures once existed. Seventy-two coins, six fibulæ, a bronze signet ring, an iron dagger and spear-head, numerous fragments of bronze and iron of uncertain use, several pieces of decorated and plain Samian ware, and large quantities of fragments of coarse pottery were found on the site. The coins afford evidence of an occupation beginning in the second century and lasting at least as long as the reign of Gratian (367-383). One of the burrows on the site consisted of earth filled with objects of Roman date. Sixty-four coins, some fragments of bronze, small iron boot nails, and Roman pottery were found in all parts down to the natural soil. An undisturbed Saxon interment, containing a skeleton, was opened out. On the right side lay the fragments of a bronze bowl decorated with enamelled discs of a type provisionally dated to the 6th or 7th century A.D., and a bone comb in a leather-covered wooden case. An iron sword 3ft. 1in. in length lay on the breast with the point towards the feet. On the left side was an iron spear-head, and an iron ring with a tinned bronze stud found behind the left knee had perhaps decorated the shaft.

The Bill which Walsall Corporation are promoting in the next Session of Parliament was issued on Saturday. The chief objects are to vest the corporation with powers to make a new street to improve the approach to the town from Birmingham road, to widen Green-lane to extend the borough tramways system to Cannock, Brownhills, and Pelsall, by the provision of trackless trams, to provide and run motor omnibuses on various tram routes, and also to West Bromwich; and also to confer on the corporation additional powers in regard to the gas and electricity undertakings. The Bill also seeks to obtain for the town council special borrowing powers to raise the money required for the various purposes enumerated.

The formal town's meeting at Bristol to consider the question of promoting the Bristol Corporation (Various Powers) Bill and the Bristol Corporation (Tramways) Bill is fixed for Monday week, Jan. 7. The Various Powers Bill proposes, among other matters, to give authority to the corporation to spend money not exceeding one-eighth of a penny in the pound in advertising the city; to enlarge the Avonview and Greenbank Cemeteries; to construct a new road from Blackswarth-road to Beaufort-road, St. George; to borrow money for the construction and equipment of tobacco warehouses, and for the construction of deep-water berths in the Floating Harbour; to provide further granary accommodation at the Royal Edward Dock; and to provide additional storage accommodation at Avonmouth. The Tramways Bill seeks powers for the corporation to purchase by agreement the tramways in the city from the present company, and to work the same, running powers over the other tramways being also applied for.

The fifth part of the local taxation returns for 1911-12 was issued on Saturday as a Blue-book. The accounts of councils of boroughs other than Metropolitan boroughs and urban district councils other than town councils are given in detail in the volume. It also states that the amount paid to the 75 county borough councils of England and Wales in Exchequer contributions amounted to £1,850,824, and the expenditure on the same account was £1,875,712. The revenue from borough, district, and other rates amounted to £16,118,117. The county borough councils maintained 9,507 miles of public roads and streets at a cost during the year of £1,297,194, an average of £136 per mile. The non-county boroughs maintain 1,242 miles at a cost of £284,957, being at the rate of £229 per mile, and of roads, other than main roads, 4,932 miles at an expenditure of £537,346, an average of £109 per mile. The average cost per mile of the maintenance and repair of public roads and streets was:—County boroughs, £132; non-county boroughs—main roads £108, other roads £48.

The Berlin correspondent of the *Times* states that the Rhenish-Westphalian Cement Syndicate, which was founded in 1904 and was due to expire at the end of this year, has been practically renewed for another period of 12 years. Two small firms which have been concerned in the negotiations still stand aside, but the formation of the syndicate is thought to be certain. It embraces at present 35 firms, and with its various connections represents the whole of the West German cement industry. The 1904 syndicate prospered greatly in the days of the building boom, but latterly it has suffered from the competition of outsiders in Germany, the unsatisfactory distribution of quotas, depression in the building trade, and competition of Belgian firms.

The Westminster City Council have decided to effect a widening of Wardour-street at its junction with Old Compton-street. The cost of the improvement is estimated at £20,000.

At the Roman Catholic Church of the English Martyrs, Alexandra Park, Manchester, a stained glass window was unveiled on Sunday over the sanctuary, representing the sacrifice of Melchisedec.

The Local Government Board have sanctioned a further loan of £16,475 for the erection of 76 houses at Normanton, to let at 6s. a week, under the Housing of the Working Classes Act. A loan of £7,700 has already been granted for 38 houses, which have been inhabited about two years.

The foundation-stones of the Lyon Memorial Hall at Hodnet, near Market Drayton, were laid on the 12th inst. The hall is being erected from plans prepared by Mr. C. E. Davenport, A.M.I.C.E., of Nantwich, and the work is being carried out by a Willaston firm. The cost will be about £1,000.

The following officers have been elected by the Oregon Chapter of the American Institute of Architects for the coming year:—Morris H. Whitehouse, president; Albert E. Doyle, vice-president; Ellis F. Lawrence, secretary; Folger Johnson, treasurer; Edgar M. Lazarus and Frank Logan, trustees.

At a Local Government Board inquiry held at the Council House, Birmingham, on Friday, the corporation sought powers to have the scale of charges for water used for domestic purposes within the city water limits varied from time to time. It was stated that within the next five or six years it would be necessary to lay another pipe to augment the supply from Wales. There would have to be larger water charges than those at present in force

A new branch of the Bank of Ireland has been built at the corner of St. Stephen's Green in Merrion-row, Dublin, from plans by Mr. C. H. Ashworth. The building is three stories in height and Georgian in style; the facades are of Ballyknocken granite on the ground floor, and Kingscourt bricks, with granite dressings, for the first and second floors. Messrs. G. and T. Crampton, of Ballsbridge, near Dublin, are the builders, and Mr. J. McClellan was the clerk of works.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY.—Royal Institute of British Architects. Informal Meeting of Associates to discuss the Council's proposals as to Registration. Great Gallery, 9, Conduit-street, W. 7.30 p.m.

A memorial tablet to Andrew Lang, designed by Sir William B. Richmond, R.A., has been placed on the wall of the University Chapel, St. Andrews.

The council of the Surveyors' Institution have accepted an invitation to hold the next annual provincial meeting at York on May 22 and 23 next year.

Lady Bancroft on Saturday laid the foundation-stone of the new theatre to be erected in Gower-street in connection with the Academy of Dramatic Art.

The Thurrock, Grays, and Tilbury Joint Sewerage Board have approved a scheme prepared by Mr. G. Midgley Taylor, the cost of which is estimated at £90,000.

The Bishop of Llandaff rededicated on Tuesday the peal of ten bells at St. Woolos Parish Church, Newport, which is the second complete peal in the diocese of Llandaff. The original bells were hung in 1769.

The Local Government Board have given authority for the preparation of two further town-planning schemes under the Housing and Town-Planning Act, 1909. The schemes are authorised to be prepared by the town council of Bridlington and the urban district council of Newton-in-Makerfield, and will deal with areas of 2,730 acres and 2,518 acres respectively.

A brass which was fixed in Ruislip parish church, Middlesex, in 1808, has been discovered in the hands of a dealer in West London. The brass represents a man, his wife, six sons, and six daughters. It was originally in the south aisle, and the stone to which it was attached is still in the vestry. The dealer bought the brass for £24, and a concert was recently held at Ruislip to raise funds for buying it back.

Out of forty-two applicants for the position of surveyor for the roads in their district, the St. Asaph Rural District Council has appointed Mr. William Jones, Dyserth. The salary is only £70 a year, and the officer pays his own travelling expenses. It is stated that there is the possibility of the salary being increased at a future date when another portion of the district now looked after by another man is added to Mr. Jones's area.

The Commissioners of the Middlesex Edward VII. Memorial have decided to build a children's seaside hostel on a site at Herne Bay. Preliminary plans are being prepared for the erection of a building for the purposes of a summer home for children. The accommodation will comprise a refectory, dormitories containing 50 beds, with facilities for considerable expansion in the month of August (on a modified "open-air system"), besides offices and rooms for the staff, all on the ground floor, in an open situation within a few minutes of the sea and railway-station.

Mr. A. J. B. Wace, M.A., Lecturer in Ancient History and Archæology, at the University of St. Andrews, N.B., has been appointed to the directorship of the British School of Archæology at Athens. Mr. Wace has intimated to the University Council of St. Andrews that it will be part of his duties as director of the School at Athens, to give, at Oxford and Cambridge, in October each year, a lecture on the latest excavations by the School in Greece, and he hoped the Court would allow him to give an annual lecture at St. Andrews as well, so that his connection with the University should not be altogether broken. The offer has been accepted with thanks.

The *Times* states Lord Salisbury is at present erecting on the Hatfield estate a pair of cottages, at a cost of £130 apiece, from a design by Mr. Arnold Mitchell, who has endeavoured to meet the objections raised to the plan for his £110 cottage at Great Baddow. Like the latter cottage, it contains five rooms, three of which are bedrooms; but it is larger and better finished. The designer also claims for it that, as it complies with the model rural housing by-laws of the Local Government Board, it will, presumably, also satisfy the by-laws of even the most exacting local authority, and that it fully conforms to the schedule of accommodation for rural labourers' cottages set out in the recent report of the Departmental Committee of the Local Government Board. Lord Salisbury stipulated that the cottages should be built by the local builder, a condition which is being complied with. Hitherto no cottage has been built on the Hatfield estate for less than £200.

TRADE NOTES.

Messrs. Hapgoods, Ltd., the well-known employment experts, are adding a new feature to their organisation in a department for business appointments for women. They hope that this departure will be attended with a measure of success fully equal to that which has characterised their efforts in connection with the existing scope of their operations.

Under the direction of Messrs. Halley and Neal, architects, Glasgow, the "Boyle" system of ventilation (natural), embracing Boyle's latest patent "air-pump" ventilators and air inlets, has been applied to the Picture Theatre, Parkhead, Glasgow.

The Weir Hospital, Balham, is being supplied with Shorland's warm-air ventilating patent Manchester stoves with descending smoke-flues by Messrs. E. H. Shorland and Brother, Ltd., of Failsworth, Manchester.

The Scarborough Corporation, in view of the recent irregularities in the sanitary department, have decided to amalgamate the two yards, the highways department and the sanitary department, under one superintendent, working under the borough engineer. The salary of the superintendent is to begin at £150.

Foundation-stones of a reading-room were laid at Catton Allendale on Saturday. The premises are rectangular on plan, and built of stone; the chief room is 45ft. long by 21ft. wide. Mr. G. Newman is the contractor for the stonework; Messrs. Reed and Robson for woodwork, and Mr. J. F. Shield Keenly is architect.

A school-chapel, built by the English Baptist Church at Colwyn Bay, was opened on Sunday for public worship at the corner of Hawarden-road and Prince's-drive. It supersedes a temporary place in Abergele-road, and is of stone with a red-tiled roof. It has accommodation for 250 worshippers, and has been built from plans by Mr. S. C. Foulkes.

There has been unveiled in the little church of Whitsome, Berwickshire, a baptismal font, the gift of Lady Low, of Berrywell, Duns, in memory of her husband, Alexander, Lord Low, of Laws, who for 29 years was an elder in this country congregation. The font, which is of Northumbrian stone, is of simple design, the architect for the work being Sir Robert Lorimer, Edinburgh.

The Governors of St. George's Hospital decided on Friday to adopt a site near Wandsworth Bridge for the new hospital. An option on the site had been secured by payment of £225, and the cost will not exceed £27,000. The court also decided to abandon next session the joint Bill with respect to the amalgamation of the hospital with Westminster Hospital, and to proceed with the Bill on behalf of St. George's Hospital alone.

Mr. H. R. Hooper, M.Inst.C.E., Inspector of the Local Government Board, has held an inquiry at the Miners' Hall, Bolton Colliery, into the application of the South Shields Rural District Council to borrow £2,000 for works of sewage in the parish of Boldon. The council, it was stated, proposed to lay down a new main sewer, 1,495ft. in length, it being intended to take the sewage south and east at Boldon Colliery, and divert it to the Newton south sewer.

An application has been made by the Sunderland Rural District Council at a Local Government Board inquiry, conducted at Sunderland by Mr. J. R. Hutchinson, M.D., inspector, for sanction to borrow sums amounting to £3,030 to meet excess expenditure incurred in connection with the extension of their infectious diseases hospital at Hylton-road, Sunderland. Mr. Brown, of Sunderland, the architect, explained a very phenomenal rise took place at the time the hospital was in progress, and under some heads it was 100 per cent.

There was a long discussion at the last meeting of Kidderminster Town Council on the question of the sewage-farm. A letter was read from the Local Government Board, stating that they had further considered the application of the council to borrow £13,500 for the purchase of additional land for the purposes of sewage-disposal. Having regard to a report by Messrs. Willcox and Raikes, engineers, the Board would be prepared to sanction the application on the understanding that the council would endeavour to resell as soon as possible such portion of the land as was not intended to be used for sewage-disposal purposes. It was eventually decided to instruct the finance committee to arrange with Messrs. Willcox and Raikes for completing the sewering of the areas recently added to the borough, and for the extension of the farm.

LATEST PRICES.

IRON.

Steel Joists, Belgian and German (ex steamer, London)	per ton	£6	2	6	to	£6	5	0
Steel Joists, English		7	10	0	,,	7	12	6
Wrought-Iron Girder Plates		7	0	0	,,	7	5	0
Steel Girder Plates		7	2	6	,,	8	2	6
Bar Iron, good Staffs		6	5	0	,,	8	10	0
Do., Lowmoor, Flat, Round, or Square		20	0	0	,,	0	0	0
Do., Welsh		5	15	0	,,	5	17	0
Boiler Plates, Iron—								
South Staffs		8	0	0	,,	8	15	0
Best Snedshill		9	0	0	,,	9	10	0

Angles 10s., Tees 20s. per ton extra.

Builders' Hoop Iron, for bonding, &c., £8 15s to £9.
Ditto galvanised, £14 to £15 10s. per ton.

Galvanised Corrugated Sheet Iron—	No. 18 to 20.	No. 22 to 24
6ft. to 8ft. long, inclusive gauge	Per ton. £13 0 0	Per ton. £13 10 0
Best ditto	13 0 0	14 0 0

Wire Nails (Points de Paris)—

3 to 7	8	9	10	11	12	13	14	15	B.W.G
8/3	8 9	9/3	9/9	10/3	11/-	11/9	12/6	13/6	per cwt

	Per ton.				Per ton.		
Cast-Iron Columns	£7	10	0	to	£9	0	0
Cast-Iron Stanchions	7	10	0	,,	9	0	0
Rolled-Iron Fencing Wire	8	5	0	,,	8	10	0
Rolled-Steel Fencing Wire	7	5	0	,,	7	10	0
,, ,, ,, Galvanised	8	15	0	,,	9	5	0
Cast-Iron Sash Weights	5	0	0	,,	5	5	0
Cut Floor Brads	9	15	0	,,	—		
Corrugated Iron, 24 gauge	16	0	0	,,	—		
Galvanised Wire Strand, 7 ply, 14 B.W.G.	14	5	0	,,	—		

B.B. Drawn Telegraph Wire, Galvanised—

0 to 8	9	10	11	12	B.W.G.
£10 10s.	£10 15s.	£11 0s.	£11 5s.	£11 15s.	per ton.

Cast-Iron Socket Pipes—							
3in. diameter	£6	2	6	to	£6	7	0
4in. to 6in.	6	0	0	,,	6	5	0
7in. to 24in. (all sizes)	5	7	6	,,	6	0	0

[Coated with composition, 5s. 0d. per ton extra, turned and bored joints, 5s. 0d. per ton extra.]

Pig Iron—	Per ton.		
Cold Blast, Lilleshall	110s. 0d.	to	117s. 6d.
Hot Blast, ditto	70s. 0d.	,,	75s. 0d

Wrought-Iron Tubes and Fittings—Discount off Standard Lists f.o.b. (plus 2½ per cent.)—	
Gas-Tubes	75 p.c.
Water-Tubes	72½ ,,
Steam-Tubes	67½ ,,
Galvanised Gas-Tubes	65 ,,
Galvanised Water-Tubes	62½ ,,
Galvanised Steam-Tubes	57½ ,,

OTHER METALS.

Spelter, Silesian.....Per ton	£20	5	0	to	£21	7	6
Lead Water Pipe, Town	21	10	0	,,	—		
,, ,, ,, Country	22	5	0	,,	—		
Lead Barrel Pipe, Town	22	10	0	,,	—		
,, ,, ,, Country	23	5	0	,,	—		
Lead Pipe, Tinned inside, Town	23	10	0	,,	—		
,, ,, ,, ,, Country	24	5	0	,,	—		
Lead Pipe, Tinned inside and outside .....Town	26	0	0	,,	—		
,, ,, ,, ,, Country	26	15	0	,,	—		
Composition Gas-Pipe, Town	24	10	0	,,	—		
,, ,, Country	25	5	0	,,	—		
Lead Soil-pipe (up to 4½in.) Town	24	10	0	,,	—		
,, ,, ,, Country	25	5	0	,,	—		
[Over 4½in. £1 per ton extra.]							
Lead Shot, in 28lb. bags	24	15	0	,,	—		
Copper Sheets, sheathing & rods	82	0	0	,,	82	10	0
Copper, British Cake and Ingot	78	10	0	,,	79	0	0
Tin, English Ingots	174	10	0	,,	175	0	0
Do., Bars	174	10	0	,,	175	0	0
Pig Lead, in 1cwt. pigs (Town)	19	0	0	,,	—		
Sheet Lead, Town	21	0	0	,,	—		
,, ,, Country	21	15	0	,,	—		
Genuine White Lead	29	15	0	,,	—		
Refined Red Lead	24	0	0	,,	—		
Sheet Zinc	29	0	0	,,	—		
Old Lead, against account	16	10	0	,,	—		
Tin .....per cwt.	10	0	0	,,	—		
Cut nails (per cwt. basis, ordinary brand	0	11	3	,,	—		

TIMBER.

CONSTRUCTIONAL.

Yellow Pine Deals, Quebec, per standard:— 1st quality	£38	0	0	to	£45	0	0
,, ,, ,, 2nd ,,	26	0	0	,,	32	0	0
,, ,, ,, 3rd ,,	16	0	0	,,	18	10	0
Spruce Deals: St. Johns	10	0	0	,,	11	10	0
,, ,, Miramichi	9	10	0	,,	10	10	0
,, Boards: Swag	11	0	0	,,	12	0	0
Red Deals: rchangel 1st quality	21	0	0	,,	24	0	0
,, ,, ,, 2nd ,,	16	0	0	,,	19	0	0
,, ,, ,, 3rd ,,	12	0	0	,,	14	0	0
,, ,, St. Petersburg—							
,, ,, ,, 1st quality	16	10	0	,,	18	0	0
,, ,, ,, 2nd ,,	14	10	0	,,	15	10	0
,, ,, Wyburg & Uleaborg	12	10	0	,,	15	0	0
Gefle, Gothenburg, and Stockholm	12	10	0	,,	17	0	0
White Deals: Crown	14	0	0	,,	15	10	0
,, Seconds	11	10	0	,,	13	0	0
Flooring: White and Planed—							
1st and 2nd quality mixed	10	15	0	,,	11	15	0
1st, 2nd, & 3rd quality mixed	10	5	0	,,	11	0	0
Red Planed, 1st quality	14	10	0	,,	17	0	0
Pitch Pine: Prime Deals and Boards	18	0	0	,,	23	0	0
Lignum Vitæ .....Per ton	7	0	0	,,	14	0	0

	Per cubic foot.						
Yellow Pine Logs (waney board)	0	5	0	,,	0	5	6
Pitch Pine Logs	0	2	0	,,	0	2	6
Birch: Quebec Logs	0	2	3	,,	0	2	9
Oak: Austrian Wainscot	0	7	0	,,			0
Mahogany · Gaboon	0	2	0	.	0	2	3

FURNITURE AND HARDWOODS.

Teak: Burmese, per load, 50ft.	£20	0	0	to	£25	0	0
Teak: Java, per load, 50ft.	16	0	0	,,	21	0	0
	Per cubic foot.						
Oak Planks: U.S.A., Imported	0	1	9	to	0	2	6
,, Boards ,, ,, Prm.	0	3	0	,,	0	3	6
,, ,, ,, ,, Mdm.	0	3	6	,,	0	3	9
Sequoia (Californian Redwood)	0	2	4	,,	0	3	6
Birch: Quebec logs	0	2	3	,,	0	2	9
,, ,, sawn planks	0	1	3	,,	0	2	0
Oak: Austrian Wainscot	0	7	0	,,	0	8	0
Walnut: Prime boards and planks	0	6	0	,,	0	6	6
Walnut: Mdm. ,, ,,	0	3	6	,,	0	4	6
Greenheart: Hewn logs	0	3	3	,,	0	4	0
Cedar: Cigar box	0	4	9	,,	0	5	6
Satin Walnut: Imp. sawn boards, prime	0	2	4	,,	0	2	9
Orham: Imp. sawn boards, prime	0	2	0	,,	0	2	3
Mahogany: St. Domingo, Cuba, and Honduras	0	6	0	,,	0	9	0
,, African, Assinee, &c.	0	5	0	,,	0	6	6
,, Lagos and Benin	0	4	6	,,	0	6	0
,, Sekondi and Cape Lopez	0	3	0	,,	0	4	0
,, Gaboon	0	2	0	,,	0	2	0
Satinwood: West Indian	0	10	0	,,	0	14	0
Rosewood Per ton	8	0	0	,,	12	0	3
Lignum Vitæ ,,	7	0	0	,,	14	0	0

STONE.*

Red Mansfield, in blocks per foot cube	£0	2	4
Darley Dale, ditto ,,	0	2	3
Red Corsehill, ditto ,,	0	2	2
Closeburn Red Freestone, ditto ,,	0	2	0
Ancaster, ditto ,,	0	1	10
Greenshill, ditto ,,	0	1	10
Chilmark, ditto (in truck at Nine Elms) ,,	0	1	10½
Hard York, ditto ,,	0	2	0
Ditto ditto 6in. sawn both sides, landings, random sizes per foot sup.	0	2	8
Ditto ditto 3in. slab sawn two sides, random sizes ,,	0	1	3

* All F.O.R. London.

Bath Stone, delivered on road waggons, Paddington Depot per foot cube	0	1	7½
Ditto, ditto, Nine Elms Depot ,,	0	1	9½
Beer Stone, delivered on rail at Seaton Station ,,	0	1	0
Ditto, delivered at Nine Elms Station ,,	0	1	6½

Portland Stone, in random blocks of 20ft. average :—

	Brown Whit Bed.	Base Bed	White Bed.
	Per foot cube.		
Delivered on road waggons at Paddington Depot, Nine Elms Depot, or Pimlico Wharf	£0 2 3	£0 2	4½

SLATES.

	in. in.	£ s. d.	per 1,000 of
Blue Portmadoc	20×10	12 12 6	1,200 at r.stn.
,, ,,	16× 8	6 13 6	,, ,,
Blue Bangor	20×10	13 2 6	,, ,,
,, ,,	20×12	13 17 6	,, ,,
First quality	20×10	13 0 0	,, ,,
,, ,,	20×12	13 15 0	,, ,,
,, ,,	16× 8	7 5 0	,, ,,
Eureka unfading green	20×10	15 17 6	,, ,,
,, ,,	20×12	18 7 6	,, ,,
,, ,,	18×10	13 5 0	,, ,,
,, ,,	16× 8	10 5 0	,, ,,
Permanent green	20×10	11 12 6	,, ,,
,, ,,	18×10	9 12 6	,, ,,
,, ,,	16× 8	6 12 6	,, ,,

BRICKS.

(All prices net.)

First Hard Stocks	£1	15	0	per 1,000 alongside, in	
Second Hard Stocks	1	11	0	,, ,,	river.
Mild Stocks	1	9	0	,, ,,	,,
Picked Stocks for Facings	2	5	0	,,	delivered at rly. stn.
Flettons	1	10	0	,, ,,	,,
Pressed Wire Cuts	1	18	0	,, ,,	,,
Red Wire Cuts	1	14	0	,, ,,	,,
Best Fareham Red	3	12	0	,,	,,
Best Red Pressed Ruabon Facing	5	0	0	,, ,,	,,
Best Blue Pressed Staffordshire	3	15	0	,, ,,	,,
Ditto Bullnose	4	0	0	,, ,,	,,
Best Stourbridge Firebricks	3	14	0	,,	,,
2½in. Best Red Accrington Plastic Facing Bricks	4	10	6	,,	Net, delivered in full truck loads in London.

* Accrington Best Red Plastic Facing per 1,000

Bricks	£2	10	0
3½" ditto Second Best Plastic ditto	2	2	6
Ditto Ordinary Second Bricks	1	11	3
Ditto Plastic Engineering Bricks	1	17	6
Sewer Arch Brick not more than 3½" in thickest part	2	0	0
3½" Chimney Bricks fit for outside work	2	6	0
3½" ditto ditto through and through	2	0	0
3½" Beaded, Ovolo and Bevel Jambs; Octagons; 2½" and 3" radius Bullnoses; Stock patterns	3	7	6
Accrington Air Bricks, 9"×2 course deep, each	0	0	6
Ditto ditto 9"×1 course ,,	0	0	3

Accrington Camber Arches :—

3 course deep, 4½" soffit, per foot opening							0	1	3
4	ditto	4½"	ditto	ditto	ditto	...	0	1	8
5	ditto	4½"	ditto	ditto	ditto	...	0	2	1
6	ditto	4½"	ditto	ditto	ditto	...	0	2	6
3	ditto	9"	ditto	ditto	ditto	...	0	2	1
4	ditto	9"	ditto	ditto	ditto	...	0	2	11
5	ditto	9"	ditto	ditto	ditto	...	0	3	9
6	ditto	9"	ditto	ditto	ditto	...	0	4	6

Net free on rail or free on boat at works.

GLAZED BRICKS.

HARD GLAZES, (PER 1,000.)

White, Ivory, and Best. Salt Glazed.	Seconds.	Buff, Cream, & Bronze.	Other Colours.	Second Colours.
Stretchers—				
£12 7 6	£10 17 6	£13 17 6	£17 17 6	£12 7 6
Headers—				
11 17 6	10 7 6	13 7 6	17 7 6	11 17 6
Quoins, Bullnose, and 4½in. Flats—				
15 17 6	14 17 6	17 17 6	21 7 6	15 17 6
Double Stretchers—				
17 17 6	16 7 6	20 17 6	24 7 6	17 17 6
Double Headers—				
14 17 6	13 7 6	17 17 6	21 7 6	14 17 6
One side and two ends, square—				
18 17 6	17 7 6	21 17 6	26 7 6	18 17 6
Two sides and one end, square—				
19 17 6	18 7 6	22 17 6	26 17 6	19 17 6
Splays and Squints—				
17 7 6	15 17 6	21 17 6	24 17 6	17 7 6

Plinth and Hollow Bricks. Stretchers and Headers—
5d. each 4d. each 6d. each 6d. each 5d. each

Double Bullnose, Round Ends, Bullnose Stops—
5d. each 4d. each 6d. each 6d. each 5d. each

Rounded Internal Angles—
4d. each 3d. each 5d. each 5d. each 4d. each

MOULDED BRICKS.

Stretchers and Headers—
8d. each 8d. each 8d. each 8d. each 8d. each

Internal and External Angles—
1/2 each 1/2 each 1/2 each 1/2 each 1/2 each

Cill Bullnose, Stretchers and Headers—
5d. each 4d. each 6d. each 6d. each 5d. each

Majolica or Soft Glazed Stretchers and Headers	Per 1,000	£22	17 6
,, ,, Quoins and Bullnose		27	17 6
Compass bricks, circular and arch bricks of single radius £6 per 1,000 over above list for their respective kinds and colours	Not exceeding 9in. by 4½in. by 2¾in.		
Camber arch bricks, any kind or colour, 1s. 2d. each			

Stretchers cut for Closers and Nicked Double Headers, £1 per 1,000 extra.

* These prices are carriage paid in full truck loads to London Stations.

	s.	d.	
Thames Sand	7	6	per yard, delivered
Pit Sand	7	0	,, ,,
Thames Ballast	6	0	,, ,,

	s.	d.		s.	d.	Per ton,
Best Portland Cement	36	0	to	41	0	delivered
Ground Blue Lias Lime	21	0	per ton delivered.			

Exclusive of charge for sacks.

	s.	d.		s.	d.	Per yard,
Grey Stone Lime	13	6	to	14	0	delivered

Stourbridge Fireclay in sacks 27s. 0d. per ton at railway station.

TILES.

	s.	d.	Dlvrd. at
Plain red roofing tiles	42	0	per 1000 ry. stn.
Hip and Valley tiles	3	7	per doz. ,, ,,
Broseley tiles	50	0	per 1000 ,, ,,
Ornamental tiles	52	6	,, ,, ,,
Hip and Valley tiles	4	0	per doz. ,, ,,
Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000 ,, ,,
Ornamental do.	60	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	0	,, ,, ,,
Selected "Perfecta" roofing tiles :—Plain tiles (Peake's)	46	0	per 1000 ,, ,,
Ornamental do.	48	6	,, ,, ,,
Hip tiles	3	10½	per doz. ,, ,,
Valley tiles	3	4½	,, ,, ,,
"Rosemary" brand plain tiles	48	0	per 1000 ,, ,,
Ornamental tiles	50	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	8	,, ,, ,,
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 ,, ,,
Hand-made sand-faced	45	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
Valley tiles	3	6	,, ,, ,,
Hartshill" brand plain tiles, sand-faced	50	0	per 1000 ,, ,,
Pressed	47	6	,, ,, ,,
Ornamental do.	50	0	,, ,, ,,
Hip tiles	4	0	per doz. ,, ,,
alley tiles	3	6	,, ,,

OILS.

Rapeseed, English pale, per tun	£28	15	0	to £29	5 0
Do., brown ,, ...	26	15	0	,, 27	5 0
Cottonseed, refined ,, ...	29	0	0	,, 30	0 0
Olive, Spanish ,, ...	39	10	0	,, 40	0 0
Seal, pale ,, ...	21	0	0	,, 21	10 0
Cocoanut, Cochin ,, ...	46	0	0	,, 46	10 0
Do., Ceylon ,, ...	42	10	0	,, 43	0 0
Do., Mauritius ,, ...	42	10	0	,, 43	0 0
Palm, Lagos ,, ...	32	5	0	,, 33	5 0
Do. Nut Kernel ,, ...	35	0	0	,, 35	10 0
Oleine ,, ...	17	5	0	,, 19	5 0
Sperm ,, ...	30	0	0	,, 31	0 0
Lubricating U.S. per gal,	0	7	0	,, 0	8 0
Petroleum refined ,, ...	0	0	6½	,, 0	0 6½
Tar, Stockholm per barrel	1	6	0	,, 1	10 0
Do., Archangel ,, ...	0	19	6	,, 1	0 0
Linseed Oil per gal.	0	2	4½	,,	—
Baltic Oil ,, ...	0	2	7	,,	—
Turpentine ,, ...	0	2	9	,,	—
Putty (Genuine Linseed Oil) per cwt.	0	8	0	,,	—
Pure Linseed Oil "Stority" Brand ,,	0	10	0	,,	—

GLASS (IN CRATES).

English Sheet Glass :	15oz.	21oz.	26oz.	32oz.
Fourths	2d.	3d.	3½d.	4½d.
Thirds	2½d.	3½d.	4½d.	5½d.
Fluted Sheet	2¾d.	3¾d.	6½d.	7d.
Hartley's English Rolled Plate :	¼in.	3/16in.	⅜in.	
	2½d.	2½d.	3d.	
Figured Rolled and Repoussine		White.	Tinted	
		3½d.	5d.	

VARNISHES, &c. Per gallon.

Fine Pale Oak Varnish	£0	8	0
Pale Copal Oak	0	10	0
Superfine Pale Elastic Oak	0	12	6
Fine Extra Hard Church Oak	0	10	0
Superfine Hard drying Oak, for seats of churches	0	14	0
Fine Elastic Carriage	0	12	0
Superfine Pale Elastic Carriage	0	16	0
Fine Pale Maple	0	16	0
Finest Pale Durable Copal	0	18	0
Extra Pale French Oil	1	1	0
Eggshell Flatting Varnish	0	18	9
White Copal Enamel	1	4	0
Extra Pale Paper	0	12	9
Best Japan Gold Size	0	10	9
Best Black Japan	0	16	0
Oak and Mahogany Stain	0	9	0
Brunswick Black	0	8	0
Berlin Black	0	16	0
Knotting	0	10	0
French and Brush Polish	0	10	0

CHIPS.

The Local Government Board have consented to the preparation by the Doncaster Rural District Council of a town-planning scheme for the Askern district.

The Public Works Loan Commissioners have appointed Mr. George A. Calder to be their Secretary in succession to the late Mr. Robert Philpot, C.B.

In the village of Cabinteely a Carnegie free library has just been built from plans by Messrs. Doolin and Butler of Dublin. The contractor was Mr. Daniel Dowling of Kingstown.

On Saturday a stained glass east window, erected by members of the family as a memorial to the late Mr. J. H. Leather, of Lark Hill, was dedicated at St. Luke's Church, Cleckheaton.

Mr. Francis Leon Pitcher, architect of 91, Tollington Park, N., died on Wednesday, the 17th inst., in his 61st year. He had been a Licentiate of the Royal Institute of British Architects since 1911.

At a special vestry meeting held at Christchurch, Hants, on Friday night, it was resolved, by 206 votes to 79, to postpone for ten months consideration of the extensive alterations to the Lady-chapel of the Priory Church proposed to be made under the Shute bequest.

At a meeting of the York Education Committee, held on Friday evening, Mr. A. W. Bellis, assistant master of the Ipswich School of Art and formerly of the Leeds School of Art, was appointed assistant master at the York School of Art, at a salary of £150 a year, rising to £200.

At the Roman Catholic Church of Our Lady and St. Anne, Caversham, on Sunday, Dr. McIntyre, Bishop-Auxiliary of Birmingham, dedicated a marble altar given in commemoration of the Constantinian Jubilee, 1913. The altar and the wall decorations were designed by Mr. E. L. Freeman.

The Chelmsford Corporation (Mr. P. T. Harrison, borough surveyor) are carrying out an important street improvement at the junction of Ranesford and Broomfield roads. The works are being executed under the direction of Mr. P. T. Harrison, the borough surveyor, Messrs. W. and C. French, Buckhurst Hill, being the contractors.

The electric heating installation of the Pterus Church, Christiania, has now been completed. This is the first installation of its kind in Scandinavia; but others are now being proceeded with. The electric heating of churches was first started about ten years ago in Germany and Switzerland. It is effected by radiating pipes laid close to the floor, and the installation is said to be comparatively cheap.

The inhabitants of Redgrave and Botesdale, Suffolk, have built as a monument to the late Rev. Thomas Holt Wilson, Rector of Redgrave, a church house situate on the Norwich and Bury Road, at the entrance to Botesdale. The room, which has been built by Messrs. Theobald, of Needham Market, is of red brick, with hollow walls and flat-bottomed pantiles, and has seating accommodation for 200 persons. The lower walls are match-boarded, and the pitch pine roof is supported by light iron trusses.

The Manchester Art Gallery Committee decided, subject to the sanction of the city council, to purchase several new works of art. The most important is an oil-painting by William Stott, of Oldham, named "Awakening of the Spirit of the Rose." Others are a moorland landscape by H. Hughes-Stanton, A.R.A., four etchings by Walcott, two by Frank Brangwyn, one by Mortimer Menpes, and one by Hedley Fitton; a painting entitled "The Great Green Hills of Yorkshire," by Bertram Priestman, R.O.I.; and a bronze statuette, "A Boy at Play," by W. Goscombe John, R.A.

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120. Bunhill Row, London, E.C.

TENDERS.

*** Correspondents would in all cases oblige by giving the addresses of the parties tendering—at any rate, of the accepted tender; it adds to the value of the information.

Aberavon. — For erection and completion of the Aberavon picturedrome, for Mr. J. Rees:—

Lloyd and Nesbett, Cardiff ...	£2,550 0 0
Roberts, S., Ltd., Plymouth	2,382 0 0
Cox, M., Port Talbot ...	2,374 0 0
Maggs, J. H. and Co., Cardiff	2,298 0 0
Anderson & Vaughan, Aberavon *	2,203 7 9
Rees, S. T., Aberavon ...	2,200 0 0
Vaughan, J., Port Talbot ...	2,198 0 0
Vickery Bros., Barry Dock	2,184 0 0
Lake, J., Port Talbot	2,115 0 0

* Accepted.

Aylsham.—For the repair of the roof of the workhouse infirmary, for the board of guardians:—

Blyth, J., jun., Foulsham ...	£123 0 0

(Accepted.)

Ayr.—For alterations at the fire station and store, and providing new office, for the corporation:—

Drinnan, W. (accepted)	£112 0 0

Batley.—For supply of a pipe scraper apparatus, for the electricity committee:—

Leeds Meter Co. (accepted) ...	£180 0 0

Durham.—For the erection of a new hall, offices, and agents' house, for Durham Miners' Association. Mr. H. T. Gradon, A.R.I.B.A., architect:—

Douglas, J., Newcastle-on-Tyne ..	£23,243 0 0
Lumsden, T., Jarrow-on-Tyne ...	22,390 0 0
Davidson, S.F., Newcastle-on-Tyne	21,949 11 6
Hall, W. Gateshead	21,915 0 0
White, J. W., Sunderland... ...	21 899 0 0
Moss and Sons, Loughborough ...	21,800 0 0
Miller, J. L., North Shields ...	21,401 0 0
Groves, G., Chester-le-Street * ...	21,357 6 2
Miller, S., Newcastle-on-Tyne ...	21,242 7 6

* Accepted.

Gabalfa.—For extension of cables to Whitchurch-road, Gabalfa, and Rhubina Garden City, for the Llandaff and Dinas Powis Urban District Council:—

British Insulated and Helsby Cables, Ltd. (accepted)	£3,161 0 0

Gosport.—For the supply and fixing complete of a steel steam main at their air-compressing station, Westfield, Gosport, for the Gosport and Alverstoke Urban District Council. Mr. H. Frost, engineer and surveyor:—

Spencer, J., and Co., Wednesbury	£285 0 0

(Accepted.)

Great Yarmouth.—For the supply of pile toes, for the harbour commissioners:—

Westwood and Wright, Beverley Hill, Staffs (accepted)	£147 10 6

Great Yarmouth. — For the supply of land ties, plates, and bolts required at the Fish Wharf Quay, for the Harbour Commissioners:—

Brown and Co., Great Yarmouth	£182 16 10

(Accepted.)

Hastings.—For the construction of two shelter seats upon the parade, one at Marina, St. Leonards, and one at Marine Parade, Hastings, for the corporation. Mr. P. H. Palmer, M.I.C.E., borough engineer:—

Pettit, F. T., Queen's-road, Hastings (accepted)	The Pair. £365 0 0

Hill Heads.—For the erection of 38 workmen's dwellings at Hill Heads, for the Whitley and Monkseaton Urban District Council:—

Douglass, J., Newcastle-on-Tyne	£9,013 6 9

(Accepted.)

Hornsey.—For alterations and additions to fire station at South Harringay, for the Hornsey Borough Council:—

Stevens and Sons, Muswell Hill-road (accepted)	£345 0 0

Horsley-on-Tyne.—For laying drain-pipes, constructing sewage tank, and other works, for the parochial committee:—

Balch, C. S., Newcastle-on-Tyne	£327 0 0
Kennedy, W., Jarrow-on-Tyne ...	273 0 0
Wilson, W., and Co., Newcastle-on-Tyne	249 0 0
Beattie, W., Corbridge-on-Tyne ...	244 0 0
I. Lishman, Horsley-on-Tyne ...	230 0 0

Hythe.—For supplying a steam disinfector, for the corporation:—

Grampian Engineering Co.	£178 0 0

(Accepted.)

Ipswich.—For removing and rebuilding Messrs. E. R. and F. Turner's boundary wall, and making good their buildings, for the Ipswich Dock Commission:—

Green, C. A. (accepted)	£108 0 0

Johannesburg.—For the supply of 6,000lb. s.c.c. and b. copper wire, for the municipal council:—

Telegraph Manufacturing Co. ...	£342 3 9
B.G.E. Co.	325 0 0
Siemens, Ltd.	312 10 0
Henleys, Ltd.	309 7 6
Siemens Ltd.	290 0 0
A. E. G. Co. (accepted)	288 0 0

Johannesburg.—For the supply of four sets of three-throw points and crossings, for the municipal council:—

Allen, E., and Co. (accepted) ...	£620 0 0

Johannesburg.—For the supply of ornamental wrought-iron shelters to the town entrance and Market-street tramways, for the municipal council:—

Martyn, H. H., and Co.	£1,235 0 0
Wragge, G., and Co.	1,120 0 0
Bromsgrove Guild	1,015 0 0
Gardiner, Sons, and Co.	970 0 0
Braun, T., and Co., and Co. ...	875 0 0
Hill and Smith (accepted)... ...	850 0 0

Kingsteignton.—For building a bakery store at Kingsteignton, for Mr. G. H. Beer. Mr. S. Segar, Newton Abbott, architect:—

Parker Bros.	£499 0 0
Stacey, F. A. A.	494 0 0
Mills, H.	459 0 0
Jealley, F. I., and Son	446 15 9
Taylor, W. H.	430 0 0
Howe, S., and Sons	426 10 0
Pearce, W. F.	423 0 0
Wilkins and Sons	419 0 0
Yeoman, A. P., Kingsteignton* ...	389 8 0

* Accepted.

Leavesden.—For the supply and fixing of a steam engine and mechanical appliances in the kitchen at the Leavesden Asylum, for the Metropolitan Asylums Board:—

Prockter, F. M., Ltd., Manchester	£850 0 0
Watford Engineering Works, Ltd., Watford	246 0 0
May, J. and F., Lincoln's Inn Fields, W.C.*	224 10 0

Engineer-in-chief's estimate, £240.

* Recommended for acceptance.

Llandaff and Dinas Powis. — For supplying and laying cables, for the urban district council:—

British Insulated and Helsby Cables, Ltd. (accepted)	£3,161 0 0

Long Marston.—For the water supply scheme, for the Marston Sicca Rural District Council:—

Johnson Bros., Gloucester	£1 673 17 9
Holloway, A., Wolverhampton ...	1,121 18 10
Broad, T., Ltd., Great Malvern ...	1 039 0 0
Currall, Lewis, and Martin, Birmingham	999 0 0
Childs and Withers, Worcester ..	954 5 7
Firth and Co., Derby	920 0 0
Thorpe, W., Birmingham ..	899 15 0
Riley, J., Cheltenham	895 1 4
Whittaker Ellis, Birmingham ...	884 3 10
Barke, F., & Son, Stoke-on-Trent ..	860 11 6
Law, G., Kidderminster	840 0 0
Staveley Coal & Iron Co., Chesterfield	834 13 0
Rowell & Sons, Chipping Norton *	818 19 0

* Accepted.

Lowestoft.—For structural alterations to the Crown-street mission hall, which was recently acquired as new offices for the clerk, for the guardians:—

Mills, F. Lowestoft	£413 0 0
Curtis, T.	402 0 0
Todd and Sons	394 14 0
Underwood	380 6 0
Mobbs Bros. (accepted)	358 10 0

Lyndhurst.—For the supply of granite for the roads, for the New Forest Rural District Council. *Per ton:—

	s. d.	s. d.
Penleaze & St. Ives Stone Quarry Co., Bristol	14 0	... 15 6
Road Maintenance and Stone Supply Co., Gravesend	13 2	... 12 11
British Macadam Co., Gravesend* ...	13 2	... 12 11

* Accepted for both.

Puttocks, Oak, Herts.—For constructing a sewer at Puttocks Oak, for the Hatfield Rural District Council:—

Naden (accepted)	£74 0 0

(Lowest of three tenders received.)

Romsey.—For paving and kerbing works on to main road footways, for the town council:—

Pace, C. (accepted)	£113 10 7

Selby.—For the erection of hippodrome. Messrs. Blenkinsopp and Scatchard, Midland Bank Chambers, Park-street, Selby, architects. Quantities by the architects:—

Reed, Selby (accepted)	£2,657 0 0

Shrewsbury.—For making a road from Longden Coleham to Belle Vue-Road, for the town council:—

Price, H., Welsh Bridge, Shrewsbury (accepted)	£698 0 0

Skellow.—For the improvement of Owston-road, Skellow, for the Doncaster Rural District Council:—

Fletcher, C., Doncaster	£633 17 3

(Accepted.)

Southampton.—For constructing additions for the administration block at the isolation hospital, Shirley, for the corporation:—

Moss, W., and Sons, Ltd., Loughborough	£1,954 0 0
Jenkins and Sons, Ltd.	1,890 0 0
Stevens, H., and Co....	1,850 0 0
Douglas, J., Southampton* ...	1,848 0 0

* Accepted.

South Molton. — For alterations, additions, and decorations to East Johnstone, for Mr. H. Sanders. Mr. G. P. Allen, L.R.I.B.A., 32, Craven-street, Charing Cross, architect:—

Woolaway and Sons, Barnstaple	£450 0 0

(Accepted.)

Spondon.—For additions to Liberal Club, Spondon. Messrs. F. S. Antliff and Son, Draycott, near Derby, architects:—

Long, T., and Sons, Nottingham	£823 0 0
Astle, J., Spondon	781 2 0
Fryer, J. H.	747 6 0
Bow, T., Nottingham	745 0 0
Clifford, J. S., Borrowash	738 0 0
Morley, E., and Sons	735 0 0
Ford, W., and Sons...	724 0 0
Warner, H. S.	720 0 0
Vernon, H.	708 3 8
Kirkland, J., and Son, Spondon ..	671 0 0
Perks, F., and Son, Long Eaton ..	660 0 0
Youngman, T. W., Draycott ...	657 0 0
Brown, J., and Son, Long Eaton ..	647 0 0
Maddocks, J., Spondon (accepted)	617 10 0

Architect's estimate, £658.

(Rest of Derby.)

A new soldiers' and sailors' home is about to be built in East Register-street, Edinburgh, from plans by Messrs. Scott and Lorne Campbell, of that city.

Mr. F. M. Elgood, of Wimpole-street, W., has been retained by the Carshalton Council as consulting surveyor in connection with the preparation of the town-planning scheme.

The Norwegian Church which has been erected at Overnewton, Glasgow, was formally inaugurated on the 18th inst. It provides accommodation for 250 worshippers, and has halls connected with it which will be open for the use of sailors of all nations.

During 1913 the railways of Canada have had under various stages of construction more than 6,000 miles of new lines. By June 30 last, when the year for railway-statistics closed, between 1,800 and 2,000 miles had been taken into operation as finally completed, and since that date there has been great activity.

TO CORRESPONDENTS.

It is particularly requested that all drawings and all communications respecting illustrations or literary matter, books for review, etc., should be addressed to the EDITOR of the BUILDING NEWS, Effingham House, 1, Arundel-street, Strand, W.C., and not to members of the staff by name. Delay is not infrequently otherwise caused. All drawings and other communications are sent at contributors' risks, and the Editor will not undertake to pay for, or be liable for, unsought contributions.

We do not hold ourselves responsible for the opinions of our correspondents. All communications should be drawn up as briefly as possible, as there are many claimants upon the space allotted to correspondents.

*** Drawings of selected competition designs, important public and private buildings, details of old and new work, and good sketches are always welcome, and for such no charge is made for insertion. Of more commonplace subjects—small churches, chapels, houses, etc.—we have usually far more sent than we can insert, but are glad to do so when space permits on mutually advantageous terms, which may be ascertained on application.

When favouring us with drawings or photographs, architects are asked kindly to state how long the building has been erected. It does neither them nor us much good to illustrate buildings which have been some time executed, except under special circumstances.

Received.—J. W. G. and Son.—E. W. N. S.—C. E. C. B. of C.—J. T. A.—W. E. S.—S., Ltd.—H. A. C. J. G. K. and Son.—J. W. and Son.—F. W. E. G. H. H. S. Co., Ltd.—J. M. N. and Son.—A. W. R. A. and Son.—W., Ltd.—B. B. C.

Film. Yes.

Enquirer.—Optional, we think.

Matron.—We hope to, if we get facilities. A hint from you might help.

Ralph.—We cannot say what the patent is worth. 2. Yes.

J. Smith.—Why not go to Messrs. Allday, Ltd., in your city? Their address is Edmund-street.

Q.—Hardly a time to rip up old sores. In some things we think your view is the right one; but there were "extenuating circumstances."

Bowman.—Messrs. Robert Kearsley and Co., Ltd., Ripon, can doubtless suit you. Ask them to send you a trial sample of their double-bodied copal varnish "Kapitia," which they sell at 12s. a gallon.

Scotsman. You will find Horrex's Hotel, Norfolk-street, or the Norfolk Hotel, Surrey-street, both comfortable and reasonable. They are both only a stone's throw from our office, and we trust you will look in.

Johnathan. — Write to Hardwidge-street Works, Bermondsey, S.E., for particulars of the Universal Mitring Machines. All work is set out at all angles correctly. The knives when chipped or dull can be lowered into gap, bringing fresh cutting edge into action. Messrs. J. Hollis and Co. are the makers.